

**THE FEDERAL DEMOCRATIC REPUBLIC OF  
ETHIOPIA  
CENTRAL STATISTICAL AUTHORITY**

**REPORT ON  
URBAN BI-ANNUAL EMPLOYMENT UNEMPLOYMENT SURVEY  
April 2004 1<sup>st</sup> Year Round 2**

**Addis Ababa  
September 2004**

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**STATISTICAL BULLETIN**

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# CHAPTER I

## BACKGROUND TO THE SURVEY

### 1.1 Introduction

Statistical information on all aspects of socio-economic activities is essential for the designing, monitoring, evaluation of development plans and policies. Labour force surveys are one of the important sources of data for assessing the role of the population of the country in the economic and social development process. These surveys provide data on the main characteristics of the work force engaged or available to be engaged in productive activities during a given period and its distribution in the various sectors of the economy. It is also useful to indicate the extent of available and unutilized human resources that must be absorbed by the national economy to ensure full employment and economic well being of the population. Furthermore, the information obtained from such surveys is useful for the purpose of macro-economic monitoring and evaluation of human resource development planning. The other broad objective of statistics on the labour force is for the measurement of relationship between employment, income and other social and economic characteristics of the economically active population for the purpose of formulating, monitoring and evaluation of employment policy and programs. Seasonal and other variations and changes over time in the size and characteristics of the employment and unemployment can be monitored using up-to-date information from labour force surveys.

CSA has been providing labour force and related data at different levels and with varying content details. These include the 1976 Addis Ababa Manpower and Housing Sample Survey, the 1978 Survey on Population and Housing Characteristics of Seventeen Major Towns, the 1980/81 and 1987/88 Rural Labour Force Surveys, and the 1984 & 1994 Population and Housing Census. A comprehensive national labour force result representing both urban and rural areas was also provided based on the 1999 Labour Force Survey. The 1996 and 2002 Surveys of Informal Sector and most of the household surveys also provide limited data on the area. Moreover, some information can be derived from small, large and medium scale establishment surveys.

As the sector is dynamic and sensitive to economic and social changes, it is important to have up to date data that will show current levels and that will be used for trend and comparative analysis. Earlier data in this regard were not regular and up to date. Thus, to fill-in the data gap in this area, a series of current and continuous labour force surveys need to be undertaken. Recognizing this fact and in response to request from different data users, the CSA had launched a Bi-annual Employment and Unemployment Survey program starting October, 2003 G.C

This survey is the second in the series. Like the first round, it covered only urban areas of all regions with the exception of Gambela. The earlier report on the urban Bi-annual Employment Unemployment survey was published in Statistical Bulletin 301. This report presents some of the summary of findings of the surveys together with statistical tables.

## **1.2 Objectives of the survey**

The Bi-annual Employment and Unemployment Survey program was designed to provide statistical data on the size and characteristics of the economically active and the non-active population of the country on continuous basis. The data will be useful for policy makers, planners, researchers, and other institutions and individuals engaged in the design, implementation and monitoring of human resource development projects and the performance of the economy. The specific objectives of this survey are to:

- Up date data on the size of work force that is available to participate in production process;
- determine the status and rate of economic participation of different sub-groups of the population;
- identify those who are actually contributing to the economic development (employed) and those out of the sphere;
- determine the size and rate of unemployed population;
- provide data on the structure of the working population;
- obtain information about earnings from paid employment;
- identify the distribution of employed population in the formal/informal sector of the economy;
- generate data to trace changes over time.

## **1.3 Contents of the questionnaire**

The survey is mainly aimed at providing information on the economic characteristics of the population aged 10 years and over, i.e., their activity status, employment, and unemployment situation. It has also covered detailed socio-demographic background variables such as age, sex, relationship to the head of household, educational status, and training, marital status. Same questionnaire used for the first Round Survey is administered in this round.

## **CHAPTER II**

### **SURVEY METHODOLOGY**

#### **2.1 Scope and Coverage**

The 2004 Urban Bi-annual Employment and Unemployment Survey (**UBEUS**) covered only urban parts of the country. Except three zones of Afar, six zones of Somali regions, where the residents are pastoralists, and every part of Gambella region, all urban centers of the country were considered in this survey. Including Addis Ababa City Administration and Dire Dawa Administrative Council, the following ten domains (reporting levels) were formed.

1. Urban Tigray
2. Urban Afar
3. Urban Amhara
4. Urban Oromia
5. Urban Somali
6. Urban Benishangul-Gumuz
7. Urban SNNP
8. Urban Harari
9. Urban Addis Ababa
10. Urban Dire Dawa

Taking into account of domain for the entire country, all in all, eleven domains (reporting levels) were constructed.

#### **2.2 Sample Design, Sample Size and Response Rate**

Information from the listing of the 1994 Population and Housing Census was utilized to develop the sampling frame for the 2004 Urban Bi-annual Employment and Unemployment Survey. It was by taking in to account of cost and precision of major variables that determination of sample size was achieved. Moreover, in order to judge precisions of major variables, the 1999 Labor Force Survey result was the main source of information that was taken into consideration.

Except Harari, Addis Ababa and Dire Dawa, where all urban centers of the domain were incorporated in the survey, in other domains a three stage stratified cluster sample design was adopted to select the samples from each domain. The primary sampling units (PSU's) were urban centers selected systematically using probability proportional to size; size being number of households obtained from the 1994 Population and Housing Census. From each selected urban centers enumeration areas (EA's) were selected as a second-stage sampling unit (SSU). The selection of the SSU's was also done using probability proportional to size; size being number of households obtained from the 1994 Population and Housing Census. For each sampled EA a fresh

list of households was prepared at the beginning of the survey. Thirty households from each sample EA were selected at the third stage. The survey questionnaire was finally administered to those thirty households selected at the last stage.

The selection scheme for Harari, Addis Ababa and Dire Dawa was similar to the case explained above. However, in these three domains instead of a three-stage design a two-stage stratified cluster sample design with enumeration areas as PSU and households (from the fresh list) as secondary sampling unit was used.

As regards the response rate of the survey, a total of 99 urban centers were selected and incorporated in to the survey. To be covered by the survey, 527 enumeration areas was initially selected, and the survey could successfully be carried out in 507(96.20%) out of all the 527 of the EA's. The total number of expected households that were to be interviewed was 15810; however, due to different reasons 740 sample households were not interviewed, including households from 20 EAs of Gambella Region. As a result only 15070 households were actually covered by the survey, which made the ultimate response rate of the survey 95.32 %.

**Table 2.1 Selected Urban centers, Planned and Covered Enumeration Areas & Households by Domain of Estimation.**

Domain (Reporting Level)	No. of Urban Centers	Enumeration Areas		Households	
		Planned	Covered	Planned	Covered
Urban Tigray	9	40	40	1200	1191
Urban Afar	5	22	22	660	646
Urban Amhara	18	90	90	2700	2678
Urban Oromia	29	125	125	3750	3723
Urban Somali	7	25	25	750	741
Urban Benishangul-Gumuz	6	20	20	600	599
Urban SNNP	17	63	63	1890	1884
Urban Gambella	4	20	-	600	-
Urban Harari	1	22	22	660	641
Urban Addis Ababa	1	75	75	2250	2222
Urban Dire Dawa	2	25	25	750	745
Country Total	99	527	507	15810	15070

Distribution of sampling units (planned and covered) by domain (reporting level) is specified in [Table 2.1](#). Estimation procedures of total, ratio and sampling errors are also given in [Annex](#).

### **2.3 Training of Field Staff**

Like the first round survey, the training program of enumerators, supervisors and other field office staff was conducted in two stages. The first stage refreshment training was conducted at the head quarters of the CSA, in Addis Ababa for about one and half days. The participants were selected from professionals and sub-professionals with long time experiences, branch office statisticians and coordinators, who were supposed to train enumerators and supervisors during the second stage of training conducted at the Branch Statistical Offices. The training was guided by an enumerator and supervisor manual, which consists of detailed explanation of concepts, ideas and instructions on how to fill each entry in the questionnaire.

The training at the branch office, which lasted for about seven days, consisted of theoretical discussions on concepts, definitions, and techniques of completing the questionnaire as well as mock and practical field practice interview of households and/or household members. The objectives of mock and practical interviewing of households were twofold. First, it enabled to assess how well the classroom theoretical discussions were understood by all participants so that they could convey the same message to the enumerators and the supervisors. The second objective was to examine the difficulty, which would likely be encountered during actual fieldwork.

### **2.4 Organization of the Fieldwork**

In order to carry out this survey with the desired level of quality, there was a need to organize a large staff that performs the various survey activities. The 24 Branch Statistical Offices of the Authority carried out the data collection operation. These offices have permanent and contract enumerators stationed in the selected enumeration areas. The data collection operation of the survey involved a total of about 248 enumerators and about 69 field supervisors with an average supervisor-enumerator ratio of 1: 4.

The interviews have been done by going from house-to-house. The respondent from whom the information collected was the head of the household or other responsible household member. Most of the enumerators were assigned to 2-3 sampled enumeration areas where data collection was carried out in phases. That is, after completing the data collection in the selected enumeration area enumerators were shifted to another nearest sample sites to carry out the same exercise. Interpreters were made available in cases where there is difficulty to converse with the respondent's dialect. Data collection took place between April 18 and May 16/2004.

## 2.5 Concepts And Definitions of Key Variables

Some of the operational definitions of basic concepts are given below. Other concepts related with economic activity status will be provided in respective chapters.

**Urban Center:** - In principle is defined as a locality with 2000 or more inhabitants. In this survey, however, for practical purposes an urban center includes the following regardless of the number of inhabitants.

- i) All administrative capitals (Regional capitals, Zonal capitals and Wereda capitals),
- ii) Localities with Urban Dweller's Association (UDAs) not included in (i),
- iii) All localities which are not included either in (i) or (ii) above, having a population of 1000 or more persons, and whose inhabitants are primarily engaged in non-agricultural activities.

**Kebele:** is the lowest administrative unit in an urban center with its own jurisdiction. It is an association of urban dwellers (commonly known as kebele) formed by the inhabitants, and usually constitutes a part of the urban center.

**Enumeration Area (EA):** is a unit of land delineated for the purpose of enumerating population and housing units without omission and duplication. An EA in rural areas usually consists of 150-200 households, and on the other hand, an EA in urban areas constitutes 150-200 housing units.

**Household:** Consists of a person or groups of persons, irrespective of whether related or not, who normally live together in the same housing units or group of housing units and have common cooking and eating arrangements.

**Head of household:** is a person who economically supports or manages the household or for some reason of age or respect is considered as head by the other members of the household. It could be a male or a female.

**Usual member of a household:** a person is considered as usual members of a household if he or she is:-

- a) a person who continuously, that is, at least for six months live and have a common cooking and eating arrangements with the household; or
- b) a person who is absent from the household at the time of the survey but his absence has not elapsed the six months criterion; or House maids, guards, baby sitters, etc...with no other dwelling and who were staying with the household at the time of the survey.

## **2.6 Data Processing**

The filled-in questionnaires that were retrieved from the field were first subjected to manual editing and coding. During the fieldwork the field supervisors, Statisticians and the heads of branch statistical offices have checked the filled-in questionnaires and carried out some editing. However, the major editing and coding operation was carried out at the head office. All the edited questionnaires were again fully verified and checked for consistency before they were submitted to the data entry. After the data was entered, it was again verified using the computer.

Using the computer edit specification prepared earlier for this purpose, the entered data were checked for consistencies and then computer editing or data cleaning was made by referring back to the filled-in questionnaire. This is an important part of data processing operation in attaining the required level of data quality. Consistency checks and re-checks were also made based on tabulation results. Computer programs used in data entry, machine editing and tabulation were prepared using the Integrated Microcomputer Processing System (IMPS).

