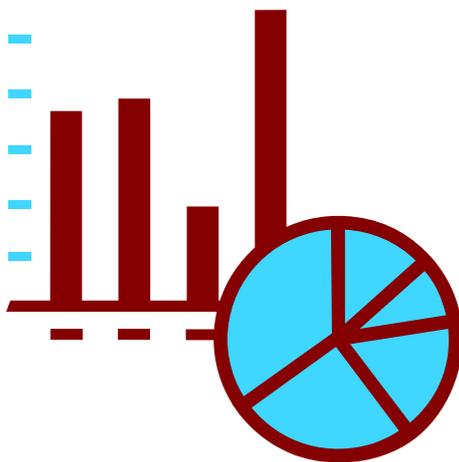


Central Statistical Agency

Quarterly Manufacturing Industry Business Survey, Third Quarter 1999 E.F.Y



Addis Ababa

JULY 2007

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I. Introduction

Business Surveys are carried out to obtain information for use in monitoring the current business situation and forecasting short-term developments. Information from these surveys has proved of particular value in forecasting turning points in the business cycle. The range of information covered by business tendency surveys goes beyond variables that can easily be captured in conventional quantitative statistics. Qualitative information may be collected for variables that are difficult or impossible to measure by conventional methods. Examples include: capacity utilization, production bottlenecks, plans and expectations for the immediate future and managers' views on overall economic situation.

Hence the Central Statistics Agency (CSA) as the responsible body for statistical information on almost all socio-economic aspects in the country has a significant role to play in meeting the need for short term statistics, mainly current business survey, which is considered as bridging the gap between information demanded by users and information, held by respondents. *A current business survey can be defined as a business cycle analysis of interrelated developments. This kind of survey tries to capture judgments on past, current and future economic developments.*

Thus to meet the demand of short term statistics the CSA has for the tenth time, conducted quarterly Manufacturing Industry Business Survey on the Large and Medium Scale Manufacturing Industries.

This Short Term Statistics (Manufacturing Industry Business Survey) tries to answer the following type of questions:-

- In which phase of the economic cycle the manufacturing industry is at present?
- What will be the probable development in the near future?
- Is the manufacturing industry in the continuation of a movement already started (upward or downward) or is it at a turning or reversal point?

Moreover short term statistics are also used to produce monthly or quarterly indicators, and provide statistical information that is necessary to improve the competitiveness and performance of the business community in the country.

II. Objectives of the Survey

The main objectives of the quarterly medium and large scale manufacturing business survey are to:

- compile and produce up-to-date, reliable and comparable information on the activity, competitiveness and performance of the industry,
- assist in economic analysis and forecast the future trend of the sector,
- be used in compiling the various components of quarterly national accounts, which in turn are needed in the calculation of GDP, and
- show the cyclical movement of the sector in terms of major indicators.

Therefore conducting current business survey on dynamic economic sectors like that of the manufacturing sector is an accepted way of availing basic business information to depict the general trend on interrelated developments of the economy. Moreover, it could be a base to examine the nature of the sequence of evolution and future expectations in order to ensure that adequate decisions can be taken today.

Structure of this report

Section II deals with the objectives of the survey. Section III provides an overview of the survey methodology. Section IV presents the background on training of field staff for data collection. Section V discusses concepts and definitions applied in the survey. Section VI describes the steps covered in data entry, editing, cleaning and tabulation of the results. Section VII explores the findings of the survey. Finally Annex I, which describes the estimation procedure and Annex II Coefficient of Variation (CV) for selected variables, are attached at the end of this report.

Dear reader, as we are striving to improve our work and try to satisfy the needs of our users, we would like to hear from you. If you have any comments or suggestions to make, please feel free to do so. Our address is:-

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III. SURVEY METHODOLOGY

3.1 Scope and Coverage

The Quarterly Large and Medium Scale Manufacturing Business Sample Survey was conducted by CSA, covering only those establishments, which engaged 10 persons and above and are using power driven machines to produce their goods. Both public and private holding industries of all regions were covered by this quarterly sample survey.

3.2 Sampling Frame

The list of basic values of each and every establishment was obtained from the 2002/3 Large and Medium Scale Manufacturing Industries Census and was used as a frame in order to conduct this quarterly Large and Medium Scale Manufacturing Business Sample Survey.

