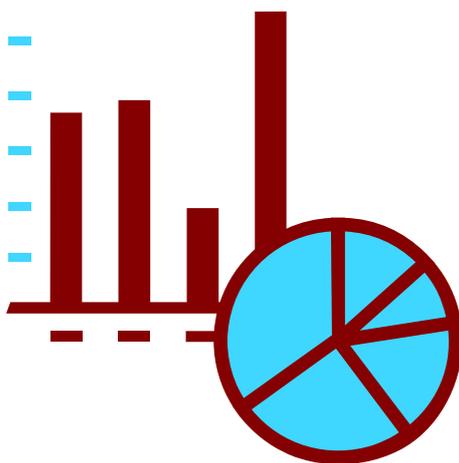# Central Statistical Agency

Quarterly Manufacturing Industry Business Survey, Fourth Quarter 2001 E.F.Y

Addis Ababa

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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 twentieth 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 describe the estimation procedure is 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 manufacturing 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 2002/03 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 Fourth 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 ½), 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 11 establishments out of the sampled 130 establishments; 6 establishments due to non-response and 5 establishment due to closure after the end of the Fourth quarter. As a result, the survey succeeded to cover 119 (91.5 percent) establishments throughout the entire regions.

Estimation procedures of totals, ratios, sampling error are given in Appendix I.

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 data quality. Instruction manuals on editing were given to personnel involved in the editing process. Briefings on the subject along with the editing manual were put to use, to edit and code the data collected. Finally, the edited and coded questionnaires were checked and verified by another group of 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 programmer from the Data Processing Department with technical assistance from the staff of manufacturing Industry Statistics Team.

VII. Summary of Survey Findings

Employment

Survey results shown in Table 1 below indicate that, in the Fourth quarter of 2001 E.F.Y., a total of 84,502 workers were engaged in the manufacturing industry, of which 70,258 (83.1 percent) of the workers were permanent while the remaining 14,244 (16.9 percent) persons were seasonal or temporary employees. Among the industrial groups, manufacture of food products were the major employers like in the previous quarters, where by, they employed around 19.5 percent of the total work force in the sector followed by textile industries which took in around 14.2 percent. On the other hand, tobacco manufacturing establishments contributed 0.9 percent of the total employment, which is the least.

Table 1: Number of Persons Engaged by Major Industrial Groups,
Fourth Quarter 2001 E.F.Y. (2008/09)

Major Industrial Groups	Persons engaged			
	Number of establishments	Permanent	Seasonal	Total
Manufacture of food products.........	169	12,266	4,208	16,474
Manufacture of beverage.................	31	8,884	1,727	10,611
Manufacture of tobacco products...	1	751	4	755
Manufacture of textiles..................	15	10,536	1,425	11,961
Manufacture of wearing apparel, except fur apparel...........................	104	3,107	1,135	4,242
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags…………………………….	69	5,542	1,763	7,305
Manufacture of wood and wood products and cork, except furniture………………	11	1,419	45	1,464
Manufacture of paper & paper products.	29	5,487	397	5,884
Manufacture of chemicals and chemical products………………………………	37	3,837	697	4,534
Manufacture of rubber products…….	40	2,955	281	3,236
Manufacture of other non-metallic products………………………………	59	8,343	1,314	9,657
Manufacture of basic iron and steel……	9	1,363	125	1,488
Manufacture of fabricated metal products except machinery and Equipment………………………………	98	2,008	424	2,432
Manufacture of motor vehicles, trailers and semi-trailers………………………...	4	879	332	1,211
Manufacture of furniture………………	234	2,881	367	3,248
Total Manufacturing	**910**	**70,258**	**14,244**	**84,502**

On the other hand compared with the previous year's same quarter the total employment during the quarter under discussion has shown a decline of around eight 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, 281 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, 72 establishments (25.6 percent) forecasted increase in the number of workers due to increasing demand for their products, while 4 establishments (1.4 percent) expected a decline in the number of workers in the next quarter as a result of decreasing demand for products. And the rest (200 establishments) gave various other reasons for a change in their work force in the following quarter.

In the quarter under discussion the number of establishments which expected an increase in their employment in the coming quarter has increased compared to the same period in 2000 E.F.Y. Meanwhile shortage of working capital has not been reported during the survey as a reason for the decline in the next quarter's employment status by any of the establishments.

