



MANUFACTURING INDICES

ANNUAL SUMMARIES 2003















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INTRODUCTION

1. GENERAL

The Central Bureau of Statistics collects monthly data from a sample of about 2,500 manufacturing establishments. These data are used to prepare the current manufacturing indices, which show the development in manufacturing and in the economy in general. These indices appear in the *Monthly Bulletin of Statistics*, Chapter M.

The collected data also enable a summarizing of absolute data on the number of employees in manufacturing, labour cost and the revenue according to industry, sector, and size of the establishment (Tables 1-9).

This summary also includes, in Tables 10-11, data on the export sector – manufacturing establishments whose export constitutes over 50 percent of their sales value (without VAT) or establishments whose export amounts to over NIS 10 million, which constitutes over 25 percent of their sales value (without VAT).

Table 13 presents indices of the manufacturing production, number of employees, and actual work hours of employees, according to aggregated groups.

There is also a table presenting indices of the manufacturing revenue at constant prices (Table 12), which enables a calculation of the real change in the manufacturing revenue.

Table 14 presents data on the mobility of persons employed in manufacturing, which reflect changes in the absorption and discharge of persons employed in manufacturing in 2003, compared to 2002.

The “Main Findings” chapter presents data from the Manufacturing Inventory Survey. Calculation of the inventory data is based on a sub-sample of manufacturing indices.

2. MAIN FINDINGS

2.1 Production, Revenue and Inventory

In 2003, the level of manufacturing production in manufacturing establishments engaging employees (excluding the diamond industry) was 0.3 percent lower (at fixed prices) than in 2002, following a decrease of 1.9 percent in 2002, and 4.9 percent in 2001. This followed increases in manufacturing production of 10.1 in 2000, 1.4 percent in 1999, 3 percent in 1998, 2 percent in 1997, 5 percent in 1996 and 7-8 percent in 1991-1995.

The industries defined as "high technology" (see the chapter "Definitions and Explanations," Section 3.1) prevailed in the growth in the years 1996-2000, and contributed about 20 percent of the 23-percent increase in the total manufacturing production in this period.

In contrast to the years 2001 and 2002, in which the main decrease in manufacturing production was recorded in high technology industries, the significant decline of 3.2 percent occurred in low technology industries, whereas high technology industries recorded an increase of 2 percent.

Table A.- Percentage of Change in Manufacturing Production, Number of Employees and Wages per Employee, by Technological Intensity – 1995-2003 (Each Year Compared to Previous Year)

	Manufacturing – total			High Technology			Medium-High Technology			Medium-Low Technology			Low Technology		
	Production	Employee	Wages per Employee ⁽¹⁾	Production	Employee	Wages per Employee ⁽¹⁾	Production	Employee	Wages per Employee ⁽¹⁾	Production	Employee	Wages per Employee ⁽¹⁾	Production	Employee	Wages per Employee ⁽¹⁾
1996	5.4	1.5	2.6	12.0	3.4	6.1	2.4	1.0	0.6	6.8	4.9	0.7	0.0	-1.2	2.0
1997	1.8	-1.0	4.5	7.2	4.6	2.6	-2.1	-2.2	3.9	-0.2	-0.3	3.9	0.1	-3.5	4.8
1998	2.8	-1.0	3.8	9.0	4.4	4.2	5.8	-1.1	1.3	-1.9	-2.2	2.0	-0.3	-2.7	1.9
1999	1.4	-1.4	4.2	6.5	2.3	7.4	-0.8	-1.6	2.1	-2.2	-3.8	1.1	0.2	-1.7	1.5
2000	10.1	1.3	6.3	25.6	7.4	9.4	6.0	0.8	5.1	3.1	-0.1	3.9	-0.1	-0.9	5.5
2001	-4.9	-2.8	4.2	-7.4	0.2	3.6	-5.0	-2.8	4.0	-2.4	-2.7	2.4	-3.9	-4.9	5.1
2002	-1.9	-4.0	-4.1	-4.6	-5.7	0.4	1.5	-3.4	-7.5	1.0	-2.3	-4.7	-2.4	-4.4	-1.8
2003	-0.3	-2.5	1.9	2.1	-1.8	-1.2	-1.7	-4.2	3.9	-0.1	-1.1	1.3	-3.2	-3.3	5.4
2003 compared to 1995	14.4	-9.5	26.1	58.0	15.1	26.5	5.6	-12.8	10.7	4.0	-7.6	11.5	-9.2	-20.5	22.1

(1) Wages per employee, at constant prices.