## **2.7 Organization of the Report**

This report contains six chapters. The first chapter covers background to the survey, where the objectives and the contents of the survey questionnaire were discussed. Chapter II deals with the survey methodology, where scope and coverage, sample size and response rate, training of field staff, organization of field work, concepts and definitions of key variables, data processing and organization of the report were presented. The results of the survey are presented in the subsequent four chapters, that is, chapters III to VI. Chapter III deals in brief with the size and socio-demographic characteristics of the urban population such as the distribution of population by age and sex. Chapter IV presents data on the economically active and non-active population aged ten years and over. Chapter V explores the characteristics of the employed population; finally Chapter VI focuses on the detailed characteristics of the unemployed population. Statistical tables corresponding to each of the summary chapters are presented in Annex I. Annex II provides Survey Questionnaire, while estimation procedures of total, ratio and sampling errors; and Estimates and CV's for Selected Tables are presented in Annex III and Annex IV, respectively.



## **CHAPTER III**

### **SIZE AND SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE URBAN POPULATION**

#### **3.1 Introduction**

This chapter presents background information, which is pertinent for proper interpretation of results in this and in the subsequent chapters. These include population size, age-sex structure, age dependency ratio and sex ratio.

#### **3.2 Sizes and Age-Sex Structure of the Urban Population**

Population size is one of the most important variables in human development planning. The structure of the population in terms of age and sex is also another important aspect of demographic characteristics. Summary Table 3.1 presents the distribution of urban population covered by the survey classified by sex and region, while Summary Table 3.2 shows sex and age distribution of urban population of the country and regions.

The survey result showed that the total urban population of the country in April 2004 to be 8,580,012, of which 4,088,282 (47.6 Percent) is males and 4,491,730 (52.4 Percent) is females. Addis Ababa City Administration followed by Oromia, took the highest share out of the total urban population of the country, while the least percentage is observed for Benishangul-Gumuz Region.

The data in Summary Table 3.2 indicates that children below 15 years of age constitute 33.9 percent of the total urban population. Apparently, 28.4 percent of the urban population falls within youth (15-24 years) age group. Old age persons (65 years of age and over) constitute only about 3 percent. Children together with the youth make up 62.3 percent, characterizing a young age structure of the population.

#### **3.3. Dependency Ratio and Sex Ratio of Urban Population**

One important implication of the age structure is the concept of dependency. Age dependency structure has an effect on the socio-economic development of a country. High age dependency increases the burden on the working population, as they have to support non-working population. The young and old age dependency ratio, that is, the ratio of those below age 15 and over 65 years

of age, respectively, to those aged 15-64 years are estimated to be 49.3 and 4 Persons per 100. This means, there are 49 young and 4 old dependents for each 100 working age population. It should be noted that these measures are crude because they did not consider actual engagement in productive activities.

**Summary Table 3.1 Distribution of Urban Population by Sex and Region: April 2004**

Region	Both Sexes		Male		Female		Sex Ratio
	No	%	No	%	No	%	
Country Total	8,580,012	100.0	4,088,282	100.0	4,491,730	100.0	91.0
Tigray	617,248	7.2	288,321	7.1	328,927	7.3	87.7
Afar	65,082	0.8	31,965	0.8	33,117	0.7	96.5
Amhara	1,466,918	17.1	677,396	16.6	789,522	17.6	85.8
Oromia	2,439,607	28.4	1,186,728	29.0	1,252,879	27.9	94.7
Somali	234,418	2.7	121,279	3.0	113,139	2.5	107.2
Benishangul-Gumuz	52,446	0.6	25,354	0.6	27,092	0.6	93.6
S.N.N.P.	961,877	11.2	461,777	11.3	500,100	11.1	92.3
Harari	79,215	0.9	38,177	0.9	41,038	0.9	93.0
Addis Ababa City Admin.	2,458,958	28.7	1,159,755	28.4	1,299,203	28.9	89.3
Dire Dawa Adm. Council	204,244	2.4	97,531	2.4	106,713	2.4	91.4

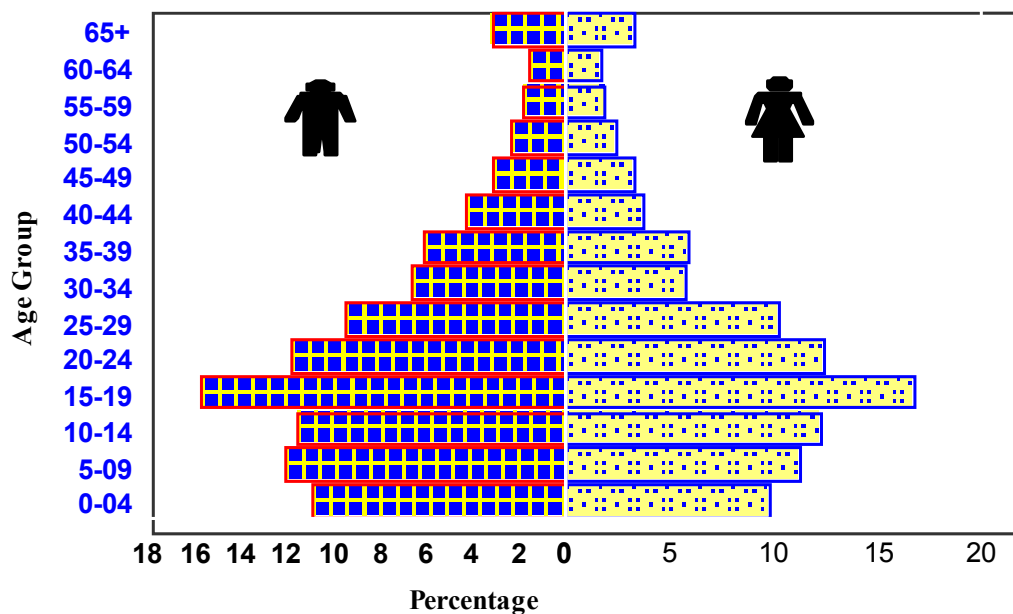
Further scrutiny of the population pyramid presented in Figure 3.1 showed consistently narrowing age pattern at the base, probably due to a general decline in fertility during recent years. The percentage of males and females in the age group 15-19 is found to be unusually (disproportionately) high. This could have happened partly due to age shift and partly due to migration of students from rural to urban areas.

Sex ratio is defined as the number of males per 100 females. The sex composition has an effect on economic activities through changing the relative size of the working population. Assuming no selective migration, sex ratio in the general population is expected to be 100. The data in Summary Table 3.1 indicates the overall urban sex ratio to be 91.0, showing excess females over males. Observation of sex ratio by regions reveals males predominantly exceeding females only in Somali Region (107.2).

**Summary Table 3.2 Distribution of Urban Population by Age Group and Sex, Country Total:  
April 2004**

Age Group and Sex	Both sexes		Male		Female	
	No	%	No	%	No	%
All Ages	8,580,012	100.0	4,088,282	100.0	4,491,730	100.0
0 – 4	883,826	10.3	443,980	10.9	439,847	9.8
5 – 9	996,872	11.6	492,082	12.0	504,790	11.2
10 – 14	1,016,673	11.8	470,704	11.5	545,969	12.2
15 – 19	1,388,683	16.2	640,298	15.7	748,386	16.7
20 – 24	1,038,332	12.1	481,608	11.8	556,725	12.4
25 – 29	841,904	9.8	386,459	9.5	455,446	10.1
30 – 34	522,522	6.1	267,311	6.5	255,211	5.7
35 – 39	506,477	5.9	246,396	6.0	260,080	5.8
40 – 44	340,225	4.0	172,964	4.2	167,261	3.7
45 – 49	274,215	3.2	126,198	3.1	148,017	3.3
50 – 54	203,199	2.4	94,499	2.3	108,700	2.4
55 – 59	157,482	1.8	73,604	1.8	83,878	1.9
60 – 64	136,155	1.6	63,862	1.6	72,292	1.6
65+	273,446	3.2	128,318	3.1	145,129	3.2

**Figure 3.1 Population Pyramid, Country Total : April 2004**



## **CHAPTER IV**

### **ECONOMICALLY ACTIVE AND NON-ACTIVE POPULATION**

#### **4.1 Introduction**

This chapter presents some of the major findings of the survey on the economically active and non-active population. The data on economically active population relates to that of the size and distribution of the work force engaged or available to be engaged in the production of economic goods and services during a given reference period. Such data together with other labour market information would be of a springboard for a clear formulation, monitoring and evaluation of policies and strategies on human resource development.

In terms of activity status, the survey divided the population aged ten years and over into economically active and inactive categories. The lower age limit was fixed at ten years to allow comparisons with other countries and to incorporate information about those children, who start taking part in many types of economic activities at early of young ages.

Economic activity in the survey was defined in terms of production of goods and services that fall within the United Nations System of National Accounts (SNA) production boundary (ILO, 1990). Hence, in the first and second round 2003/04 Urban Bi-annual Employment and Unemployment Survey, economic activity is defined as work, which involves the production of goods and/or services for sale or exchange and production of certain products for own consumption. According to the above general definition, economic activity covers production of goods and services intended for sale on the market, production of other goods and services such as government activities; production and processing of primary products (agriculture, hunting, fishing, forestry and logging, and mining and quarrying) for own consumption, processing of primary products by the producers themselves, production of other commodities where part of it is sold on the market; and own account construction and fixed asset formation (expected life use of one year or more). Such economic activities could be performed for an individual, family or private enterprise, government establishment or public organization. The remuneration may be on daily, weekly, fortnightly, monthly, yearly or contract basis. On the other hand, unpaid household chores such as preparing food, cleaning the house, taking care of children or collecting firewood for own consumption is not considered in the category of economic activity. Similarly, unpaid community and volunteer services and prostitution are classified as non-economic activities.

All persons aged ten years and over who were productively engaged or available to be engaged during the reference period were included as economically active persons. In other words, the economically active population comprises all persons aged ten years and over who were employed or unemployed in the reference period. The complements, i.e., those who were neither engaged nor furnish their labour constitute the economically inactive population.

## **4.2 Measurement Approaches of the Economically Active Population**

The two approaches, i.e., usual and current status approaches used for measuring the economically active population were employed in the survey. In the usual status approach, all persons aged ten years and over were asked to report whether they were engaged in productive activities or available to be engaged at work at least some time during the six calendar months prior to the survey month. Those persons who have been engaged or available to be engaged at work for sometime during the six months were further asked the number of weeks they spent on each activity status month by month. Based on this information, persons were categorized as employed and unemployed on the basis of majority rule, i.e., persons who were working and/or available to work for at least half of the total number of weeks (thirteen weeks) during the six months were classified as economically active. Among the economically active, those who spent at least half of their active period at work were categorized as employed. On the other hand, persons were categorized as unemployed if their availability period is greater than the employment period.

Those who neither engage nor available to work in productive activity during most of the reference period due to homemaking, education, illness, etc. are classified as the economically inactive. The economically inactive persons were further asked to report why they were not so engaged or available to be engaged during most of the six months period.

The current status approach measures the activity status in relation to a short reference period, i.e., the seven days prior to the date of the interview. In this approach a series of inquiries related to engagement in economic activity, seeking and availability to work, reason for not being available to work ...etc., were administered to determine the economic activity status of the population aged ten years and over. These questions are used to divide the population aged ten years and above into the three mutually exclusive categories: employed, unemployed and not in the labour force. If a person experienced a combination of the three statuses in a week, priority rule is applied in favor of employment over the other two statuses and unemployment over inactive. As in the case of usual status approach the employed and the unemployed populations together make up the labour force or the currently active population. The third category, that is, those not in the labour force, represented the population not currently active.