Table 2: Number of Reporting Establishments by Reason for Change
In the Next Quarter's Number of Persons Engaged,
***Fourth* Quarter 2001E.F.Y (2008/09)**

Reasons for change (from the previous quarter)	Number of establishments	Percentage
High /increasing demand for the products…	72	25.62
Decreasing/low demand for products ……..	4	1.42
Shortage of working capital………………..	3	1.07
Shortage of raw materials………………….	2	0.71
Others……………………………………	200	71.17
Total	**281**	**100.00**

Revenue Generation and Prospects

A total of 5.2 billion birr was earned as revenue by the manufacturing sector during the fourth quarter of 2001 E.F.Y, of which 97.7 percent was generated from local sales while the remaining 2.3 percent was generated from exports. Manufacture of beverage and food products contributed the largest share to the total revenue generation during the quarter, as they generated 23.5 and 19.8 percent of the total revenue, respectively, where as, manufacturing of wearing apparel, except fur apparel were at the bottom, with revenue amounting only to 0.3 percent of the total. Most of the establishments supplied their products to local markets, except tanning and textiles manufacturing industries and manufacture of textiles which generated 33.3 and 8.77 percent of their revenue from export respectively, as shown in Table 3 below. In addition to that, these two industrial groups together have earned about 71.8 percent of the total export revenue of the large and medium manufacturing industries. This trend indicates that the export performance of Ethiopian manufacturing industries is very low.

**Table 3: Revenue from Sales by Major Industrial Groups,
Fourth Quarter 2001E.F.Y (2008/09)**

In 000' Birr

Major Industrial Groups	Revenue from sales					
	Local	%	Export	%	Total	%
Manufacture of food products.........	1,002,029	97.63	24,336	2.37	1,026,365	100.00
Manufacture of beverage.................	1,212,402	99.67	4,070	0.33	1,216,472	100.00
Manufacture of tobacco products...	187,004	99.67	612	0.33	187,616	100.00
Manufacture of textiles..................	174,231	91.23	16,752	8.77	190,983	100.00
Manufacture of wearing apparel, except fur apparel...........................	17,344	99.96	7	0.04	17,351	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags…………………………….	136,860	66.67	68,418	33.33	205,278	100.00
Manufacture of wood and of products and cork except furniture ……………	627,754	100.00	-	-	627,754	100.00
Manufacture of paper & paper products..	201,219	100.00	-	-	201,219	100.00
Manufacture of chemicals and chemical Products………………………………	361,049	98.80	4,399	1.20	365,448	100.00
Manufacture of rubber products…….	330,151	100.00	-	-	330,151	100.00
Manufacture of other non-metallic products………………………………	339,374	100.00	-	-	339,374	100.00
Manufacture of basic iron and steel……	146,098	100.00	-	-	146,098	100.00
Manufacture of fabricated metal products except machinery and equipment………………………………	102,655	100.00	-	-	102,655	100.00
Manufacture of motor vehicles, trailers and semi-trailers………………………...	124,969	100.00	-	-	124,969	100.00
Manufacture of furniture…………….	94,748	100.00	-	-	94,748	100.00
Total Manufacturing	**5,057,887**	**97.71**	**118,594**	**2.29**	**5,176,481**	**100.00**

Compared to the pervious quarter, total revenue generated in this quarter increase by 16.2 percent. The significant increase in the total revenue is observed in the manufacture of beverage products. On the other hand, the total revenue in manufacture of non-metallic products, manufacture of textiles, and manufacture of tanning and dressing of leather decreased by 59.2, 10.2 and 9.5 percent over the previous quarter, respectively.

The manufacturing establishments surveyed were also asked about the likely direction of their sales revenue in the next quarter. Among the establishments that responded to this question, 286 of them (62.3 percent) expect a future increase in their total revenue due to a growing local demand for their products, as shown in Table 4 below. On the other hand, 109 establishments expect a future decline in their total revenue due to decreasing demand for their products both locally and internationally (23.8) and high cost of inputs (11.4 percent).