3.3 Sample Design

A single stage stratified sample design has been implemented in order to select sample establishments. Each establishment was first grouped into a four-digit level International Standard Industrial Classification (ISIC). Each four-digit ISIC was then considered to be a stratum. However, in doing so, the total number of the four-digit level ISICs was found to be too many and the contribution of some of the ISICs to the total basic value was also very low. Hence, a cut-off strategy was adopted for the ISICs that have a contribution of less than 0.6 percent to the overall basic value. Therefore, a total of 33 out of 47 ISICs were finally taken into consideration. Fifteen domains of estimates (reporting levels) are then constructed from the 33 ISICs and major findings of the survey are reported for them. Taking into account resource constraints and the production structure of the manufacturing sector, 130 sample establishments were initially decided to be sufficient to conduct the survey. The spread of basic values across the four-digit ISICs as observed from the frame was, however, uneven. Therefore, a power allocation (with a power of $\frac{1}{2}$), have been employed to distribute the 130 sample establishments among the 33 ISICs since it increases the precision of small strata by slightly decreasing the precision of large strata.

A combination of systematic sampling and probability proportional to size (PPS) selection, size being basic value obtained from the frame, was used in order to select sample establishments from each of the 33 ISIC.

As regards to the ultimate coverage, the survey was not carried out in 9 establishments out of the sampled 130 establishments; 6 establishments due to non-response and 3 establishment due to closure after the end of the first quarter. As a result, the survey succeeded to cover 121 (93.1percent) establishments throughout the entire regions.

Estimation procedure of totals, ratios, sampling error and the measurement of precision of estimates (CV) are given in Appendix I and II respectively.

IV. Training of Field Staff and Data Collection

The training was conducted in one phase using staff members of the Industry Statistics Team (professionals and statistical technicians) and experienced branch statistical office staff in establishment surveys. Enumerator's manual was prepared for the survey to introduce the participants with the detailed explanations of the basic concepts and how to handle each and every part of the questionnaire.

Since the coverage of the sample is based on industrial groups rather than area coverage, only 15 out of the 25 branch offices of CSA have participated in this survey. 35 field staff participated in the training, of which 15 were assigned for Addis Ababa, while the remaining were drawn from other branch statistical offices. The refreshment training took two days and another ten working days were needed for data collection.

V. Concepts and Definitions

Manufacturing: - is defined here according to International Standard Industrial Classification (ISIC Rev. 3) as “the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or the worker's home, and whether the products are

sold at wholesale or retail. The assembly of the component parts of manufactured products is also considered as manufacturing activities.”

An Establishment: - is defined as the whole of the premises under the same ownership or management at a particular address. (e.g. a bakery, sawmill, etc.)

Permanent Workers: - these are employees, (based on the agreement between the workers and employers) engaged to work in the factory for unlimited period of time. These workers are usually found regularly on the payroll of the establishment. Basically, this classification consists of production, administrative and technical employees. According to this definition, unpaid family workers, active partners and working proprietors are excluded.

Seasonal and Temporary Workers: - these include workers who are employed for a whole or part of the year with the agreement that they work for a limited period of time. These workers are not regularly on the payroll of the establishment.

Revenue from Sales: - represents the total sales value of all products and by-products during the reference period valued at market price.

Raw Materials: - include all raw and auxiliary materials, parts and containers which are consumed during the reference period. The value of local raw materials is the value of locally produced raw materials and is the cost at the factory, which includes the purchase price, transport charges, taxes and other incidental costs. The value of imported raw materials is the value of raw materials produced in other countries and obtained directly or from local source and is the cost at the factory which includes the purchase price, transport charges, taxes and other incidental costs.

New Capital Expenditure: - is the cost of new or used capital equipment bought during the reference period by the existing establishments.

Survey Period: Based on the Ethiopian Fiscal Year, Quarters are defined as follows:-

- *First Quarter* – July 8 – October 10
- *Second Quarter* – October 11 – January 8
- *Third Quarter* – January 9 – April 8
- *Fourth Quarter* - April 9 – July 7

VI. Data Processing

Editing, Coding and Verification

A number of quality control steps were taken to ensure the quality of data of the survey. Editing instruction manuals were given to personnel involved in the editing process. Using this manual and a briefing which was given on the subject, editing and coding were carried out on the data collected. Finally, the edited and coded questionnaires were checked and verified by another five professionals.

Data Entry, Cleaning and Tabulation

The data were entered and verified on personal computers using CSPro software. Four CSA data entry staff participated in this purpose for one day, with close supervision of one professional programmer. Then, the data entered were cleaned using a personal computer in combination with manual editing for some serious errors. Finally, the tabulation of the results was processed using the same software by one senior programmer from the Data Processing Department with technical assistance from the staff of Industry Statistics Team.

VII. Summary of Survey Findings

Employment

Survey results shown in Table 1 below indicate that, in the third quarter of 1999 E.F.Y., a total of 90,460 workers were engaged in the manufacturing industry, of which 79,192 (87.5 percent) of the workers were permanent while the remaining 11268 (12.5 percent) persons were seasonal or temporary employees. Among the industrial groups, manufacture of food products were found to be the major employers like in the previous quarters, where by, they employed around 21.8 percent of the total work force in the sector followed by textile industries which took in around 13.3 percent. On the other hand, tobacco manufacturing establishments were at the least in terms of offering employment opportunities as they offered a job opportunity only for 775 persons, which accounts to 0.9 percent of the total employment in the sector.