The employed population based on the current activity status approach consist those who were engaged in productive activity at least for four hours during the seven days prior to the date of the interview. Persons who had regular jobs, or business, or holdings to return to but temporarily absent from work (that is, not at work or worked less than four hours) for various reasons were also included as employed persons.

For a person to be considered as absent from work, he/she must have formal attachment to the job. Employees who were fully/partly paid during their absence, those who will return to their work when relieved from their problem, and those who were not absent for a total of two months are considered to have formal job attachment. Self-employed persons are considered to have formal job attachment; if their place of work/ business is not closed down during their absence from work or they are sure it will be re-opened/continue to function if it is ceased to operation. Whereas, the unemployed population, which will be defined in detail in Chapter VI, consists of persons without work but who are willing /available and ready to work if any job was found during the one month period after the date of the interview.

### **4.3 The Economically Active Population**

This section presents the size of the economically active and non-active population as measured based on usual and current status approaches. Economic activity rate, which is also called the participation rate of a population are also presented along with the size of economically active population for the second round. The economic activity rates are good indicator about the economic condition of an area at a given period of time. Comparison of economic activity rates also made between the October 2003 and April 2004 survey results. The rate is computed as the percentage of the economically active population over the total of the active and the inactive population.

#### **4.3.1 Usual Status Approach**

The size of the active and non-active population during both the last six months (usual status approach) and the last seven days (current status approach) along with the corresponding activity rates are presented for the surveyed population of round two in Summary Table 4.1. Accordingly, the size of the

active and the non-active population of the urban parts of the country in the usual status approach showed a comparable figure, i.e., 3,405,056 and 3,293,995, respectively. The data thus resulted in an activity rate of 50.8 percent. Economic activity rate showed a 2.3 percentage point decline as compared to that of October 2003 survey (See Table 4.2). With regard to the difference by sex,

**Summary Table 4.1 Distribution of Urban Population Aged Ten Years and over by Age Group, Sex, Activity Status and Activity Rate in Usual and Current Status Approaches, Country Total: April 2004**

Age Group and Sex	All Persons	Usual Status			Current Status		
		Active Population	Non-active Population	Activity Rate	Active Population	Non-active Population	Activity Rate
All ages							
Total	6,699,051	3,405,056	3,293,995	50.8	3,700,235	2,992,891	55.2
Male	3,151,958	1,866,004	1,285,954	59.2	1,930,106	1,218,172	61.2
Female	3,547,093	1,539,052	2,008,041	43.4	1,770,129	1,774,719	49.9
10 – 14							
Total	1,016,672	76,607	940,065	7.5	87,367	929,003	8.6
Male	470,703	32,960	437,743	7.0	37,411	433,030	7.9
Female	545,969	43,647	502,322	8.0	49,956	495,973	9.1
15 – 19							
Total	1,388,683	381,326	1,007,357	27.5	457,948	930,109	33.0
Male	640,298	166,320	473,978	26.0	188,472	451,647	29.4
Female	748,385	215,006	533,379	28.7	269,476	478,462	36.0
20 – 24							
Total	1,038,333	618,738	419,595	59.6	688,553	349,292	66.3
Male	481,608	309,710	171,898	64.3	324,267	156,853	67.3
Female	556,725	309,028	247,697	55.5	364,286	192,439	65.4
25 – 29							
Total	841,706	639,385	202,321	76.0	687,285	153,322	81.7
Male	386,261	345,398	40,863	89.4	352,210	33,763	91.2
Female	455,445	293,987	161,458	64.5	335,075	119,559	73.6
30 – 34							
Total	522,521	420,770	101,751	80.5	445,444	76,116	85.2
Male	267,311	252,091	15,220	94.3	253,759	12,999	94.9
Female	255,210	168,679	86,531	66.1	191,685	63,117	75.1
35 – 39							
Total	506,412	416,074	90,338	82.2	442,307	63,700	87.3
Male	246,332	236,006	10,326	95.8	239,116	6,810	97.1
Female	260,080	180,068	80,012	69.2	203,191	56,890	78.1
40 – 44							
Total	340,226	270,199	70,027	79.4	284,061	55,315	83.5
Male	172,964	163,369	9,595	94.5	165,352	7,300	95.6
Female	167,262	106,830	60,432	63.9	118,709	48,015	71.0
45 – 49							
Total	274,363	208,761	65,602	76.1	217,426	56,367	79.2
Male	126,346	118,828	7,518	94.0	119,523	6,253	94.6
Female	148,017	89,933	58,084	60.8	97,903	50,114	66.1
50 – 54							
Total	203,200	141,287	61,913	69.5	146,252	56,773	72.0
Male	94,500	85,169	9,331	90.1	87,590	6,736	92.7
Female	108,700	56,118	52,582	51.6	58,662	50,037	54.0
55 – 59							
Total	157,482	85,973	71,509	54.6	91,052	66,389	57.8
Male	73,604	56,320	17,284	76.5	58,892	14,671	80.0
Female	83,878	29,653	54,225	35.4	32,160	51,718	38.3
60 – 64							
Total	136,155	70,025	66,130	51.4	73,589	62,484	54.0
Male	63,862	46,556	17,306	72.9	48,764	15,017	76.4
Female	72,293	23,469	48,824	32.5	24,825	47,467	34.3
65+							
Total	273,298	75,911	197,387	27.8	78,951	194,021	28.9
Male	128,169	53,277	74,892	41.6	54,750	73,093	42.7
Female	145,129	22,634	122,495	15.6	24,201	120,928	16.7

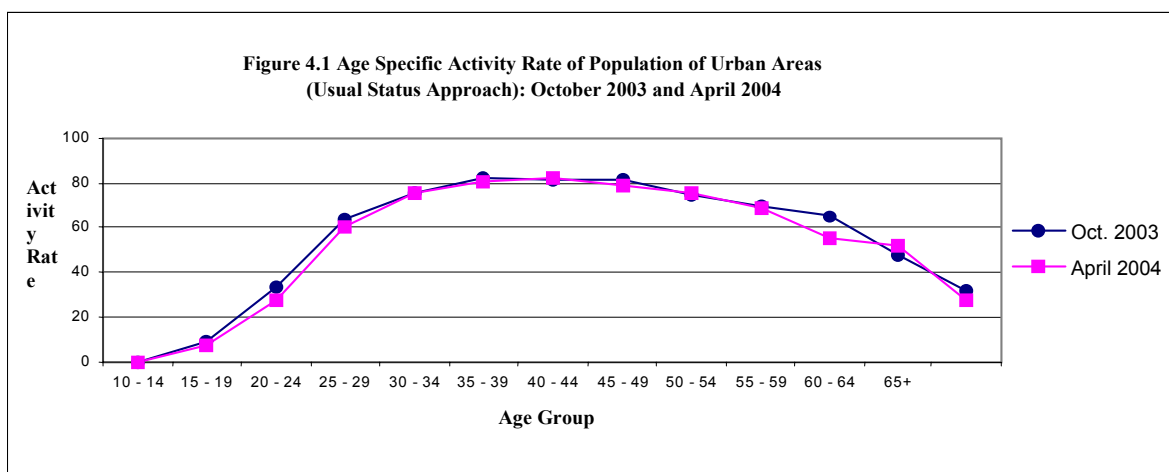
Both rounds of the survey witness male dominance over their female counterparts in terms of activity rate. Regarding the relationship between age and activity rate, the data in round one and two reveals a curvilinear association (see Figure 4.1). The figure exhibits, low and increasing participation of persons at a younger age and high and relatively stable for middle ages (between age group 35-49 years) and then a steady decline at older age groups, The decline in the overall usual economic activity rates was also observed at all age groups, the change being more pronounced at the very young age group (10-14 years) among males. Higher proportion of females tends to exit the labour force earlier than the males. Economic activity rates of the males are higher than that of the females at all ages, except the two young age groups of 10 – 14 and 15 – 19 years. The higher involvement of females in the housekeeping activities, which is considered to be non-productive, may be accountable for the lesser activity rates among them.

**Summary Table 4.2 Economic Activity Rate of Urban Population Aged Ten Years and over by Broad Age Group, Sex, (Usual and Current Status Approaches), Country Total: October 2003 and April 2004**

Broad Age Group and Sex	Usual Status			Current Status		
	Oct. 2003	Apr.2004	Difference	Oct. 2003	Apr.2004	Difference
All ages						
Total	53.1	50.8	2.3	57.9	55.2	2.7
Male	61.6	59.2	2.4	62.9	61.2	1.7
Female	45.6	43.4	2.2	53.6	49.9	3.7
10-14						
Total	9.2	7.5	1.7	10.1	8.6	1.5
Male	10.0	7.0	3.0	10.1	7.9	2.2
Female	8.5	8.0	0.5	10.1	9.1	1.0
15-24						
Total	45.7	41.2	4.5	50.5	47.2	3.3
Male	48.4	42.4	6.0	48.5	45.7	2.8
Female	43.4	40.2	3.2	52.2	48.6	3.6
25-54						
Total	59.3	59.4	-0.1	64.6	63.0	1.6
Male	71.0	71.5	-0.5	73.0	72.5	0.5
Female	48.9	48.4	0.5	57.1	54.3	2.8
55+						
Total	44.1	40.9	3.2	46.2	43.0	3.2
Male	61.6	58.8	2.8	64.4	61.1	3.3
Female	29.4	25.1	4.3	30.8	26.9	3.9

Looking the activity rates of regions in the last six months, the highest was reported for Addis Ababa City Administration (about 57 percent), while Tigray region has shown the least participation rate as compared to other regions (46.6 percent). These two regions had been at the two extremes in the October 2003 survey too. Participation rates observed for longer reference period were found to be lower as compared to the corresponding current status rates for the country and all regions (see Summary Table 4.3).





### 4.3.2. Current status approach

According to this survey, the total labour force of urban areas of the country as measured using current status approach is estimated to be 3,700,235. This gives an activity rate of about 55 percent, which is nearly 3 percentage point less than the activity rate of the first round survey. As in the case of usual status approach, economic participation rate of the males is higher than that of the females. The age pattern of economic participation rates, shown in Figure 4.2, resembles that observed in the usual status approach. In either of the survey rounds the levels of activity rate at all ages are, however, higher in the current than the usual status approach.

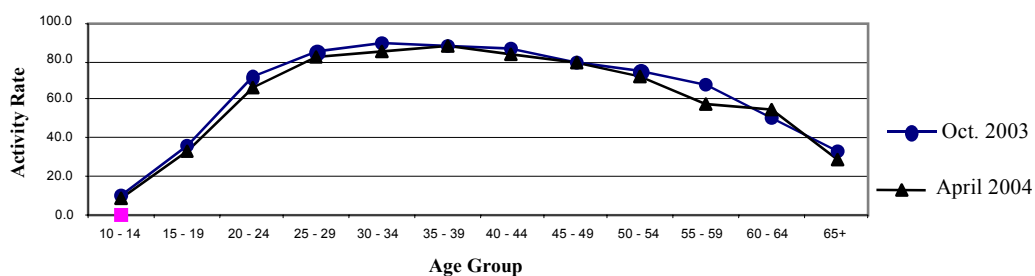
The overall economic participation rate has shown a declining trend from about 58 percent in the first round (October 2003) survey to 55.2 percent in the second round April 2004 survey, which is a 2.8 percentage point decline. The decline was registered at all age group except 60-64 years and it is more pronounced for the age group between 55 – 59 years (see Figure 4.2). Looking at the age categories, young persons in age group (15-24 years) registered the highest percentage difference (4.5 percent point), which is higher by about half than the percentage difference at national urban level (i.e. 2.3 percent). Regarding the percentage difference in activity rate sex wise, for both males and females the difference is more pronounced at young and old ages (see Table 4.2). In this survey the highest activity rate (97.1 percent) among the males is observed at the age group 35 – 39 years, while the peak (78.1 percent) for females was at the age group 35 – 39 years.