Manufacturing revenue amounted in 2003 to NIS 234 billion, compared with NIS 232 billion in 2002 (a nominal rise of 0.9 percent). Sales to the domestic market constitute 63 percent of manufacturing revenue, and export sales – 37 percent. A decline of 1.9 percent in revenue at constant prices was recorded in 2003, compared with 2002.

The index of revenue at constant prices is computed as follows: The index of revenue at current prices is divided by a combined index made up of the index of wholesale prices of manufacturing output for the domestic market and export price indices. The manufacturing production index, which is designed to reflect changes in the added value of manufacturing, is computed by weighting indices of the indicators in which the changes resemble those of added value, such as product output, work hours invested in production, and revenue in constant prices.

Table 9 presents a division of data by revenue size groups. Establishments whose revenue reached NIS 100 million and over in 2003 constitute 2.7 percent of the total manufacturing establishments and employ 44 percent of the total employed persons in manufacturing. The revenue of these establishments was 67 percent of the total revenue in manufacturing. In electronic communication equipment, 20 percent of the establishments had revenue of NIS 100 million or over (85 percent of the total revenue in this industry), and they engaged 78 percent of all employed persons in this division.

Table B.- Manufacturing Inventory Indices at the End of 2003 (at Constant Prices)

Base: 100.0 = Last Quarter of 1996

Division	Total	Materials	Total products	Products in process	Finished products
Total	91.9	91.9	92.0	74.9	103.8
Food, Beverages and Tobacco Industries	114.7	132.8	96.4	105.0	94.5
Textiles, Clothing and Leather Industries	106.2	113.9	98.6	103.7	96.6
Building Inputs Industries	86.6	91.5	77.3	62.9	85.5
Chemicals, and Rubber & Plastics Industries	110.5	105.3	114.5	92.1	120.9
Metal and Machinery Industries	85.7	91.5	80.2	74.8	86.7
Electric, Electronic and Transport Industries	77.7	72.2	82.9	66.0	106.7
Paper, Furniture, Printing, Jewellery and Miscellaneous Industries	86.7	83.1	93.9	88.5	94.6

Table C.- Manufacturing Inventory Indices as of the End of 2002 (at Constant Prices)**Base: 100.0 = Last Quarter of 1996**

Division	Total	Materials	Total products	Products in process	Finished products
Total	94.9	97.1	92.7	93.1	92.4
Food, Beverages and Tobacco Industries	109.7	123.2	95.9	115.0	91.6
Textiles, Clothing and Leather Industries	105.5	121.1	90.0	85.0	92.0
Building Inputs Industries	95.9	98.6	90.8	93.2	89.4
Chemicals, Rubber and Plastics Industries	113.0	111.5	114.2	112.2	114.8
Metal and Machinery Industries	107.3	119.3	95.9	94.3	97.8
Electric, Electronic and Transport Industries	75.8	75.7	76.0	84.5	64.0
Paper, Furniture, Printing, Jewellery and Miscellaneous Industries	85.2	71.9	109.9	182.9	100.3

The value of manufacturing inventory was 3.2 percent lower at the end of 2003 than at the end of 2002. The data were calculated in constant December 1996 prices. The decrease is due to a 4.6-percent decline in the value of material inventory.

The share of product inventory in manufacturing establishments, which accounts for 60 percent of total inventory, corresponds on average to 20 days of production (or sales). However, groups vary depending on their manufacturing processes. For example, in the food industries, in which the manufacturing process is relatively short, product inventory equals 10 production days. In contrast, in the metal, metal products, machinery and electric and electronic equipment industries, where the manufacturing process is longer, the product inventory corresponds to one month of production.

A similar situation occurs with respect to the material inventory. In most industries the material inventory corresponds to an average of 1.5 months of consumption. The food industry keeps a one-month material inventory, and the metal industry keeps a material inventory for nearly two months.