**Table 1: Number of Persons Engaged by Major Industrial Groups,
Third Quarter 1999 E.F.Y. (2006/07)**

Major Industrial Groups	Persons engaged			
	Number of establishments	Permanent	Seasonal	Total
Manufacture of food products.....	169	17,343	2396	19,739
Manufacture of beverage.....	31	9,680	318	9,998
Manufacture of tobacco products...	1	775	-	775
Manufacture of textiles	15	11,033	1042	12,075
Manufacture of wearing apparel, except fur apparel.....	104	4,966	1021	5,987
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags.....	69	6,679	401	7,080
Manufacture of wood and wood products and cork, except furniture.....	11	1,611	157	1,768
Manufacture of paper & paper products.	29	5,629	531	6,160
Manufacture of chemicals and chemical products.....	37	3501	860	4,361
Manufacture of rubber products.....	40	3054	936	3,990
Manufacture of other non-metallic products.....	59	7,665	1563	9228
Manufacture of basic iron and steel.....	9	1,158	165	1,323
Manufacture of fabricated metal products except machinery and equipment.....	98	2,367	629	2,996
Manufacture of motor vehicles, trailers and semi-trailers.....	4	973	300	1,273
Manufacture of furniture.....	234	2,758	949	3,707
Total Manufacturing	910	79,192	11,268	90,460

Compared with the previous year's same quarter the total employment has shown a decline by around three percent.

As a follow-up to the employment situation, respondents were also asked about their expectations on the number of employees in the next quarter. As presented in Table 2 below, 76 establishments responded that they expect a change (upward or downward) in the number of the work force due to different reasons. Out of these establishments, 67 establishments (88.2 percent) forecasted an increase in the number of workers due to a growing demand for their products, while 9 establishments (11.8 percent) expected a decrease/increase in the number of workers in the next quarter due to different reasons which is not mentioned in the alternative.

**Table 2: Number of Reporting Establishments by Reason for Change
In the Next Quarter's Number of Persons Engaged,
Third Quarter 1999E.F.Y (2006/07)**

Reasons for change (from the previous quarter)	Number of establishments	Percentage
High /increasing demand for the products...	67	88.16
Decreasing/low demand for products	-	-
Shortage of working capital.....	-	-
Shortage of raw materials.....	-	-
Others.....	9	11.84
Total	76	100.00

In the quarter under discussion the number of the establishments which expected an increase in their employment in the coming quarter has increased as compared to the same period in 1998 E.F.Y. Meanwhile, shortage of capital, shortage of raw material and low demand for products has not been reported during the survey as reasons for the decline in the next quarter's employment status by any of the establishments.

Revenue Generation and Prospects

A total of 3.6 billion birr was earned as revenue by the manufacturing sector during the third quarter of 1999 E.F.Y, of which 95.8 percent was generated from local sales while the remaining 4.2 percent was generated from exports. Food manufacturing and manufacture of beverage products contributed the largest share to the total revenue generation during the quarter as they generated 22.8 and 15.3 percent of the total revenue where as, manufacture of wearing apparel industries were at the bottom with revenue amounting only to 0.4 percent of

the total. Similar to previous quarters most of the establishments supplied their products to local markets, except tanning and leather industries which generated 78.1 percent of their revenue from export, as shown in Table 3 below. This trend indicates that the export performance of Ethiopian manufacturing industries is very low and it is also an affair of very few manufacturing establishments.

**Table 3: Revenue from Sales by Major Industrial Groups,
Third Quarter 1999E.F.Y (2006/07)**

Major Industrial Groups	In 000' Birr					
	Revenue from sales					
	Local	%	Export	%	Total	%
Manufacture of food products.....	799,556	98.67	10,809	1.33	810,365	100.00
Manufacture of beverage.....	543,690	99.88	677	.12	544,367	100.00
Manufacture of tobacco products...	113,462	100.00	-	-	113,462	100.00
Manufacture of textiles.....	389,826	95.96	16,402	4.04	406,225	100.00
Manufacture of wearing apparel, except fur apparel.....	12,167	93.22	885	6.78	13,052	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags.....	84,388	41.74	117,810	58.26	202,198	100.00
Manufacture of wood and of products and cork except furniture	25,497	100.00	-	-	25,497	100.00
Manufacture of paper & paper products..	198,415	100.00	-	-	198,514	100.00
Manufacture of chemicals and chemical products.....	214,309	100.00	-	-	214,309	100.00
Manufacture of rubber products.....	134,828	97.06	4,078	2.94	138,906	100.00
Manufacture of other non-metallic products.....	300,139	100.00	-	-	300,139	100.00
Manufacture of basic iron and steel.....	130,374	100.00	-	-	130,374	100.00
Manufacture of fabricated metal products except machinery and equipment.....	109,944	99.86	155	.14	110,099	100.00
Manufacture of motor vehicles, trailers and semi-trailers.....	300,939	100.00	-	-	300,939	100.00
Manufacture of furniture.....	46,275	100.00	-	-	46,275	100.00
Total Manufacturing	3,403,809	95.76	150816	4.24	3,554,625	100.00