In the current status approach, Addis Ababa City Administration and Tigray Region registered the highest and least participation rates (60.5 percent and 46.6 percent, respectively). Dire Dawa Administrative Council, Harari and Afar regions are also among the top in terms of participation rates (see Summary Table 4.3). In fact, Afar region had registered the top participation rate in the October 2003 survey.

**Summary Table 4.3 Economic Activity Rate of Urban Population Aged Ten years and over by Sex, And Region (Current & Usual Status Approaches): October 2003 and April 2004**

Regions	Economic Activity Rate					
	Usual Status			Current Status		
	Total	Male	Female	Total	Male	Female
<b>Country Total</b>						
October 2003	53.1	61.6	45.6	57.9	62.9	53.6
April 2004	50.5	58.9	43.0	55.2	61.2	49.9
<b>Tigray</b>						
October 2003	46.6	49.7	43.9	48.8	51.0	47.1
April 2004	42.3	48.3	37.2	46.6	50.1	43.7
<b>Afar</b>						
October 2003	56.3	65.0	47.6	65.2	69.8	60.8
April 2004	50.3	62.8	38.4	56.9	66.4	47.8
<b>Amhara</b>						
October 2003	51.4	56.4	47.4	54.8	57.4	52.6
April 2004	48.0	51.7	44.9	52.4	54.6	50.6
<b>Oromia</b>						
October 2003	51.4	60.5	42.6	55.9	60.1	51.8
April 2004	47.4	55.5	39.8	53.5	59.3	48.0
<b>Somali</b>						
October 2003	52.1	60.4	43.7	56.8	62.3	51.2
April 2004	50.5	55.3	45.9	53.2	57.4	49.2
<b>Benishangul-Gumuz</b>						
October 2003	46.8	56.6	37.1	52.3	59.3	45.4
April 2004	48.0	56.7	39.5	49.7	57.9	41.7
<b>S.N.N.P.</b>						
October 2003	54.2	61.9	46.8	59.5	63.4	55.7
April 2004	53.1	61.7	45.0	55.5	62.2	49.2
<b>Harari</b>						
October 2003	54.5	63.0	47.5	61.5	66.7	57.3
April 2004	53.5	59.2	48.4	57.4	60.6	54.6
<b>Addis Ababa City Admin.</b>						
October 2003	57.0	68.8	47.1	63.0	71.4	56.0
April 2004	56.0	68.3	45.3	60.5	69.5	52.7
<b>Dire Dawa Adm. Council</b>						
October 2003	54.2	59.9	49.2	62.9	64.7	61.4
April 2004	48.2	55.7	41.6	56.9	59.7	54.4

**Figure 4.2 Age Specific Activity Rate of Population of Urban Areas (Current Status Approach): October 2003 and April 2004**



#### 4.4 Reason for Being Economically Inactive

In this survey, persons are broadly categorized as active and non-active population. As defined in section 4.2 of this chapter, the former comprises employed and unemployed persons, while the latter consists of those neither employed nor unemployed. Persons who were economically inactive (i.e. those who were not engaged and/or not available to be engaged in productive activities) were asked to state the main reason for not participating in productive activities. The size of the usually non-active population aged 10 years and over is presented in Summary Table 4.1 along with the size of the active population. Accordingly, there were 3,293,995 persons, who were economically inactive during the six months period prior to April 2004. Correspondingly, there were 2,992,891 inactive persons in the current status approach.

Accordingly, the majority (63.3 percent) of the inactive persons reported education, i.e., being a student as a reason for their inactivity (see Summary table 4.4). Homemaking contribute significantly (18.2 percent) to inactivity in urban areas. Old age/pension and illness or injury makes up 7.0 percent and 5.7 percent, respectively. Being student is more common reason among the males (82.2 percent) than the females (51.1 percent), while as expected; homemaking pertains to inactive females not to males. Similar to the country figure, in all regions, more than half of the inactive were found to be students followed by homemakers. The contribution of homemakers is relatively higher among inactive persons of Afar and Somali regions.

**Summary Table 4.4 Percentage Distribution of Economically Non-Active Population of Urban Areas by Region and Reason for not being Active, during the Last Six Months (Usual Status Approach - Country Total): April 2004**

Regions	Total Non - active		Reason for not being active							
	No.	%	Home Making	Student	Disabled	Illness	Too young	Prostitutes	Pensioned/Old age	Others
Country Total	3,293,994	100.0	18.2	63.3	0.6	5.7	1.6	0.3	7.0	3.3
<b>Sex</b>										
<i>Male</i>	1,285,955	100.0	1.5	82.2	0.7	4.8	1.8	-	6.4	2.5
<i>Female</i>	2,008,039	100.0	28.9	51.1	0.5	6.3	1.6	0.4	7.3	3.8
<b>Region</b>										
Tigray	272,804	100.0	16.1	59.9	0.8	6.4	3.1	0.7	10.0	3.0
Afar	25,000	100.0	28.6	52.9	-	6.3	1.9	0.3	6.4	3.3
Amhara	591,889	100.0	16.2	64.8	0.7	6.3	2.0	0.3	7.5	2.0
Oromia	983,696	100.0	17.3	66.6	0.5	4.7	1.5	0.3	5.9	3.1
Somali	76,694	100.0	23.5	56.5	1.2	3.1	3.7	0.3	8.5	3.2
Benishangul-Gumuz	20,965	100.0	18.7	68.9	0.4	3.3	2.1	0.5	4.6	1.4
S.N.N.P.	337,513	100.0	16.3	69.8	0.4	4.4	1.2	0.3	4.7	2.8
Harari	29,952	100.0	16.8	59.7	2.3	5.6	0.2	0.1	9.2	5.5
Addis Ababa City Admin.	874,240	100.0	21.1	58.5	0.4	7.0	1.0	0.1	7.5	4.1
Dire Dawa Adm. Council	81,241	100.0	19.7	55.4	0.1	5.1	1.9	0.1	8.5	8.5

*Note: The percentages of Not Stated cases are not shown in the above Summary Table*

#### **4.5 Economic Dependency Ratio Based On the Current Activity Status Approach**

All persons in the working age group do not participate at work. Parts of the population do not work or look for work due to various reasons and they depend on those who already engaged or available to be engaged in productive activity. The ratio of persons in the dependent category to those of economically active groups provides a useful approximation to economic dependency burden. The economic dependency ratio is defined as population not in the labour force to that of population in the labour force (Shryock, 1976).

Summary Table 4.5 presents economic dependency ratio by sex and region for the two rounds. The data in the table shows the economic dependency ratio for both sexes at country level to be 131.7 dependents per 100 active persons. This measure has sharply increased from 120.7 dependents during October 2003. This means for each 100 economically active persons there are about 132 dependents to be supported in terms of food, clothing, health, education and the like. As observed from the table in both rounds, at country level, females are found to be more dependent as compared to males (i.e., 154 against 112).

Summary Table 4.5 further shows a marked difference between regions' economic dependency. The highest economic dependency burden in the first round was found in Somali Region, with 183 dependents per 100 economically active persons, followed by Tigray Region (179 dependents per 100 active persons). These two regions had been at the top with regard to economic dependency ratio during the October 2003 survey.

**Summary Table 4.5 Distribution of Population of Urban Areas Aged Ten Years and Over by Sex  
Economic Dependency Ratio and Region: October 2003 and April 2004**

Region	October 2003	April 2004	October 2003	April 2004	October 2003	April 2004
Country Total	120.7	131.7	106.7	111.6	135.3	153.6
Tigray	167.5	178.5	164.9	162.8	169.9	193.8
Afar	93.6	123.7	78.2	92.0	111.1	166.3
Amhara	131.9	141.8	126.6	138.5	136.6	144.8
Oromia	130.6	142.1	115.6	119.1	147.4	168.8
Somali	158.4	183.0	143.2	175.9	177.1	190.9
Benishangul-Gumuz	152.7	161.8	121.7	120.7	192.9	217.1
S.N.N.P.	123.6	140.1	111.7	111.9	136.5	173.6
Harari	104.2	113.0	92.6	105.9	115.5	120.1
Addis Ababa City Admin.	95.1	103.6	74.7	80.0	116.7	130.5
Dire Dawa Adm. Council	109.5	128.0	111.1	122.1	108.0	133.7

What can easily be looked from the table is that in both rounds and in all regions the pattern of female dependents remains high as compared to males. In addition, high increment of dependency

burden was observed between the first and second round survey in Afar and Somali regions i.e., 30 and 25 dependents per 100 active persons, respectively. Similar to the first round survey result, the majority of regions reported to have greater dependency ratio than the national average.

#### 4.6 Current Activity Rate by Some Background Variable

In this section, the differentials of activity rates in relation to educational attainment and marital status are presented in Summary Table 4.6. According to the survey result, the current activity rates for the illiterate and literate populations were 50.5 percent and 40.2 percent, respectively. The literate showed lower activity rate than the illiterate because of the fact that part of the former group are students who stay in school and cannot be engaged or furnish their labour for production of goods and services. Among the literate category, persons who have educational level of diploma and above recorded the highest activity rate (83.6 percent) followed by those who have certificate (about 80 percent). An activity rate of about 59.7 percent was also registered for those who completed non-formal education. The activity rate for persons who completed General Education (that is in the ex-curriculum grade 12 completed and the new curriculum 10th grade completed) was 46.4 percent. At all education levels, the activity rate of males is greater than females.

Among the females, the divorced took the leading position (60.9 percent) followed by the separated (55.1 percent) and the widowed group (42.4 percent). The relatively higher participation rate for married group among men is not surprising in view of the fact that, the husband is considered as the major bread winner for the family in the country.

**Summary Table 4.6 Distribution of Current Activity Rate by Sex and Some Background Variables, Country Total: April 2004**

Background Variables	Sex		
	Total	Male	Female
<b>Educational Attainment</b>			
Illiterate	50.5	68.2	44.5
Literate	40.2	49.2	29.8
Non Formal	59.7	70.0	43.6
Grades 1-8	32.8	41.7	23.9
General Education Not Completed	37.7	47.2	23.3
General Education completed	46.4	52.7	38.9
Certificate	79.9	82.0	76.8
Diploma/10+3/not completed			

& Degree not completed	30.0	33.7	22.9
Diploma & Above	83.6	88.3	70.7

\* Includes those who completed preparatory grades

## CHAPTER V

### CHARACTERISTICS OF THE CURRENTLY EMPLOYED POPULATION

#### 5.1 Introduction

As defined in the previous chapter, the employed population in the current status approach consists of those who were engaged in productive activity for four hours or more during the seven days prior to the date of the interview. Persons who had regular jobs or business or holdings to return to but were absent from work (i.e., not at work or worked less than four hours) for various reasons were also considered as employed persons. In this chapter, some of the characteristics of the currently employed population will be presented.

#### 5.2 Employment to Population Ratio

Employment to Population Ratio is calculated as a percentage of total employed persons to that of the working age population. According to the data in Summary Table 5.1, the employment to population ratio for urban parts of the country in the second round survey is reported to be 42.7 percent. This means, about 43 percent of the total population of urban areas of the country aged 10 years and over was working during the reference period. The employment to population ratio for male is about 52 percent, which is higher than the ratio for the females by about 17 percentage point. The over all employment to population ratio and the ratio by sex did not show change as compared to that of the first round.