2.2 Employment, Wages and Salary

The number of employed persons in manufacturing in 2003 was estimated at an average of 339 thousand per month (see “Definitions and Explanations,” Paragraph 3.1 – definition of employed persons), compared to 348 thousand employed persons in 2002 (2.6 percent decrease).

3 percent of employed persons (10.3 thousand) in 2003 were engaged through employment companies and their number declined by 1.5 thousand, compared to the number of those employed in the year 2002.

In the number of actual work hours of employees there was a 2.9-percent decrease, so that the product of a work hour increased in 2003 by 2.2 percent compared with 2002.

82 percent of the employed persons in manufacturing in 2003 were engaged in private sector establishments, 11 percent in the kibbutzim and cooperatives sector and 7 percent in the 15 public sector establishments.

The cost per work hour in manufacturing was NIS 59, 3.5 percent more than in 2002. The highest cost was recorded in establishments engaging 300 employed persons and above – NIS 80 per employee for a paid work hour, and the lowest – NIS 32 – was among establishments engaging 1-4 employees.

The share of the additional labour expenses in 2003 was 20 percent. The highest average annual wages per employee post was registered in the following divisions: "industrial equipment for control and supervision, medical and scientific equipment" – NIS 203 thousand, "electronic communication equipment" – NIS 198 thousand, "transport equipment" – NIS 161 thousand, and "mining and quarrying" – NIS 157 thousand; compared to an average of NIS 112 thousand in manufacturing in general. The lowest average wage was recorded in the "leather and leather products" and "wearing apparel" divisions (NIS 61-62 thousand per year).

As in previous years, in 2003 the public sector establishments paid their employees the highest annual wages – NIS 214 thousand, compared to NIS 93 thousand in the kibbutzim and cooperatives sector and NIS 104 thousand in the private establishments. This is also a result of various methods of distribution and centralization in the establishments of the different sectors.

It should be noted that the public sector establishments are the largest establishments in the economy. They employ an average of 1,670 workers per establishment, compared to an average of 22 workers per establishment in the private sector and 93 per establishment in the kibbutzim and cooperatives sector.

2.3 The Export Sector

93 percent of the manufacturing export was carried out by 764 establishments of the "export sector". These establishments constitute 5.9 percent of all manufacturing establishments in 2003, they engaged 37 percent of those employed in manufacturing, and their revenue was 46 percent of the total revenue of manufacturing.

The cost per paid work-hour is 39 percent higher in the "export sector" compared to the average in manufacturing, and sums up to NIS 82. The revenue per employed person in these establishments is 22 percent higher than the corresponding revenue in the total manufacturing.

The average number of employed persons per establishment in the export sector was 165, compared to an average of 26 employed persons per establishment in all the manufacturing establishments. 57 percent of the total revenue of the public sector establishments is the revenue of the "export establishments." This also applies to 40 percent of the revenue of establishments of the kibbutzim and cooperatives sector and to 44 percent of the revenue of the private sector establishments.

2.4 Mobility of Workers

The increase in employment level is a result of establishments expanding the number of their employed persons and of new establishments opening. However, the decrease in the number of workers in 2003 is a result of existing establishments which have reduced their employment and of establishments which were closed down.

In an analysis by establishments, it has been found that in 2003, 14 thousand employed persons were absorbed in existing establishments, where the number of employed persons increased (approximately 4 percent of all employed persons). By contrast, establishments which reduced their working labour, discharged 20 thousand employed persons. Similarly, the manufacturing establishments which opened absorbed 11 thousand employed persons, and establishments which closed during the year discharged about 16 thousand employed persons.

In analysis by size groups of employed persons per establishment, it has been found that the decrease in employment was higher in establishments which engaged 1-19 employed persons (11 percent compared to a 3 percent decrease of all establishments).

Table 14 presents data of mobility rate in employment, which is the ratio between the number of employed persons absorbed and discharged compared to the total number of employed persons. The highest mobility rate – 36 percent – was recorded in small establishments employing up to 19 workers.

Data on mobility of workers exclude persons engaged through employment companies.