Compared to the pervious quarter, total revenue generated in this quarter decreased by 6 percent. . The significant increase in the total revenue is observed in the manufacture of other non-metallic products (cement and cement products). In contrast to this the total revenue in manufacture of wearing apparel except fur apparel has declined by 73.4 percent which is mainly due to lack of market for their products.

The manufacturing industries were also asked about the likely direction of their sales revenue in the next quarter. Among the establishments that responded to this question, 339 of them (71.2 percent) expect a future increase in their total revenue due to a growing local and international demand for their products, even though the international demand was found to be insignificant as shown in Table 4 below. On the other hand, around 121 establishments (25.4 percent) expect a future decline in their total revenue for reasons such as a decreasing demand for their products both locally and internationally and high cost of inputs.

**Table 4: Number of Establishment by Reason for Change
In Next Quarter's Revenue from Sales,
Third quarter 1999 E.F.Y (2006/07)**

Reasons for Change (from the previous quarter)	Number of establishments	Percentage
Increasing demand for products	339	71.22
Locally.....	306	70.59
Internationally.....	3	.63
Decreasing demand for products	83	17.44
Locally.....	83	17.44
Internationally.....	-	-
Cost of inputs.....	25	5.25
Unable to compete with:	13	2.73
Local manufactures	13-	2.73
Imported items.....	-	-
Others.....	16	3.36
Total	476	100.00

Unlike the previous year's same quarter, the number of establishments which expect a decrease in their revenue in the next quarter due to a decrease in demand for their products has shown a decline. Similarly, the number of establishments which expect increase in their revenue in the next quarter decreased by 13 percent in this quarter.

Raw Materials

The majority of the Ethiopian manufacturing establishments are known for their high dependence on imported raw materials in their production activities and this urges one to ask the reason for such a huge dependence. Among the total respondents, 400 establishments, which constitute 64.3 percent, reported that unavailability of raw materials locally is the major reason for relying on imported raw materials, as depicted in Table 5 below. Lack of

sufficient local supply was reported as a major reason by 68 establishments (11 percent), where as unreliable quality of local raw material (9.8 percent) respectively as major reasons for relying on imported raw materials. In general, the results indicate that the raw material demand by local manufacturing industries couldn't be satisfied from domestic sources due to various reasons mentioned above and this calls for the government and other stakeholders to look into the issue in order to reduce the outflow of the scarce foreign currency and to minimize the impact on domestically produced raw materials.

Compared to previous year's same period the number of establishments which reported 'Not available locally' as a major reason for not using locally produced raw materials have shown an increase in this quarter, whereas the number of establishments which reported 'local supply not reliable' have significantly declined in the quarter under study.

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Table 5: Distribution of Reporting Establishments by Reason for Using Imported Raw Materials, Third Quarter 1999 E.F.Y (2006/07)

Major Industrial Groups	Lack of Sufficient Supply locally		Not available locally		Local supply Is not reliable		Quality of locally available raw material is not reliable		Others reasons		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Manufacture of food products.....	2	1.36	144	97.96	-	-	1	.68	-	-	147	100.00
Manufacture of beverage.....	4	25.00	12	75.00	-	-	-	-	-	-	16	100.00
Manufacture of tobacco products.....	-	-	1	100.00	-	-	-	-	-	-	1	100.00
Manufacture of textiles.....	-	-	12	92.31	-	-	1	7.69	-	-	13	100.00
Manufacture of wearing apparel, except fur apparel.....	-	-	9	8.82	-	-	-	-	93	91.18	102	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags.....	-	-	68	100.00	-	-	-	-	-	-	68	100.00
Manufacture of Wood and of wood products and cork, except furniture..	-	-	11	100.00	-	-	-	-	-	-	11	100.00
Manufacture of paper & paper products.....	-	-	15	100.00	-	-	-	-	-	-	15	100.00
Manufacture of chemicals and chemical products.....	-	9.09	20	90.91	-	-	-	-	-	-	22	100.00
Manufacture of rubber products....	-	-	48	100.00	-	-	-	-	-	-	48	100.00
Manufacture of other non metallic Products.....	-	-	10	100.00	-	-	-	-	-	-	10	100.00
Manufacture of basic iron and steel.....	-	-	9	100.00	-	-	-	-	-	-	9	100.00
Manufacture of fabricated metal products except machinery and equipment.....	-	-	3	4.84	-	-	59	95.16	-	-	62	100.00
Manufacture of motor vehicles, trailers and semi-trailers.....	-	-	4	100.00	-	-	-	-	-	-	4	100.00
Manufacture of furniture.....	60	63.83	34	36.17	-	-	-	-	-	-	94	100.00
Total Manufacturing	187	29.08	400	64.31	-	-	61	9.81	93	14.95	622	100.00