**Summary Table 5.1 Employment to Population Ratio of Urban Areas by Sex and Region: October 2003 and April 2004**

Region	Total Employed Population of April 2004			Employment to Population Ratio					
	Total	Male	Female	Total		Male		Female	
				Oct. 2003	April 2004	Oct. 2003	April 2004	Oct. 2003	April 2004
Country Total	2,854,321	1,625,558	1,228,763	42.7	42.6	51.8	51.6	34.7	34.6
Tigray	172,676	95,500	77,176	34.8	36.3	40.4	43.6	30.0	30.1
Afar	23,748	15,551	8,197	47.2	46.5	58.8	62.0	35.7	31.5
Amhara	493,092	248,534	244,558	42.9	42.6	48.3	47.8	38.6	38.4
Oromia	790,922	466,730	324,192	42.3	42.0	50.3	51.1	34.5	33.4
Somali	68,004	37,545	30,459	46.7	43.7	54.9	49.1	38.3	38.5
Benishangul-Gumuz	17,613	10,617	6,996	44.4	43.7	55.3	53.5	33.6	34.2
S.N.N.P.	344,162	200,226	143,936	47.9	47.7	56.1	57.2	40.2	38.8
Harari	28,975	15,770	13,205	44.7	44.8	54.4	51.6	36.6	38.7
Addis Ababa City Admin.	855,669	499,975	355,694	42.8	42.9	56.3	54.0	31.5	33.3
Dire Dawa Adm. Council	59,460	35,111	24,349	39.1	37.8	47.0	47.9	32.2	29.0

Apparently, in the second round survey the highest employment to population ratio (47.7 percent) was reported for SNNP Region followed by Afar Region 46.5 percent. The lowest employment to population ratio was recorded for Tigray Region (36.3 percent). Similar situation have been observed in the October 2003 surveys.

### **5.3 Occupation and Industry**

Responses of the type of occupation and industry of employed persons were coded in the field and further verified at the head office during data editing and coding stage, using the National Occupation and Industry Classification (NOIC) codebook. The NOIC codes were adopted from the International Standard Classification of Occupation (ISCO-88) and International Standard Industrial Classification (ISIC, 1990), taking into account the prevailing national socio-economic conditions. The NOIC uses a 3-digit coding system corresponding to 3 level classifications in successively finer detail. In the case of occupation, these levels referred as Major group, Sub-major group and Minor group. In the case of industry, the levels are ordered as Major division, Sub-major division and Minor division. In the NOIC, the occupational classification was categorized into 9 major groups, 28 sub-major groups and 113 minor groups. Whereas, the industrial classification contains 13, 60, and 159 major, sub-major and minor divisions, respectively.

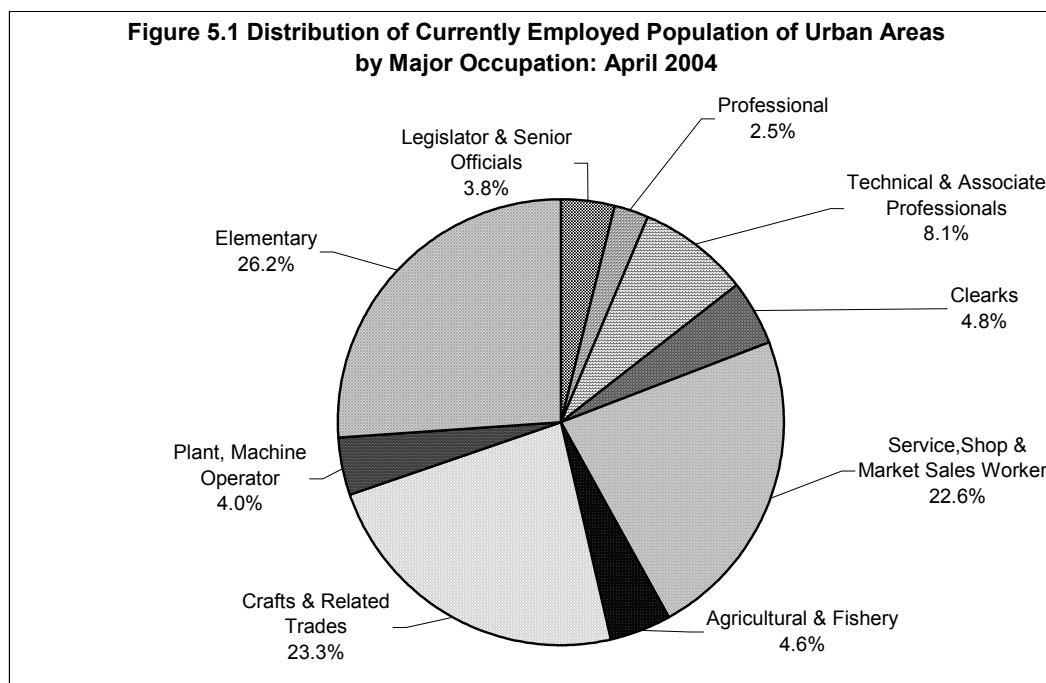
Figure 5.1 presents the distribution of the currently employed population aged 10 years and over by major occupational groups at country urban level. As observed from the figure, nearly three-fourths of urban employed population of the country is engaged in three equally competent occupations, namely: elementary occupation (26.2 percent), craft and related activities (23.3 percent) and service, shop and market sales workers (22.6 percent). Technical and associate professionals reported 8.1 percent of the employed population. While those persons working in professional occupations take the lowest position, contributing 2.5 percent to the employed urban population of the country.

Fewer females are engaged as professionals and legislator as well as in skilled agricultural workers and machine operators. On the other hand, more females are engaged in elementary occupation, service sector, and clerks as compared to that of males. The occupational structure shows almost the same result as compared to the first round survey except with slight increase in the elementary occupation, legislator and clerk activities.

Figures 5.2 shows the major industrial divisions of the urban employed population of the country aged 10 years and over. As expected, most urban employed population are absorbed by wholesale



and retail trade, and manufacturing activities, making up 21.8 percent and 15.6 percent, respectively. Those who



have worked in public administration; private households; agriculture; education, health and social work; hotel and restaurant; other social, cultural and personal and household activities contribute between 7 to 9 percent. Extra-territorial organizations; mining and quarrying; financial intermediation, electricity, gas and water supply and real estate contributed little share in terms of creating employment. More males than females are engaged in most activities, except in wholesale and retail trade, manufacturing, private household, and hotels and restaurants.

#### 5.4 Employment Status

Employment status of a person indicates the level of involvement and degree of decision-making in respective activity. Employment status is classified into employee government, employee government parastatal, employee private organization, employee NGO's, domestic employees, self-employed, unpaid family worker, employer, apprentice, members of cooperatives and others.

The percentage distribution of urban employed population of the country by employment status and sex is presented in Summary Table 5.2. At country urban level, the majority of employed population are self-employed (41.3 percent) followed by those employed by government and government parastatal (21.5 percent) and private organization (16.5 percent). As can be seen from

the table, paid employees altogether constituted about 49.5 percent of the total working population. Paid employees consist of employees of government, government parastatal, private organization, and NGO's and Domestic employee. Unpaid family workers have a substantial share (7.2 percent). The data in Summary Table 5.2 further shows that males are dominant in paid employment. The proportion of private organization employees and employees of NGO among the males is almost two fold of that of the females. Similarly, the proportion of males in government employees is about one and half times higher as compared to their female counterparts. However, more females than males are found in domestic employee and unpaid family workers. The proportion of females in self-employment also exceeds that of males.

**Summary Table 5.2 Distribution of Currently Employed Population of Urban Areas Aged Ten Years and Over by Sex and Employment Status, Country Total: April 2004**

Sex	Total Employed Population	Employment Status											
		Gov't Employee	Gov't Parastatal Employee	Private Organization Employee	NGO's Employee	Domestic Employee	Self Employed	Unpaid Family Workers	Employer	Apparntice	Members of Cooperatives	Others	Not Stated
Total	2,854,322	552,477	59,246	472,057	56,391	270,794	1,178,719	205,917	16,255	8,256	6,673	26,978	559
	100.0	19.4	2.1	16.5	2.0	9.5	41.3	7.2	0.6	0.3	0.2	0.9	0.0
Male	1,625,559	370,427	40,667	335,365	40,269	60,652	647,817	83,808	11,285	5,508	5,151	24,401	209
	100.0	22.8	2.5	20.6	2.5	3.7	39.9	5.2	0.7	0.3	0.3	1.5	0.0
Female	1,228,763	182,050	18,579	136,692	16,122	210,142	530,902	122,109	4,970	2,748	1,522	2,577	350
	100.0	14.8	1.5	11.1	1.3	17.1	43.2	9.9	0.4	0.2	0.1	0.2	0.0

## 5.5 Number of Hours Worked

The measurement of hours of work was dealt with in the resolution concerning statistics of hours of work adopted by the Tenth International Conference on Labour Statistics (ICLS) in 1962. In this survey hours of work was measured in terms of hours actually worked and usual hours of work. Hours of work include not only directly performed activities but also time spent on all related and complementary activities at the work place and outside the work place such as seeking business or waiting for customers, keeping records, maintaining equipment or being available for business.

In the survey all persons who were engaged in productive activities during the seven days prior to the date of the interview were asked to provide the number of hours they actually worked in all of their productive activities in the reference period. The response was recorded for each of the days in a separate notebook so as to reach at the total hours of work during the week, which were filled in the main questionnaire. In recording the number of hours worked, care was taken to exclude hours paid for but not worked, such as paid leave, paid sick leave or paid public holidays from actual hours of work. Meal breaks, time spent on travel to and from work /for those who have specified place of work/ and hours spent on household activities that were not considered as productive are also excluded. For employed persons who were not at work during the seven days prior to the date of the interview, the number of hours of work was recorded as zero. On the other

hand, any time that employed persons have spent in productive activity in places other than work site is considered as working hour.

In countries like Ethiopia, where the majority of the population are illiterate and engaged in the informal sector, collecting accurate data on hours of work is not simple. The reliability of the data may be affected due to memory lapse and lack of knowledge about the concept of time on the part of the respondents. The absence of standard working hour and irregular nature of working days and hours for the majority of activities in the informal sectors also may make it difficult to tell the exact number of hours worked especially when the reference period is longer. Thus, considering the inherent data collection problems of hours of work in developing countries, the results given regarding working hours should only be taken as indicators but not as the true levels and measurements of hours of work.

The percentage distribution of urban employed population by number of hours worked and region during the seven days prior to the date of interview is presented in Summary Table 5.3. At country urban level, it is found that the highest proportion (about 35.0 percent) of the employed population was working for 40-57 hours, followed by those who worked 22-39 hours (23.1 percent). Persons who have job attachment but did not work at all for the last seven days (zero working hours) make up 5.0 percent of the employed population. The majority of urban employed population in most of the regions reported to have worked between 40-57 hours except Benishangul-Gumuz Region.