Table 4: Number of Establishments by Reason for Change
In Next Quarter's Revenue from Sales,
Fourth quarter 2001 E.F.Y (2008/09)

Reasons for Change (from the previous quarter)	Number of establishments	Percentage
Increasing demand for products	286	62.45
Locally……………………………	285	62.23
Internationally……………………	1	0.22
Decreasing demand for products	109	23.80
Locally……………………………	108	23.58
Internationally……………………	1	0.22
Cost of inputs…………………………...	52	11.35
Unable to compete with:	8	1.75
Local manufactures ……………..	2	0.44
Imported items……………………	6	1.31
Others…………………………………...	3	0.66
Total	**458**	**100.0**

Compared to the previous year's same quarter, the number of establishments which expect a rise in their revenue in the next quarter due to a decrease in demand for their products has shown a 113.7 percent decrease. On the other hand, the number of establishments which expect decrease in their revenue due to high cost of inputs decreased by 52.3 percent in this quarter, compared to the same quarter of 2000 E.F.Y.

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. Out of the total responding establishments to this particular question, 264 establishments, which constituted 45.44 percent, reported that lack of sufficient local supply, is the major reason for relying on imported raw materials, as shown in Table 5 below. Unavailability of raw material locally was reported as major reason by 250 establishments (43.03 percent), where as Unreliability quality of locally available raw materials was mentioned as a reason for relying on imported raw material by 60 establishments or 10.33 percent of the total. In general, the results show that the raw material demand by local manufacturing industries couldn't be satisfied from domestic sources due to various reasons mentioned above.

**Table 5: Distribution of Reporting Establishments by Reason for Using
Imported Raw Materials, Fourth Quarter 2001 E.F.Y (2008/09)**

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........	64	71.91	17	19.10	7	7.87	1	1.12	-	-	89	100.00
Manufacture of beverage...............	4	28.57	10	71.43	-	-	-	-	-	-	14	100.00
Manufacture of tobacco products…….	-	-	1	100.00	-	-	-	-	-	-	1	100.00
Manufacture of textiles.................	4	26.67	11	73.33	-	-	-	-	-	-	15	100.00
Manufacture of wearing apparel, except fur apparel.........................	95	91.35	9	8.65	-	-	-	-	-	-	104	100.00
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags……………………	3	4.35	66	95.65	-	-	-	-	-	-	69	100.00
Manufacture of Wood and of wood products and cork, except furniture..	-	-	11	100.00	-	-	-	-	-	-	11	100.00
Manufacture of paper & paper products…………………………..	7	46.67	8	53.33	-	-	-	-	-	-	15	100.00
Manufacture of chemicals and chemical products………………	1	4.55	21	95.45	-	-	-	-	-	-	22	100.00
Manufacture of rubber products….	-	-	48	100.00	-	-	-	-	-	-	48	100.00
Manufacture of other non metallic Products……………………….	1	9.09	10	90.91	-	-	-	-	-	-	11	100.00
Manufacture of basic iron and steel…….	3	37.50	5	62.50	-	-	-	-	-	-	8	100.00
Manufacture of fabricated metal products except machinery and equipment………	22	26.19	3	3.57	-	-	59	70.24	-	-	84	100.00
Manufacture of motor vehicles, trailers and semi-trailers………….	-	-	3	100.00	-	-	-	-	-	-	3	100.00
Manufacture of furniture…………	60	68.97	27	31.03	-	-	-	-	-	-	87	100.00
Total Manufacturing	**264**	**45.44**	**250**	**43.03**	**7**	**1.20**	**60**	**10.33**	**-**	**-**	**581**	**100.00**

New Capital Expenditure

New capital expenditure by the existing establishments in the quarter amounted to birr 225.7 million. Of this amount, the share of food manufacturing industries and beverage was birr 101.5 million (45.0 percent) and 66.6 million (29.5 percent), respectively (Refer to Table 6 below). The establishments have been investing their capital for acquisition of various fixed assets, of which, around birr 117 million (51.8 percent) of the total new capital expenditure was spent on acquiring new machinery and equipment, while birr 61.3 million (27.1 percent) of the total capital expenditure was spent on building.

Total new capital expenditure in the sector has declined by 298 million birr (96.9 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.