New Capital Expenditure

New capital expenditure by the existing establishments in the quarter amounted to birr 166 million. Of this amount, the share of manufacture of Tobacco and beverage products was birr 95.8 million (57.7 percent) and 27.1 million (16.3 percent), respectively, (Refer to Table 6 below). The establishments have been investing their capital for acquisition of various fixed assets, such that, around birr 82.3 million (49.6 percent) of the total new capital expenditure was spent on acquiring new machinery and equipment, while birr 59.5 million (35.8 percent) of the total capital expenditure was spent on construction of new buildings and building maintenance activities.

Total new capital expenditure in the sector has increased by more than birr 35.2 million birr (26.9 percent) as compared to the same period last year. Out of the total new capital expenditure most of the expenditure went to machinery and equipment in both periods. The probable reason why new capital expenditure on machinery and equipment takes the lion's share, in both quarters is that, production of goods is closely linked to machineries, which in turn, make them to depreciate quickly, and this entails a continuous demand for machineries and equipment.

**Table 6: Value of New Capital Expenditure on Fixed Assets of the Existing Establishments
by Type of Fixed Asset and Major Industrial
Group, Third Quarter 1999 E.F.Y (2006/07) in birr**

Major Industrial Groups	Building	Machinery & equipment	Vehicles	Others	Total
Manufacture of food products.....	2,056,056	2,611,071	1,716,551	573,549	6,957,227
Manufacture of beverage.....	989,648	17,438,434	8,502,779	131,106	27,061,967
Manufacture of tobacco products.....	-	-	-	-	-
Manufacture of textiles	48,523,770	46,903,392	21,807	308,404	95,757,373
Manufacture of wearing apparel, except fur apparel.....	-	-	-	7,448	7,448
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags.....	-	137,276	768,168	105,657	1,011,101
Manufacture of wood and of wood products and Cork, except furniture.....	-	2,817,221	-	-	2,817,221
Manufacture of paper & paper products...	111,841	3,297,415	290,801	175,633	3,875,690
Manufacture of chemicals and chemical products.....	563,126	3,476,747	829,113	689,019	5,558,005
Manufacture of rubber products	-	1,128,142	1,401,579	61,463	2,591,184
Manufacture of other non-metallic products.....	353,515	380,452	478,062	126,837	1,338,866
Manufacture of basic iron and steel	-	-	-	-	-
Manufacture of fabricated metal products except machinery and equipment.....	1,945,695	3,172,737	7,654,500	291,474	13,064,406
Manufacture of motor vehicles, trailers and semi-trailers.....	-	-	-	67,596	67,596
Manufacture of furniture.....	4,911,114	951,715	-	93,713	5,956,542
Total Manufacturing	59,454,765	82,314,602	21,663,360	2,631,899	166,064,626

Capacity Utilization

In almost all short-term business surveys, capacity utilization is found to be an important variable in studying the efficiency and performance of manufacturing industries overtime. For this reason, two questions were forwarded to the respondents during the survey: the first, regarding the existing level of capacity utilization by the establishments in the different industrial groups, whereas the second question was about the reasons for operating below their full capacity. As shown in Table 7 below, during the quarter, only 54.5 percent of the total capacity is being utilized by the manufacturing industries, while around 45.5 percent of the total

capacity remains unexploited. A relatively high degree of capacity utilization was observed in manufacture of wood and wood products and cork, except furniture (89.44 percent) while a low level of capacity utilization was observed in manufacture of furniture products (47.2 percent).

Table 7: Distribution of Establishments by Percentage of Capacity Utilization, Third Quarter 1999 E.F.Y (2006/07)

Major Industrial Groups	Number of establishments				
	≤ 25 %	26-50%	51-75%	76-100%	Average
Manufacture of food products.....	13	21	126	7	61.72
Manufacture of beverage.....	2	15	1	13	59.40
Manufacture of tobacco products...	-	-	1	-	61.00
Manufacture of textiles	-	6	9	1	56.78
Manufacture of wearing apparel, except fur apparel.....	-	95	9	-	41.51
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags.....	-	58	7	4	50.60
Manufacture of wood and wood products and cork, except furniture.....	-	-	-	11	89.44
Manufacture of paper & paper products.	-	5	1	21	87.10
Manufacture of chemicals and chemical products.....	5	2	13	5	61.50
Manufacture of rubber products.....	-	4	45	-	60.11
Manufacture of other non-metallic products.....	26	6	15	10	50.31
Manufacture of basic iron and steel.....	-	-	4	4	82.91
Manufacture of fabricated metal products except machinery and equipment.....	-	60	-	24	51.66
Manufacture of motor vehicles, trailers and semi-trailers.....	1	1	-	2	53.13
Manufacture of furniture.....	-	69	25	1	41.17
Total Manufacturing	47	342	256	103	54.49