As can be seen from summary Table 5.4, at country urban level, the mean number of hours worked in the second round survey was reported to be (43 hours). As regards by region, average hours worked by the employed persons in urban areas of Somali Region (56 hours) followed by Dire Dawa Administrative Council (51 hours) are at the top. In the first round survey, the highest mean number of hours worked have been reported for Dire Dawa Administrative Council closely

**Summary Table 5.3 Distribution of Currently Employed Population of Urban Areas Aged Ten Years and Over by Number of Hours Worked and Region: April 2004**

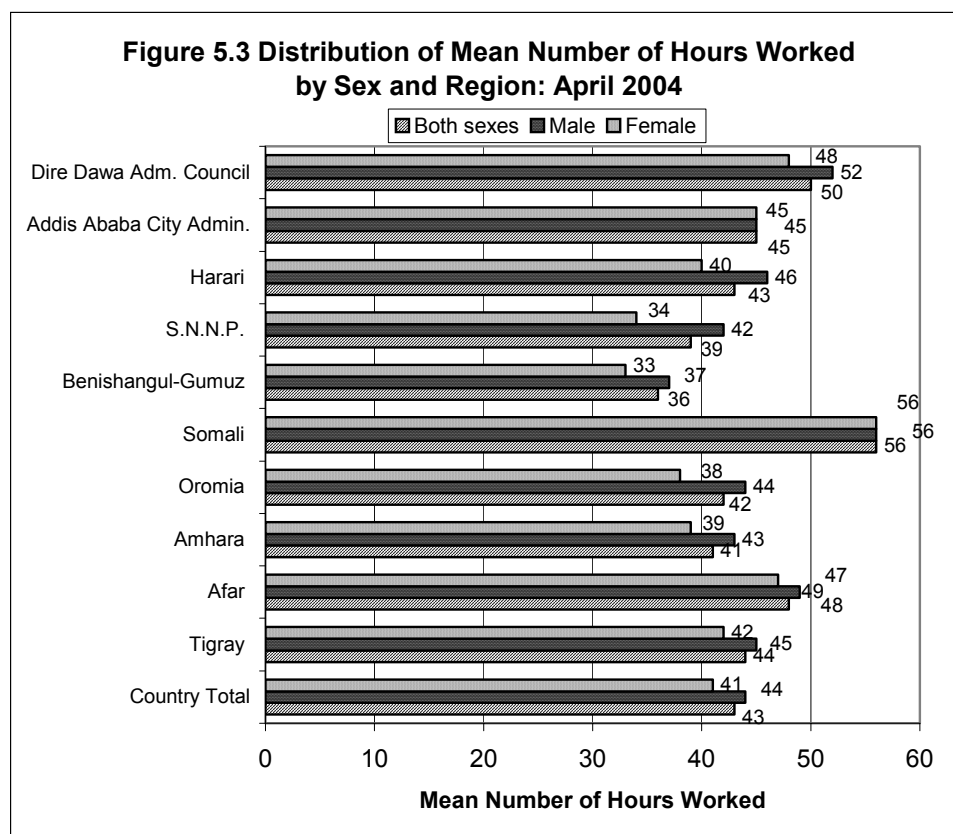
Region	Total Employed Population	Number of Hours of worked						
		0	1-3	4-21	22-39	40-57	58-74	75+
Country Total	2,854,322	139,898	3,404	387,129	658,367	986,622	434,217	244,685
	100	4.9	0.1	13.6	23.1	34.6	15.2	8.6
Tigray	172,676	9,353	114	21,330	38,902	57,722	30,062	15,193
	100	5.4	0.1	12.4	22.5	33.4	17.4	8.8
Afar	23,747	1,226	-	1,392	5,073	9,080	4,662	2,314
	100	5.2	-	5.9	21.4	38.2	19.6	9.7
Amhara	493,094	32,090	1,088	78,265	126,412	141,049	69,790	44,400
	100	6.5	0.2	15.9	25.6	28.6	14.2	9
Oromia	790,923	37,480	1,277	131,285	175,507	272,555	98,647	74,172
	100	4.7	0.2	16.6	22.2	34.5	12.5	9.4
Somali	68004	1468	196	1757	5326	27089	22429	9739
	100	2.2	0.3	2.6	7.8	39.8	33	14.3
Benishangul-Gumuz	17,614	1,440	30	3,155	6,413	4,413	1,577	586
	100	8.2	0.2	17.9	36.4	25.1	9	3.3

S.N.N.P.	344,162	15,940	326	68,897	88,242	107,063	43,104	20,590
	100	4.6	0.1	20	25.6	31.1	12.5	6
Harari	28,975	1,982	56	2,846	6,060	11,140	4,736	2,155
	100	6.8	0.2	9.8	20.9	38.4	16.3	7.4
Addis Ababa City Admin.	855,669	35,247	316	75,241	200,108	329,155	146,609	68,993
	100	4.1	-	8.8	23.4	38.5	17.1	8.1
Dire Dawa Adm. Council	59,461	3,673	-	2,961	6,325	27,356	12,602	6,544
	100	6.2	-	5	10.6	46	21.2	11

followed by Addis Ababa City Administration. The mean number of hours worked for Benishangul-Gumuz Region was found to be the lowest (34 and 35 hours) in both the first and second round survey, respectively. In all regions the mean number of hours worked for male is higher than that of female except for Somali Region and Addis Ababa City Administration,

**Summary Table 5.4 Distribution of Mean Number of Hours Worked by Sex, and Region, October 2003 and April 2004**

Region	Mean Number of Hours Worked					
	Total		Male		Female	
	October 2003	April 2004	October 2003	April 2004	October 2003	April 2004
Country Total	43	43	45	44	41	41
Tigray	42	44	44	45	40	42
Afar	44	48	45	49	43	47
Amhara	44	41	45	43	42	39
Oromia	41	42	44	44	37	38
Somali	43	56	46	56	39	56
Benishangul-Gumuz	34	35	37	37	31	33
S.N.N.P.	37	39	40	42	34	34
Harari	40	43	43	46	37	40
Addis Ababa City Admin.	48	45	49	45	47	45
Dire Dawa Adm. Council	49	51	51	52	48	48



## 5.6 Earnings from Paid Employment

Paid Employment jobs are those jobs where the employees hold explicit (written or oral) or implicit employment contracts, which give them a basic remuneration. Some or all of the tools, capitals equipment, information systems and/or premises used by the employees may be owned by others, and the employees may work under direct supervision of, or according to strict guidelines set by the owner(s) or persons in the owners' employment. Persons in "paid employment" jobs are typically remunerated by wages and salaries, but may be paid by commission from sales, by piece rates, bonuses or in kind payments such as food, housing or clothing. In this survey, earnings for employees refer to gross remuneration and include bonus, overtime, allowances and other benefits that are obtained only from the main job.

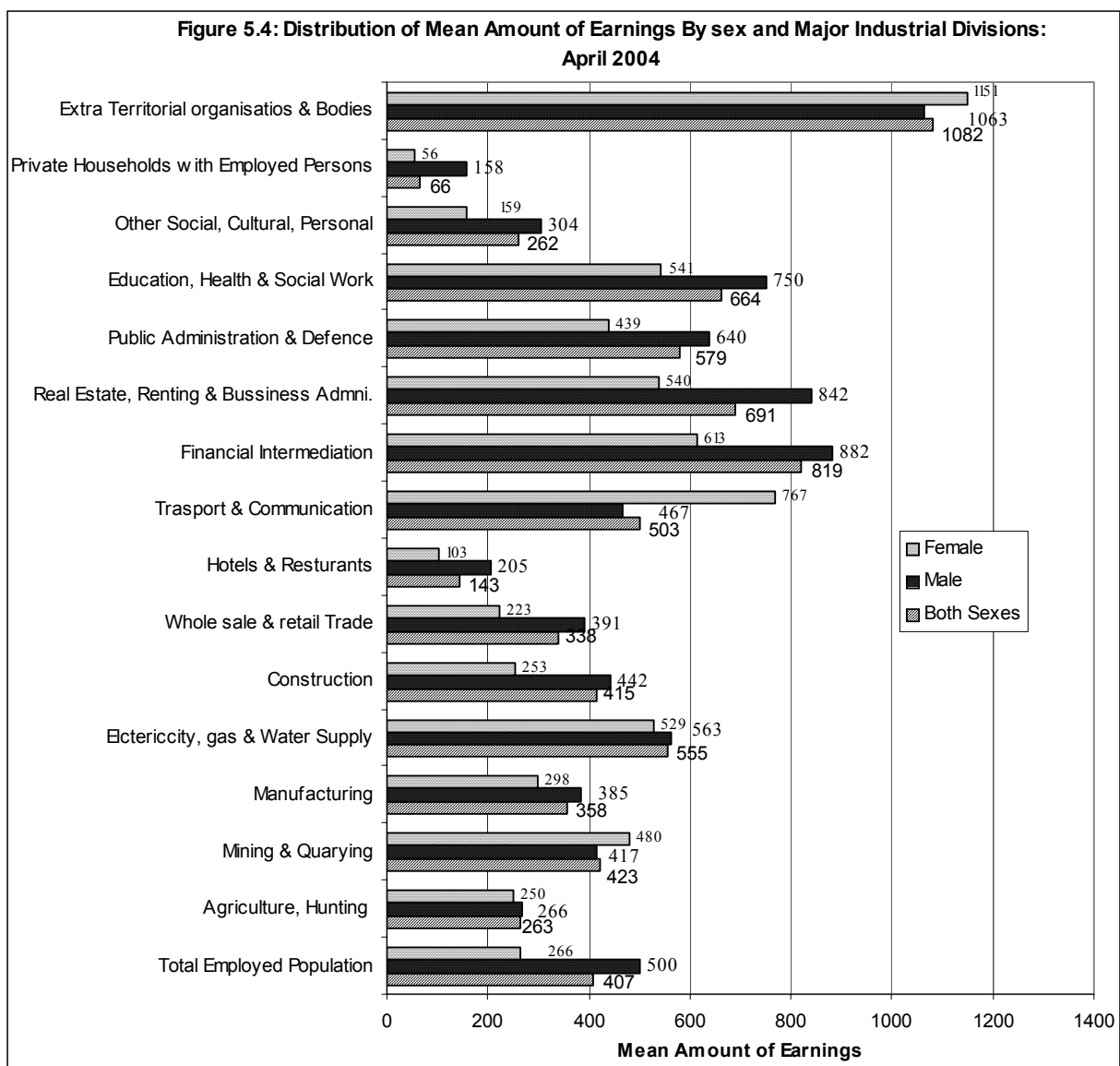


Figure 5.4 shows the distribution of mean amount of earning for paid employees by sex and major industrial divisions at country urban level. The mean amount of earning for the total paid employees of the country is estimated to be 407 Birr per month. Comparison of mean amount of earning among different sectors (industries) has shown that the highest payments is paid to those who were working in extra territorial organization (1,082 Birr) followed by financial intermediation (819 Birr) per month. Employees of private households with employed persons and hotels and restaurants earn the least payment, i.e., with 66 Birr and 143 Birr per month, respectively.

Generally, in most industrial divisions male paid workers earn more than their female counterparts. Among the males, the highest mean amount of earnings were given by extra territorial organization

(1,063 Birr) and followed by financial intermediation industrial divisions (882 Birr). While the highest mean amount of earning for females was paid by extra territorial organization (1151 Birr).

The mean amount of earning has shown slight decrease from 422 Birr in October 2003 to 407 Birr in current survey. The difference in the two surveys for male is some how higher than that of the difference for females. Extra territorial organization play a leading position in terms of earnings (1082 Birr) per month in the second round survey, while those who work in financial intermediation industry in the first round survey earned the highest payment (934 Birr) per month.

## **5.7 Sector of the Economic Activities**

For statistical purposes, the informal sector is considered as a group of production units, which according to the definitions and classification provided in the United Nation System of National Accounts (SNA Rev.4), form part of the household sector as household enterprises or, equivalently, unincorporated enterprises owned by households. The informal sector is defined irrespective of the kind of work place where the productive activities are carried out, the extent of fixed capital used, the duration of the enterprise and its operation as main or secondary activity of the owner.

This survey includes questions to identify the sector of economy in which employed persons are engaged as their main activity. The information collected refers to only part of the employed population. That is, persons engaged in subsistence farming and those who work in private households were exempted from the analysis of the sector of economy.

Employed persons whose employment status was government employee, government parastatal employee, NGOs employee and members of cooperatives were treated as being working in the formal sector. Other employed persons whose employment statuses of main activity were employer, private organization employee, self-employed, and apprentice were asked whether the business/enterprise they were engaged in:

- a) has ten or more workers,
- b) is keeping book of account that show monthly income statement and balance sheet, and
- c) is licensed.