Table 6: Value of New Capital Expenditure on Fixed Assets of the Existing Establishments by Type of Fixed Asset and Major Industrial Group, Fourth Quarter 2001E.F.Y (2008/09)   in birr

Major Industrial Groups	Building	Machinery & equipment	Vehicles	Others	Total
Manufacture of food products.......……….	7,472,707	43,671,806	13,955,793	1,456,074	66,556,380
Manufacture of beverage.........…....…….	28,908,653	62,199,850	8,430,907	1,959,988	101,499,398
Manufacture of tobacco products……….	-	-	2,742,014	115,673	2,857,687
Manufacture of textiles ....……....……	-	-	108,332	1,106,250	1,214,582
Manufacture of wearing apparel, except fur apparel..........................	-	-	-	-	-
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags…………………………………	234,181	2,504,197	154,667	199,599	3,092,644
Manufacture of wood and of wood products and Cork, except furniture……………..	-	-	-	-	-
Manufacture of paper & paper products…	5,460,772	2,791,000	427,377	112,150	8,791,299
Manufacture of chemicals and chemical products……………………………………	42,627	975,355	757,132	445,300	2,220,414
Manufacture of rubber products …….	9,584,234	395,641	2,698,594	203,659	12,882,128
Manufacture of other non-metallic products…….	5,769,564	3,659,967	11,223,092	559,046	21,211,669
Manufacture of basic iron and steel ……	-	96,900	-	11,878	108,778
Manufacture of fabricated metal products except machinery and equipment………..	3,807,050	637,565	-	68,043	4,512,658
Manufacture of motor vehicles, trailers and semi-trailers……………..	-	36,522	531,960	109,306	677,788
Manufacture of furniture…………………	-	5,304	85,000	-	90,304
Total Manufacturing	**61,279,788**	**116,974,107**	**41,114,868**	**6,346,966**	**225,715,729**

Capacity Utilization

In almost all short-term business surveys, capacity utilization is considered as 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 whereas the Fourth question was about the reasons for operating below their full capacity. As shown in Table 7 below, during the quarter, only 48.8 percent of the total capacity was being utilized by the manufacturing industries, while around 51.2 percent of the total capacity remains unexploited. A relatively high degree of capacity utilization was observed in the manufacture of wood and wood products (73.2 percent) while a low level of capacity utilization was observed in manufacture of furniture (33.9 percent).

Table 7: Distribution of Establishments by Percentage of Capacity Utilization, Fourth Quarter 2001 E.F.Y (2008/09)

Major Industrial Groups	Number of establishments				
	≤ 25 %	26-50%	51-75%	76-100%	Average
Manufacture of food products.........	20	72	60	8	53.17
Manufacture of beverage................	-	18	6	7	62.76
Manufacture of tobacco products...	-	-	1	-	65.00
Manufacture of textiles	1	14	-	-	34.57
Manufacture of wearing apparel, except fur apparel...........................	2	7	95	-	58.80
Tanning and dressing of leather, manufacture of footwear, luggage and hand bags…………………………….	11	53	-	5	45.78
Manufacture of wood and wood products and cork, except furniture………………	-	-	11	-	73.24
Manufacture of paper & paper products.	6	6	2	16	68.34
Manufacture of chemicals and chemical products…………………………………	5	2	13	4	51.83
Manufacture of rubber products………	11	3	35	-	48.39
Manufacture of other non-metallic products………………………………….	25	18	6	9	37.19
Manufacture of basic iron and steel……	3	-	3	3	63.88
Manufacture of fabricated metal products except machinery and equipment………	-	82	-	1	39.50
Manufacture of motor vehicles, trailers and semi-trailers………………………...	1	-	-	3	70.93
Manufacture of furniture…………….	60	-	25	10	33.86
Total Manufacturing	**145**	**275**	**257**	**66**	**48.82**

As shown in Table 7 among the total manufacturing establishments included in this survey 19.5 percent of them were operating below or equal to 25 percent of their capacity, while around 8.9 percent of the establishments have been operating above 75 percent of their full

capacities during the survey period. Most of the establishments (34.6 percent) have been utilizing between 51 and 75 percent of their full capacities, whereas 37.0 percent of them were operating between 26 and 50 percent of their full capacity. In general, the survey results indicate low level of capacity utilization in Ethiopian manufacturing industries.

The average level of capacity utilization in the survey quarter was lower compared to the pervious year's same quarter, which was about 12.4 percent. On the other hand, the number of establishments which operated below a quarter of their full capacity has shown an increase in the quarter, against the same period a year ago.

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, reveal that 80.5 percent reported problem of electricity and water as a major cause for not operating at full capacity. On the other hand, 19 establishments (5.3 percent) reported shortage of raw materials as a major reason for not utilizing their full capacity.