As shown in Table 7 among the total manufacturing establishments included in this survey 6.3 percent of them were operating below or equal to 25 percent of their capacity, while around 13.8 percent of the establishments have been operating above 75 percent of their full capacities. Most of the establishments (45.7 percent) have been utilizing between 26 and 50 percent of their full capacities whereas 34.2 percent of them were operating between 51 and 75 percent capacity utilization category. In general, the survey results indicate low level of capacity utilization in Ethiopian manufacturing industries.

On the same note, the average level of capacity utilization in the survey quarter was slightly lower than the pervious year's same quarter, which was about 14.3 percent. In addition,

the number of establishments which operated below 25.0 percent of their full capacity has shown decline in the quarter.

The low level of capacity utilization in the sector would compel one to ask “what was behind this weak level of capacity utilization?” The responses from the establishments which are presented in Table 8 depict that, 386 of the establishments (around 57.6 percent), reported “lack of market demand” as a major cause for not operating at their full capacity. On the other hand, 106 establishments (15.8 percent) reported “problem with shortage of raw material” as a major reason for not utilizing their full capacity.” Problem related with electricity and water” is mentioned as major reason for not operating at full capacity by 12.2 percent of the establishments.

Table 8: Number of Establishments by Reason for not working at Full Capacity, Third Quarter 1999 E.F.Y (2006/07)

Reasons for not working at full capacity	Number of Establishments by age of Establishments (years)				Total number of Establishments	Percentage
	< 3yrs	3 -5 yrs	6 - 8 yrs	8 + yrs		
Shortage of raw materials.....	-	7	5	94	106	15.82
Shortage of spare parts.....	-	-	31	2	33	4.93
Shortage of foreign exchange.....	-	-	-	-	-	-
Lack of demand/market.....	-	-	94	292	386	57.61
Shortage of working capital.....	-	-	10	18	28	4.18
Problem with electricity and water	-	-	1	81	82	12.24
Repeated breakage of machinery.....	-	-	7	11	18	2.69
Problem with workers.....	-	-	-	-	-	-
Lack of skilled manpower.....	-	-	-	-	-	-
Government rules and regulations.....	-	-	-	11	11	1.64
Other reasons.....	2	-	-	4	6	.90
Total	2	7	148	513	670	100.00

The number of establishments which reported ‘lack of market demand’ has become the main reason not working at full capacity in this quarter and previous year’s same period, whereas those which reported ‘ Government rules and regulation ‘ has increase in this quarter.

APPENDIX

Estimation procedures of total, ratio and sampling errors

To estimate the required variables by reporting levels (domains), the following formulas were used.

1. Estimate of domain total \hat{Y}_h is given by:

$$\hat{Y}_h = \sum_{i=1}^{n_h} W_{hi} y_{hi} \text{ -----} \quad (1)$$

Where,

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

$M_h =$ Sum of basic values of establishments in stratum h obtained from the sampling frame.

$M_{hi} =$ Basic value of the i^{th} establishment in stratum h obtained from the sampling frame.

$n_h =$ Number of successfully covered sample establishments in stratum h.

$y_{hi} =$ The observed value of a characteristic y for manufacturing industry i in stratum h.

Note:

- Estimate of total manufacturing characteristic, \hat{Y} , is obtained by summing up stratum/domain total estimates.

$$\hat{Y} = \sum_{h=1} \hat{Y}_h \text{ -----} \quad (2)$$

- During the time of sample selection establishments having a basic value higher than the sampling interval were selected with certainty (with a probability of 1). Hence, the basic sampling weight of those establishments was taken to be 1.

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:

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

Where,

$$\hat{Y}_{hi} = W_{hi} y_{hi}$$

Other notations are as defined above.

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

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

4. Coefficient of variation and confidence interval

The following formulas were used to calculate coefficient of variation and confidence interval of the domain (reporting level) total.

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

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

and

Ninety five percent confidence interval (CI) of domain total is:

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

5. Ratio estimates:

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

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

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

Where,

$$\hat{X}_{hi} = W_{hi} X_{hi}$$

Other notations are as defined above.