Based on the response to these three conditions, classification on the sector of economy was made as: formal, informal, or 'not-identified'. Employed persons who satisfy at least one of the above conditions were considered as employed in the formal sector. For those who respond "no" for all of the three questions, the activity was taken as informal. Persons who doesn't know the situation about their main activity/business/ enterprise with respect to the above questions, were labeled as "not-identified"

Summary Table 5.5 presents the proportion of urban employed population of the country who are engaged in the informal sector. According to the April 2004 survey result, in urban areas of the country a total of 1,109,697 people were engaged in the informal sector, making up 45.8 percent of the total employment. The proportion of employed population who work in the informal sector was recorded highest for Somali Region (54.5 percent) closely followed by SNNP Region (53.7 percent). The lowest proportion in this respect was registered by Addis Ababa City Administration (33.7 percent).

**Summary Table 5.5 Proportion of Population of Urban Areas Aged Ten Years and over who are Working in the Informal Sector by Sex and Region: October 2003 and April 2004**

Region	Total Working Population of April 2004			Proportion of working population in the Informal Sector					
				Total		Male		Female	
	Total	Male	Female	October 2003	April 2004	October 2003	April 2004	October 2003	April 2004
Country Total	2,422,920	1,449,461	973,459	48.3	45.8	40.0	37.7	60.3	58.0
Tigray	156,839	88,441	68,398	48.0	47.9	33.8	36.6	61.5	62.4
Afar	21,042	14,137	6,905	40.7	39.6	28.9	30.0	62.4	59.4
Amhara	416,395	217,243	199,152	56.3	51.5	44.4	37.7	69.8	66.5
Oromia	687,710	413,045	274,665	52.1	50.7	40.9	41.1	68.0	65.1
Somali	53,858	29,642	24,216	61.4	54.5	46.9	39.3	82.1	73.2
Benishangul-Gumuz	14,446	8,534	5,912	38.2	37.8	28.7	26.2	54.8	54.6
S.N.N.P.	279,130	164,184	114,946	54.7	53.7	46.4	42.5	65.9	69.9
Harari	26,493	14,746	11,747	48.5	49.4	38.0	41.1	62.6	59.9
Addis Ababa City Admin.	713,648	467,250	246,398	37.0	33.7	36.6	33.1	37.9	35.0
Dire Dawa Adm. Council	53,360	32,239	21,121	40.4	48.5	29.4	41.8	56.7	58.6

**Note: Subsistence farmers and domestic workers are not included**

At national level, the proportion of working population in the informal sector showed some decline from 48.3 percent in October 2003 to 45.8 percent in April 2004. Declining trend is also observed in all regions except Harari Region and Dire Dawa administrative Council.



# **CHAPTER VI**

## **SIZE AND CHARACTERISTICS OF THE CURRENTLY UNEMPLOYED POPULATION**

### **6.1 Introduction**

This chapter presents the size and rates of urban unemployment classified into regional levels by age group, sex and rounds. In addition, the pattern of unemployment in relation to educational attainment, work experience and duration of unemployment...etc., will be assessed briefly. Even though, information regarding unemployment was collected using the current and usual measurement approaches the results presented in this chapter refers only to the current activity status approach.

### **6.2 Measurement of Unemployment**

The measurement of unemployment is based on the following three criteria that must be satisfied simultaneously: “without work”, “currently available for work” ‘and “seeking work”’ (ILO, 1983). The standard definition of unemployment is based on the "seeking work" criterion that can be interpreted as activity or efforts undertaken by non-working persons during a specified reference period or prior to it in order to find a job (i.e. paid or self employment). The specific steps may include registration at a public or private employment exchange, application to employers, checking at worksites, farms, factory gates, market or other assembly places, placing or answering newspaper advertisements, seeking assistance of friends or relatives, looking for land, building, machinery or equipment to establish own enterprise, arranging for financial resources, applying for work permits and licenses, etc. However, in situations where the conventional means of seeking work are of limited relevance, where the labour market is largely unorganized or of limited scope, where labour absorption is, at the time inadequate or where the labour force is largely self-employed, the above standard definition of unemployment with its emphasis on seeking work criterion might be restrictive and might not fully capture the prevailing employment situations in many developing countries including Ethiopia.

Hence, the International Standards introduced provisions, which allows for the relaxation of the seeking work criterion in certain situations. The provisions are two types, namely, partial relaxation and complete relaxation. Following the recommendations of the International Standard and reviewing the prevailing national situation, the first and second round 2003/04 Urban Bi-annual Employment and Unemployment Survey introduced a provision to capture the different

forms of unemployment using the above alternative measurements. The treatment of the two options in the survey is described as follows.

Under partial relaxation, the definition of unemployment includes discouraged persons and future start and lay offs in addition to persons satisfying the standard definition. Discouraged job seekers are those who want a job but did not take any active step to search for work because they believe that they cannot find one. Future starts are those persons without work who have made arrangements to take up paid employment or to undertake self-employment activity at a date subsequent to the reference period. Lay offs are a person whose contract of employment or activity has been suspended by the employer for a specified or unspecified period at the end of which the person concerned has a recognized right or recognized expectation to cover employment with the employer (ILO, 1990 as quoted from OECD, 1983).

Under the completely relaxed definition, unemployment includes persons without work and those who are available for work, including those who were or were not seeking work. That is, the seeking work criterion is completely relaxed and unemployment is based on the “without work” and “availability” criterion only. The availability in this situation is tested by asking the willingness to take up work for wage or salary in locally prevailing terms, or readiness to undertake self-employment activity; given the necessary resources and facilities. It should be noted that fulltime students are considered as available only if they are ready to withdraw from their studies in order to accept a job.

This survey collected unemployment data in the standard, partially relaxed and completely relaxed options of measurements. After thorough evaluation and assessment of the results obtained using the three alternative and complementary measures; the rates obtained using the completely relaxed definition was found most plausible and hence selected for reporting.

In this survey, those persons aged ten years and over who did not work at least four hours or did not have job to return to, were asked to respond whether they were available or willing to work if job was found during the coming one month. Those who respond “Yes” answer to this question were further tested whether they were ready to take a job under prevailing conditions.

### **6.3 Levels and Distribution of Unemployment**

As described in this Chapter, data on the current unemployment was collected by asking a series of filtering questions to all unemployed persons aged ten years and over. The result obtained from

the current status approach refers to the level of unemployment during short time interval of the seven days prior to the date of interview.

The unemployment rate, which is computed as the proportion of the unemployed persons out of the economically active population, can be used to measure the level of unemployed population of an area. This rate can also be used to make differential studies between sub groups of the population. Summary Table 6.1 presents the size of the currently unemployed population of April 2004 (Round 2) and current unemployment rate for both survey rounds by sex, age group and educational level.

**Summary Table 6.1 Current Unemployment Rate of Urban Population Aged Ten Years and Over by Sex, Age Group and Educational Level, Country Total: October 2003 and April 2004**

Age Group and Educational level	Total Unemployed Population of April 2004			Unemployment Rate					
	Total	Male	Female	Total		Male		Female	
				October 2003	April 2004	October 2003	April 2004	October 2003	April 2004
All Ages	845,913	304,547	541,366	26.2	22.9	17.6	15.8	35.2	30.6
10 – 14	10,338	5,297	5,041	23.2	11.8	21.0	14.2	25.1	10.1
15 – 19	151,959	54,266	97,693	37.3	33.2	31.9	28.8	41.3	36.3
20 – 24	249,253	90,554	158,699	39.9	36.2	30.6	27.9	47.9	43.6
25 – 29	175,704	56,824	118,880	29.0	25.6	18.0	16.1	39.2	35.5
30 – 34	76,394	21,010	55,384	19.4	17.2	9.9	8.3	31.7	28.9
35 – 39	66,796	19,365	47,431	15.9	15.1	7.2	8.1	25.7	23.3
40 – 44	33,987	10,464	23,523	14.8	12.0	7.6	6.3	23.3	19.8
45 – 49	27,794	9,799	17,995	15.8	12.8	9.0	8.2	25.6	18.4
50 – 54	17,859	11,304	6,555	15.2	12.2	10.5	12.9	21.6	11.2
55 – 59	15,322	9,722	5,600	19.8	16.8	20.4	16.5	18.9	17.4
60 – 64	12,001	9,046	2,955	19.5	16.3	20.6	18.6	17.7	11.9
65+	8,506	6,896	1,610	13.1	10.8	13.4	12.6	12.6	6.7
<b>Level of Education</b>									
Illiterate	158,519	34,349	124,170	20.2	16.7	12.4	11.2	23.3	19.2
Literate	687,393	270,197	417,196	28.1	25.0	18.4	16.6	41.5	37.1
Non Formal	8,044	3,128	4,916	20.5	9.0	15.8	5.1	28.5	17.4
Grades 1-8	298,624	109,581	189,043	26.6	23.1	16.4	14.8	39.7	34.3
General Education not Completed	76,110	32,300	43,810	33.8	31.2	22.4	20.3	51.8	51.4
General Education Completed *	244,835	96,775	148,060	38.1	33.9	27.2	24.7	51.6	44.8
Certificate	17,193	8,078	9,115	13.4	12.4	9.5	9.7	18.2	16.4
Diploma not completed & Degree not complete	16,368	7,619	8,749	30.4	34.1	22.4	24.7	44.2	51.3
Diploma & Above	25,231	12,543	12,688	9.8	12.0	6.9	8.1	19.3	23.2

\*Include those who completed preparatory grade

The survey result reveals that in April 2004 there were 845,913 unemployed persons, out of whom males were 304,547 and females were 541,366. This means that the rate of unemployment in the current status approach for urban areas of the country is about 23 percent. Similarly, unemployment

rate in the second round survey among the male and female are 15.8 percent and 30.6 percent, respectively. This indicates unemployment is more of a problem for females than males.

Unemployment by age group is found to be higher for the younger groups except age group 10-14 years than the older ones. Little higher than one thirds of the youth population aged 15-24 years and one-fourth of those aged 25-29 years were unemployed during the reference period. The rates then show general declining pattern and remains below 20 percent starting from the age group 30-34 years. The rates for females are higher than that of males at all age groups except at early age group (10-14) and at old age groups (50-54 years and over). One can clearly observe that there is reduction of unemployment rate among all age group in the second round as compared to the first round survey.

According to the data in the Summary Table 6.1, the overall unemployment rate for literate persons is higher than that of illiterate (25 percent against 16.7 percent). Among the literate group, the rate of unemployment was relatively higher among those who did not complete diploma & Degree (34.1 percent) closely followed by those who completed general education (33.9 percent). The above phenomenon is more pronounced among the females than males. The incidence of unemployment was relatively lower for those with non-formal education (9.0 percent) and holders of Diploma and above (12.0 percent).

Summary Table 6.2 shows the size of economically active and unemployed population of regions in the second round survey. Furthermore, the table presents the unemployment rate of the regions for the two rounds. The result depicts that unemployment rate is highest in urban areas of Dire Dawa Administrative Council (33.5 percent) followed by Addis Ababa City Administration (29.1 percent). Unemployment rate of 22.1 percent was registered in urban areas of Tigray and Harari Region. Also, in urban areas of Oromia Region unemployment rate is found to be 21.5 percent. While in the rest of urban areas of regions unemployment rate ranged from 12.1 percent in Benishangul-Gumuz Region to 18.7 percent in Amhara Region.

In 1994 Population and Housing Census, the urban unemployment rate was 22 percent and then increased to 26.4 percent in 1999 National Labour force survey (CSA, 1997, 2000). In the October 2003 (Round 1) Urban Bi-annual Employment and Unemployment survey, the rate was registered to be 26.2 percent. As it can be seen in Table 6.2 unemployment appears to decline during the last six months by about 3.3 percentage point.