Table 8: Number of Establishments by Reason for not working

at Full Capacity, Fourth Quarter 2001 E.F.Y (2008/09)

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………….….	-	-	-	19	19	5.29
Shortage of spare parts……………..…	-	-	-	3	3	0.84
Shortage of foreign exchange…………..	-	-	-	4	4	1.11
Lack of demand/market…………………	-	-	-	7	7	1..95
Shortage of working capital……………..	12	-	2	2	16	4.46
Problem with electricity and water …….	-	-	41	248	289	80.50
Repeated breakage of machinery………..	-	-	-	2	2	0.56
Problem with workers…………………..	-	-	-	-	-	-
Lack of skilled manpower………………	-	-	-	-	-	-
Government rules and regulations………	-	-	-	-	-	-
Other reasons……………………………	7	-	-	12	19	5.29
Total	**19**	**−**	**43**	**297**	**359**	**100.00**

 The number of establishments which reported ''Lack of market demand '' as a reason has decline in this quarter as compared to previous year same period where as those which reported problem of electricity and water has shown a rise in this quarter. Besides to this, none of the establishments reported ''problem with workers '', lack of skilled manpower and government rules and regulation as a problem for not operating at full capacity in both quarters.

Establishments' Assessment of the General Business Policy Environment

In this survey establishments were asked to evaluate the impact of the general business and policy environment on their activities and respondents were also expected to range the effects into five scales depending on the influence of the effects. Regarding the general business environment, proximity to the domestic market had no effect on the working environment of majority of the establishments (i.e., 35.54 percent) and absence of the required amount of raw materials was reported to have a negative effect on the business environment of 52.2 percent of the establishments as shown in Table 9. Corruption was not mentioned as an obstacle for the majority of the establishments (78.6 percent) whereas 2.0 percent of the establishments claimed that smuggling has a strong negative effect on their business environment.

The trading environment of the establishments could affect businesses either positively or negatively depending on the issues under consideration. In line with this, competition with imported items was found to have a negative effect on around 33.5 percent of the establishments though this factor doesn't have any effect on 57.1 percent of the establishments. Around 56.04 percent of the establishments reported that issues related with accessibility of international markets don't have any effect on their trading environment while its absence affected negatively 13.01 percent of the establishments.

The third group of policy environment is fiscal policy which includes the tax system, customs and loans from banks. The existing tax policy had a negative effect on the working environment of 39.3 percent of the establishments while 38.3 percent of the establishments reported that the existing tax system is not bringing any challenge on their working environment. Majority of the establishments revealed that the customs duty has no effect even though some of them (15.9 percent) are claiming that it has a negative effect on their activities. Regarding loans from banks nearly 43.2 percent of the establishments reported the loans from banks doesn't affect their business environment while 21.8 percent and 16.5 percent claimed that they have a positive and negative effects, respectively.

Table 9: Percentage Distribution of Establishments' Judgment on General Business and Policy Environment Affecting the Manufacturing Establishment, Fourth Quarter 1998 E.F.Y (2005/06)

Business Environment	Strong positive effect	Limited positive effect	No effect	Limited negative effect	Strong negative effect	Not applicable	Total
General Business Environment							
Proximity to the domestic market.. …………………	24.27	7.16	35.54	15.92	14.99	2.12	100.00
Availability of raw materials ……….………………	15.54	4.52	25.63	23.37	28.82	2.12	100.00
Corruption……………….…… …...…………………	9.18	-	78.59	1.99	7.71	2.53	100.00
Smuggling……………………..…………………….	5.84	-	59.5	13.81	10.36	10.49	100.00
Trading Environment							
Competition with imports………..………………	1.99	1.33	57.1	28.82	4.65	6.11	100.00
Access to international market…..…………………	4.52	5.44	56.04	11.42	1.59	20.98	100.00
Fiscal Policy							
Tax……………………………………… ….	8.5	3.85	38.25	13.28	26.03	10.09	100.00
Customs Duty……………………………………	4.65	2.79	55.64	4.78	11.16	20.98	100.00
Loans from banks……………………………..	11.42	10.36	43.16	13.28	3.19	18.59	100.00
Infrastructure							
Inland transport efficiency………..……………… …	4.52	11.02	50.73	6.64	16.87	10.23	100.00
Inland transport cost ……………………………	4.79	2.93	46.41	21.68	13.96	10.24	100.00
Electric supply …………………………………	16.49	0.13	0.53	79.92	2.79	0.13	100.00
Cost of electricity…………….…...………………	1.33	2.92	42.71	25.2	25.73	2.12	100.00
Water supply ………………………………………	7.98	8.78	57.31	11.3	11.7	2.93	100.00
Cost of water………………………………………	1.46	9.44	79.92	0.13	6.12	2.93	100.00
Telephone, fax and internet………………………..	7.7	9.96	72.91	1.86	5.44	2.12	100.00
Labour Factors							
Availability of skilled labour………..…………… …	27.62	11.29	35.99	17.53	5.44	2.12	100.00
Cost of skilled labour……………………………. ….	15.12	0.93	52.92	9.55	19.36	2.12	100.00
Productivity of skilled labour……………………… …	35.72	9.56	38.78	3.98	9.83	2.12	100.00
Ease of hiring and firing of workers…………………………………………	10.36	10.62	56.31	11.29	9.3	2.12	100.00
HIV/AIDS							
Absenteeism……………………………… …….	-	1.2	73.04	15.14	7.17	3.45	100.00
Medical expenses…………………………… ………	0.66	0.13	80.48	3.45	12.08	3.19	100.00
Others Factors							
Environmental legislation and controls…………………………………… ……………	10.34	3.58	76.66	4.77	1.72	2.92	100.00