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

Table 1: Number of Persons Engaged by Major Industrial Groups, 1st Quarter
1999 E.F.Y (2005/06)

Major Industrial Groups	Persons engaged			
	Number of Estab.	Permanent	Seasonal	Total
Manufacture of food products	169	14,214	4,305	18,519
Manufacture of beverage	31	8,963	726	9,689
Manufacture of tobacco products	1	776	-	776
Manufacture of textiles	15	13,286	588	13,874
Manufacture of wearing apparel, except fur apparel	104	5,255	1,332	6,587
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags	69	6,729	533	7,262
Manufacture of wood and of products and cork, except furniture	11	1,477	251	1,728
Manufacture of paper & paper products.	29	5,654	724	6,378
Manufacture of chemicals and chemical products	37	4,071	662	4,733
Manufacture of rubber products	48	2,950	300	3,250
Manufacture of other non-metallic products	59	6,940	1,792	8,732
Manufacture of basic iron and steel...	9	1,335	25	1,360
Manufacture of fabricated metal products except machinery and equipment	98	2,415	324	2,739
Manufacture of motor vehicles, trailers and semi-trailers	4	970	215	1,185
Manufacture of furniture	95	2,922	1,073	3,995
Total Manufacturing	779	77,957	12,850	90,807

Table 2: Number of Reporting Establishments by Reason for Change
in the Next Quarter's Number of Persons Engaged,
1st Quarter 1999 E.F.Y (2005/06)

Reasons for Change (from the previous quarter)	Number of establishments	Percentage
High/increasing demand for the products	84	45.16
Decreasing/low demand for products	8	4.30
Shortage of working capital.....	-	-
Shortage of raw materials	-	-
Others	94	50.54
Total	186	100.00

Table 3: Revenue from Sales by Major Industrial Groups, 1st Quarter
 1999 E.F.Y (2005/06)
 In '000 Birr

Major Industrial Groups	Revenue from sales					
	Local	%	Export	%	Total	%
Manufacture of food products	569,683	99.83	976	.17	570,659	100.00
Manufacture of beverage	494,578	99.64	1,809	.36	496,387	100.00
Manufacture of tobacco products	84,605	100.00	-	-	84,605	100.00
Manufacture of textiles	304,000	98.36	5,063	1.64	309,063	100.00
Manufacture of wearing apparel, except fur apparel	42,308	100.00	-	-	42,308	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags	78,413	39.93	117,973	60.07	196,386	100.00
Manufacture of wood and of products and cork, except furniture	24,327	100.00	-	-	24,327	100.00
Manufacture of paper & paper products.	128,001	100.00	-	-	128,001	100.00
Manufacture of chemicals and chemical products	178,449	100.00	-	-	178,449	100.00
Manufacture of rubber products	130,909	98.76	1,648	1.24	132,557	100.00
Manufacture of other non-metallic products	400,835	100.00	-	-	400,835	100.00
Manufacture of basic iron and steel...	89,212	100.00	-	-	89,212	100.00
Manufacture of fabricated metal products except machinery and equipment	82,299	100.00	-	-	82,299	100.00
Manufacture of motor vehicles, trailers and semi-trailers	90,254	100.00	-	-	90,254	100.00
Manufacture of furniture	59,345	100.00	-	-	59,345	100.00
Total Manufacturing	2,757,218	95.58	127,469	4.42	2,884,687	100.00

Table 4: Number of Establishment by Reason for Change in Next Quarter's Revenue from Sales, 1st Quarter 1999 E.F.Y (2005/06)

Reasons for Change (from the previous quarter)	Number of establishments	Percentage
Increasing demand for products	353	64.30
Locally	344	62.66
Internationally	9	1.64
Decreasing demand for products	181	32.97
Locally	178	32.42
Internationally	3	.55
Cost of inputs	2	.36
Unable to compare with:	-	-
Local manufactures	-	-
Imported items	-	-
Others	13	2.37
Total	549	100.00

Table 5: Distribution of Reporting Establishments by Reason for Using Imported Raw Materials, 1st Quarter
1999 E.F.Y (2005/06)

Major Industrial Groups	Lack of sufficient supply locally		Not available locally		Local supply is not reliable		Quality of locally available raw materials is not reliable		Other reasons		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Manufacture of food products	13	8.72	134	89.93	1	.67	1	.67	-	-	149	100.00
Manufacture of beverage	-	-	31	100.00	-	-	-	-	-	-	31	100.00
Manufacture of tobacco products	-	-	1	100.00	-	-	-	-	-	-	1	100.00
Manufacture of textiles	3	23.08	9	69.23	-	-	-	-	1	7.69	13	100.00
Manufacture of wearing apparel, except fur apparel	-	-	95	100.00	-	-	-	-	-	-	95	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags	1	1.45	68	98.55	-	-	-	-	-	-	69	100.00
Manufacture of wood and of products and cork, except furniture	-	-	11	100.00	-	-	-	-	-	-	11	100.00
Manufacture of paper & paper products.	3	20.00	12	80.00	-	-	-	-	-	-	15	100.00
Manufacture of chemicals and chemical products	3	13.64	19	86.36	-	-	-	-	-	-	22	100.00
Manufacture of rubber products	-	-	48	100.00	-	-	-	-	-	-	48	100.00
Manufacture of other non-metallic products	-	-	11	100.00	-	-	-	-	-	-	11	100.00
Manufacture of basic iron and steel...	5	55.56	4	44.44	-	-	-	-	-	-	9	100.00
Manufacture of fabricated metal products except machinery and equipment	-	-	40	40.40	-	-	59	59.60	-	-	99	100.00
Manufacture of motor vehicles, trailers and semi-trailers	-	-	3	75.00	1	25.00	-	-	-	-	4	100.00
Manufacture of furniture	60	63.83	25	26.60	-	-	-	-	9	9.57	94	100.00
Total Manufacturing	88	13.11	511	76.15	2	.30	60	8.94	10	1.49	671	100.00