**Summary Table 6.2 Current Unemployment rate of Urban Population Aged Ten Years and Over by Sex and Region : October 2003 and April 2004**

Region	Total Unemployed Population in Oct. 2003			Unemployment Rates						
				Total			Male		Female	
	Total	Male	Female	Oct. 2003	April 2004	Diffe- rence	Oct. 2003	April 2004	Oct. 2003	April 2004
Country Total	845913	304547	541366	26.2	22.9	-3.3	17.6	15.8	35.2	30.6
Tigray	48889	14126	34763	28.8	22.1	6.7	20.6	12.9	36.2	31.1
Afar	5343	1102	4241	27.6	18.4	9.2	15.7	6.6	41.2	34.1
Amhara	113055	35309	77746	21.6	18.7	2.9	16.0	12.4	26.6	24.1
Oromia	216305	74552	141753	24.3	21.5	2.8	16.3	13.8	33.3	30.4
Somali	14838	6407	8431	17.8	17.9	-0.1	11.8	14.6	25.1	21.7
Benishangul- Gumuz	2421	873	1548	15.1	12.1	3	6.6	7.6	26.0	18.1
S.N.N.P.	56376	17623	38753	19.4	14.1	5.3	11.6	8.1	27.7	21.2
Harari	8218	2774	5444	27.4	22.1	5.3	18.4	15.0	36.1	29.2
Addis Ababa City Admin.	350572	143115	207457	32.1	29.1	3	21.2	22.3	43.7	36.8
Dire Dawa Adm. Council	29898	8666	21232	38	33.5	4.5	27.4	19.8	47.6	46.6

Comparison of unemployment rate between regions in survey Round 1 and Round 2 indicates lower rate in the second round for all regions with the exception of the Somali Region. The decline in the rate is highly pronounced in Afar and Tigray Regions. Decline in unemployment could occur either due to creation of more employment or shift from unemployment to inactive status.

#### **6.4 Problems of Establishing Own Business**

The unemployed persons were asked about whether they have tried to establish their own business and the type of problems they faced. As observed from Summary Table 6.3, urban unemployed population who wanted to establish their own business reported that shortage of finance is the main problem they have faced, accounting for about 54.3 percent. The next problem to establish own business is lack of working place (land), which constituted about 19.5 percent.

**Summary Table 6.3 Percentage Distribution of Currently Unemployed Population of Urban Areas Aged Ten Years and over Who wants to Establish Own Business by Sex and Type of problems Faced, Country Total: October 2003 and April 2004**

Sex	All Persons		Type of Problems Faced										
			I have no problem	Shortage of Finance	Lack of Place/land	Problem of Working place/land	Lack of Finance & Training	Lack of Working Place & Finance	Lack/ Absence of License	Shortage Absence of Equipment	Do not Know	Others	Not Stated
	Number	%											
<b>Total</b>													
October 2003	1010372	100	6.4	61.9	2.5	2.7	4.7	13.8	0.3	0.2	2.1	2.3	3.1
April 2004	845913	100	8.1	54.3	2.6	2.9	4.0	19.5	0.4	0.2	2.5	2.0	3.4
<b>Male</b>													
October 2003	345900	100	5.1	61.2	2.4	1.7	6.0	14.4	0.4	0.4	2.0	3.2	3.2
April 2004	304547	100	7.1	53.8	3.4	2.5	5.1	20.1	0.7	0.6	2.3	1.4	3.2
<b>Female</b>													
October 2003	664472	100	7.0	62.2	2.5	3.2	4.2	13.5	0.3	0.1	2.1	1.8	3.0
April 2004	541366	100	8.7	54.6	2.3	3.1	3.4	19.2	0.2	0.1	2.6	2.4	3.6

The two consecutive survey rounds seem to indicate similarity of the degree and type of the problem of starting own business. Shortage of finance was reported in both the first (61.9 percent) and second round survey (54.3 percent) as major problem. On the second place lack of working place and land was mentioned with 13.8 percent in the first round survey and 19.5 percent in the second round. No significant differences of the degree and type of problems have been noticed between male and female in both rounds of the survey.

## 6.5 Previous work experience and Duration of Unemployment

Summary Table 6.4 presents the distribution of urban unemployed population by sex, previous work experience and duration of unemployment. As it has been indicated in the table, out of 845,914 unemployed persons in urban areas of the country, 385,864 persons i.e., about 45.6 percent never had work experience prior to the survey date. The data also revealed that more than half of unemployed females had no previous work experience. On the other hand, more than three-fifths of unemployed male had previous work experience.

In the table mentioned below, one can easily see that the majority i.e. more than three-fifths of the unemployed persons have been without work for less than 24 months during prior to the survey period. The table also shows that 10.5 percent and 9.1 percent of unemployed urban population remained job less for 96 or more months and 25-36 months, respectively.

**Summary Table 6.4 Distribution of Currently Unemployed Population of Urban Areas Aged Ten Years and Over by Sex, Work Experience and Duration of Unemployment, Country Total: April 2004**

Previous Work experience and Duration of unemployment	Both Sexes		Male		Female	
	No	%	No	%	No	%
Previous Work experience						
Total Unemployed	845,914	100	304,548	100	541,366	100
Unemployed with Work Experience	454,164	53.7	191,588	62.9	262,576	48.5
Unemployed without Work Experience	385,864	45.6	110,567	36.3	275,297	50.9
Not Stated	5,886	0.7	2,393	0.8	3,493	0.6
Duration Of Unemployment						
< 1 month	128,236	15.2	55,965	18.4	72,271	13.3
1-6 month	120,663	14.3	49,462	16.2	71,201	13.2
7-12 month	176,533	20.9	65,813	21.6	110,720	20.5
13-24 month	136,175	16.1	46,577	15.3	89,598	16.6
25-36 month	77,243	9.1	28,161	9.2	49,082	9.1
37-48 month	40,117	4.7	13,037	4.3	27,080	5.0
49-60 month	30,080	3.6	8,136	2.7	21,944	4.1
61-72 month	16,865	2.0	6,199	2.0	10,666	2.0
73-84 month	13,300	1.6	3,316	1.1	9,984	1.8
85-95 month	3,529	0.4	430	0.1	3,099	0.6
96 or more months	88,749	10.5	21,509	7.1	67,240	12.4

## ANNEX III

### ESTIMATION PROCEDURES OF TOTAL, RATIO AND SAMPLING ERRORS

The following formulas were used to estimate the required variables by reporting levels.

- Estimate of domain total  $\hat{Y}_h$  for the two-stage sample design is given by:**

$$\hat{Y}_h = \sum_{i=1}^{n_h} \frac{M_h H_{hi}}{n_h M_{hi} h_{hi}} \sum_{j=1}^{h_{hi}} Y_{hij} = \sum_{i=1}^{n_h} \sum_{j=1}^{h_{hi}} W_{hi} y_{hij} \text{-----} \quad (1)$$

Where,

$$W_{hi} = \frac{M_h H_{hi}}{n_h M_{hi} h_{hi}} \text{ is the basic sampling weight}$$

- The estimate of domain total  $\hat{Y}_h$  for the three-stage sample design is given by:**

$$\hat{Y}_h = \sum_{i=1}^{n_h} \frac{M_h}{n_h n_{hi}} \sum_{j=1}^{n_{hi}} \frac{H_{hij}}{M_{hij} h_{hij}} \sum_{k=1}^{h_{hij}} Y_{hijk} \text{-----} \quad (2)$$

$$= \sum_{i=1}^{n_h} \sum_{j=1}^{n_{hi}} \sum_{k=1}^{h_{hij}} W_{hij} Y_{hijk}$$

Where,

$$W_{hij} = \frac{M_h H_{ij}}{n_h n_{hi} M_{hij} h_{hij}} \text{ is the basic sampling weight}$$

The following notations were used in the formula:

$M_h$  = Total number of households in stratum h obtained from the sampling frame.

$M_{hi}$  = Total number of households, in EA/ PSU i for the two-stage sample design or in urban center/PSU i for the three-stage sample design, stratum h obtained from the sampling frame.

$n_h$  = Number of successfully covered sample EA's for the two stage sample design or urban centers for the three stage sample design in stratum h.

$H_{hi}$  = Total number of households identified during the survey listing in EA/PSU i, stratum h (for the two-stage sample design).



$h_{hi}$  = Total number of households successfully covered in EA/PSU i, stratum h (for the two-stage sample design).

$M_{hij}$  = Total number of households in EA/SSU j, urban center/PSU i and stratum h obtained from the sampling frame (for the three-stage sample design).

$n_{hi}$  = Number of sample EA's successfully covered in urban center/PSU i stratum h (for the three-stage sample design).

$H_{hij}$  = Total number of households identified during the survey listing in EA/SSU j, urban center/PSU i and stratum h (for the three-stage sample design)

$h_{hij}$  = Number of sample households successfully covered in EA/SSU j, urban center/PSU i and stratum h (for the three-stage sample design).

$Y_{hij}$  = The observed value of a characteristic y for household j in EA/PSU i and stratum h (for the two-stage sample design).

$Y_{hijk}$  = The observed value of a characteristic y for household k in EA/SSUj, urban center/PSU i and stratum h (For the three-stage sample design).

Note: Estimate of total at country level,  $\hat{Y}$ , is obtained by summing up stratum/domain total estimates.

$$\hat{Y} = \sum_{h=1} \hat{Y}_h$$

### 3. Sampling variance of the estimates:

Sampling variance of estimate of stratum total are given by the following formulas:

The variance of domain or reporting total estimate is:

$$V(\hat{y}_h) = \frac{n_h}{n_h - 1} \left[ \sum_{i=1}^{n_h} \hat{Y}_{hi}^2 - \frac{\hat{Y}_h^2}{n_h} \right] \text{-----} \quad (3)$$

in which  $\hat{Y}_{hi} = W_{hi} \sum_{j=1}^{h_{hi}} Y_{hij}$  for the two-stage sample design

and  $\hat{Y}_{hi} = \sum_{j=1}^{n_{hi}} W_{hij} \sum_{k=1}^{h_{hij}} y_{hijk}$  for the three-stage sample design

Since the strata are independent,

$$V(\hat{Y}) = \sum_h V(\hat{Y}_h) \text{-----} \quad (4)$$

$$SE(\hat{Y}_h) = \sqrt{Var(\hat{Y}_h)} \text{-----} \quad (5)$$

#### 4. Coefficient of variation (CV) and confidence interval (CI)

The following formulas were used to calculate CV and CI of the domain (reporting level) total.

The coefficient of variation (CV) of domain total in percentage is:

$$CV(\hat{Y}_h) = \frac{\sqrt{Var(\hat{Y}_h)}}{\hat{Y}_h} \times 100 \text{-----} \quad (6)$$

and

Ninety five confidence interval (CI) of domain total:

$$\hat{Y}_h \pm 1.96 \times SE(\hat{Y}_h) \text{-----} \quad (7)$$

#### 5. Ratio estimates:

$$\hat{R}_h = \frac{\hat{Y}_h}{\hat{X}_h} \text{ and } \hat{R} = \frac{\hat{Y}}{\hat{X}} \text{-----} \quad (8)$$

Where the numerator and the denominator are estimates of domain totals of characteristic y and x, respectively.

$$Var(\hat{R}_h) = \frac{1}{\hat{X}_h^2} [Var(\hat{Y}_h) + \hat{R}_h^2 Var(\hat{X}_h) - 2\hat{R}_h Cov(\hat{Y}_h, \hat{X}_h)]$$

In which

$$Cov(\hat{Y}_h, \hat{X}_h) = \frac{n_h}{n_h - 1} \left[ \sum_{i=1}^{n_h} \hat{Y}_{hi} \hat{X}_{hi} - \frac{\hat{Y}_h \hat{X}_h}{n_h} \right]$$

Estimates of standard error, coefficient of variation and confidence interval for the ratio estimate can be calculated by adopting formulas 5, 6 and 7.