The other business environment assessed is infrastructure, which includes inland transport efficiency, inland transport cost, electric supply, cost of electricity, water supply, and cost of water and telecom services. The results in Table 9 show that the current transportation facility is considered to be efficient for 15.5 percent of the industries while 23.5 percent of them report that the inefficient transport services are negatively affecting the exiting business environment. On the other hand, the prevailing cost of transportation is adversely affecting near to 35.6 percent of the establishments.

The existing supply of electricity was found to affect negatively 82.7 percent of the establishments where as 16.6 percent of them have reported uninterrupted supply of electric power has a positive influence on their business environment. Similarly, the cost of electricity has been introducing challenges on the working environment of 50.9 percent of the establishments while 42.7 percent of the industries are not affected by the prevailing cost of electricity. Regarding water supply near to 23 percent of the establishments are negatively affected by the unreliable water supply and 57.3 percent of the establishments, on the other hand, reported that they don't have problems related with water supply. 6.3 percent of the establishments are unhappy with the cost of water whereas 79.9 percent of them are not facing problems with regard to existing cost of water supply.

Availability of skilled manpower has been positively influencing the working environment of 38.9 percent of the establishments whereas its absence has negatively affected around 23 percent of the establishments. On the other hand, near to 28.9 percent of the establishments reported that they are adversely affected by the existing cost of labour though majority of them didn't mention it as a problem. With regard to productivity of employees, which is an important concern in the manufacturing sector, 45.3 percent of the establishments witnessed that they are satisfied with the productivity of their employees which in turn influenced their working environment positively. They survey result also indicated that issues related with hiring and firing of workers has not introduced any challenge on the working environment of most of the establishments.

Now a days manufacturing industries in developing nations are highly affected by the prevalence of HIV/AIDS pandemic through claiming the lives of productive and skilled labour force and this has been influencing the performance of the industries and the economies of the nations in general. However, majority (73.04 percent) of the Ethiopian manufacturing establishments responded that they are not affected by absenteeism as a result of HIV/AIDS and the medical expenses due to the disease has been affecting only 15.5 percent of the establishments. Furthermore, around 73.04 and 80.5 percent of the establishments are unaware of the effects of absenteeism and the extra medical expense due the disease respectively. This might indicate the lower attention offered to the issue by the establishments and this entails further efforts and interventions to minimize the ill effects of the disease.

Finally, establishments were asked regarding the effect environmental legislations and controls and the results indicated that 76.7 percent of the establishments were not found to be influenced either positively or negatively while around 6.5 percent of them reported that such issues are influencing the working environment negatively.

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:**

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

Where,

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

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

$M_{hi} =$ Basic value of the Ith 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.

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

- 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:

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

Where,

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

Other notations are as defined above.

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

$$SE(\hat{Y}_h) = \sqrt{Var(\hat{Y}_h)}$$ --- (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:

$$CV(\hat{Y}_h) = \frac{SE(\hat{Y}_h)}{\hat{Y}_h} x100$$ --- (6)

And

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

$$\hat{Y}_h \pm 1.96\, x\, SE(\hat{Y}_h)$$ -- (7)

5.   Ratio estimates:

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

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

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

In which

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

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.