Table 6: Value of New Capital Expenditure on Fixed Assets of the Existing Establishments by Type and Major Industrial Group, 1st Quarter 1999 E.F.Y (2005/06)
In Birr

Major Industrial Groups	Building	Machinery & equipments	Vehicles	Others	Total
Manufacture of food products	3,043,259	35,584,393	6,531,287	636,137	45,795,076
Manufacture of beverage	-	15,480,195	3,208,196	2,576,038	21,264,429
Manufacture of tobacco products	-	-	-	-	-
Manufacture of textiles	4,171,840	8,853,508	-	235,504	13,260,852
Manufacture of wearing apparel, except fur apparel	-	223,440	-	-	223,440
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags	17,510	596,779	228,813	6,993	850,095
Manufacture of wood and of products and cork, except furniture	-	-	-	64,253	64,253
Manufacture of paper & paper products.	7,230	647,053	3,701	627,121	1,285,105
Manufacture of chemicals and chemical products	97,258	7,501	3,539	-	108,298
Manufacture of rubber products	-	7,524,483	-	653,069	8,177,552
Manufacture of other non-metallic products	4,074,529	966,638	879,149	427,851	6,348,167
Manufacture of basic iron and steel...	-	-	-	99,760	99,760
Manufacture of fabricated metal products except machinery and equipment	-	22,341,460	4,380,658	78,506	26,800,624
Manufacture of motor vehicles, trailers and semi-trailers	-	-	-	96,000	96,000
Manufacture of furniture	9,941,360	-	-	42,687	9,984,047
Total Manufacturing	21,352,986	92,225,450	15,235,343	5,543,919	134,357,698

Table 7: Distribution of Establishments by Percentage of Capacity Utilization,
1st Quarter 1999 E.F.Y (2005/06)

Major Industrial Groups	Number of establishments				Average
	< 25%	26-50%	51-75%	76 - 100%	
Manufacture of food products	42	51	70	4	52.63
Manufacture of beverage	-	15	2	14	68.92
Manufacture of tobacco products	-	-	1	-	65.00
Manufacture of textiles	3	5	4	-	35.15
Manufacture of wearing apparel, except fur apparel	-	2	95	7	62.43
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags	33	31	1	4	36.03
Manufacture of wood and of products and cork, except furniture	-	10	-	1	49.85
Manufacture of paper & paper products.	-	7	2	20	77.59
Manufacture of chemicals and chemical products	14	3	13	7	43.71
Manufacture of rubber products	-	36	12	-	36.59
Manufacture of other non-metallic products	1	32	8	5	46.30
Manufacture of basic iron and steel...	-	-	4	5	79.56
Manufacture of fabricated metal products except machinery and equipment	1	59	10	23	53.56
Manufacture of motor vehicles, trailers and semi-trailers	-	-	1	2	68.31
Manufacture of furniture	-	-	34	61	86.80
Total Manufacturing	94	251	257	153	56.72

Table 8: Number of Establishments by Reason for not Working
at Full Capacity, 1st Quarter 1999 E.F.Y (2005/06)

Reasons for not working at full capacity	Number of Establishments by age of Establishments (Years)				Total	
	< 3 yrs	3-5 yrs	6-8 yrs	8+ yrs	No.of Estab	%
Shortage of raw materials	-	7	39	241	287	42.58
Shortage of spare parts	-	-	-	2	2	.30
Shortage of foreign exchange.....	-	-	-	-	-	-
Lack of demand/market.....	-	5	16	149	170	25.22
Shortage of working capital	-	-	10	8	18	2.67
Problem with electricity and water	-	-	31	82	113	16.77
Repeated breakage of machinery ...	-	-	-	21	21	3.12
Problem with workers.....	-	-	-	2	2	.30
Lack of skilled manpower	-	-	-	18	18	2.67
Government rules and regulations	-	-	-	1	1	.15
Other reasons	-	2	1	39	42	6.23
Total	-	14	97	563	674	100.00