3. DEFINITIONS AND EXPLANATIONS

3.1 Definitions

Employees – All workers who are listed on the employees' payroll as well as members of cooperative societies, including employees from Judea and Samaria and Gaza Area. Kibbutz members who work in a kibbutz establishment but do not receive wages are considered proprietors. Self-employed who work on a contract basis for the establishment are not included.

Employed persons – Employees, proprietors and family members working without pay, kibbutz members working in a kibbutz establishment without pay, persons employed through employment companies (in publications prior to 1998, the employed persons definition did not include persons engaged through employment companies).

Actual work hours – Include the overtime hours and include neither paid absence hours (such as sickness days and vacations), nor working hours of proprietors and their family members.

Wages and salaries (hereinafter “wages”) – All the payments on which income tax is due (before deduction of taxes) appearing in employee payrolls, including: base salary, cost of living allowance, seniority allowance and family allowance (excluding children allowance), proficiency allowance, travel fare, premiums, bonuses and payments for: overtime, shift work and on call, absence days, including imputation for the employer's vehicle used by the employee, telephone, clothing, daily food and lodging allowance (only on which income tax is due), retirement grant and payments in kind (e.g., meals, gifts, housing, etc.).

Labour costs – include, in addition to wages and salaries of employees, additional expenses such as the employer’s portion in payments to national insurance, training funds, pension funds, severance pay by the establishment, transport of workers, upkeep of cafeteria, worker training expenses, etc. These data, after “smoothing” the non-recurrent payments, serve for calculating the index of all payments related to engaging employees – the labour cost index. (See detailed definition in the paragraph “Definitions of Wages and Labour Compensation” in Chapter 14 – National Accounts – *Statistical Abstract of Israel* 2004, No. 55).

Paid hourly labour cost index – calculated as the ratio of the total labour cost index to the paid-work-hours index for all employees.

Wages per paid-work-hour index – is obtained by dividing the wages index of employees (except non-recurrent payments and backpay for previous periods) by the paid-work-hours index for employees (actual paid work hours and paid hours of absence).

Sales value (revenue) at current prices – Includes: the value of the product sold for the local market and for export and the value of goods from the establishment’s product distributed among the workers; income from working (including repairs) on materials of clients; the value of the merchandise produced by the establishment for its own use; purchase taxes and excise paid by the establishment; value added tax placed on the sales value. The sales value does not include subsidies.

Manufacturing industries by technological intensity – high-technology industries include electronical industries, aircraft and pharmaceutical products. Medium-high technology industries include chemical industries (excluding pharmaceutical products), machinery, electrical equipment and transport equipment (excluding aircraft). Medium-low technology industries include mining and quarrying, non-metallic minerals, rubber and plastic products, basic metals and metal products. Low-technology industries include food industries, beverages and tobacco, textiles, wearing apparel, leather, paper, printing, wood and furniture.

3.2 Explanations on the Data Used for the Estimates

Collecting – The data used to prepare the indices are gathered from manufacturing establishments. The data on establishments which engage up to four employees are received from administrative sources: the data on the number of employees and the wages come from the National Insurance, and the revenue data – from the system of value added tax.

Imputation – Data which were not received while calculating the indices were imputed according to the changes in the recorded data.

The “smoothing” system of the non-recurrent payments – Usually, non-recurrent payments and backpay relate to a period of a few months. Since it is impossible to receive from the establishments an accurate division of these payments according to the months they relate to, and since there are serious fluctuations concerning the sum of the non-recurrent payments, it was decided to include in the moving average wages for each month the non-recurrent payments and backpay of the last four months (the reported month and the preceding three months). For some of these establishments, the data received referred to payments which are divided backwards, throughout the entire year.

4. LIMITATIONS OF THE DATA

4.1 The limitations are divided as follows:

- a. Sampling errors
- b. Non-sampling errors
- c. Other limitations

a. Sampling errors

Since the estimates are based on samplings, they usually deviate from the “census value,” i.e., the data which would have been obtained from the census.

b. Non-sampling errors

1. Technical errors in the original data file that derive from an incorrect report due to errors in the recordings of the establishment or in one of the phases prior to the transferring of the file.
2. Errors in the original data file – derive from mistaken interpretations of the questions appearing in the questionnaire or from incompatibility between the definitions used by the accounting system of the establishment and definitions appearing in the questionnaire.
3. Non-reporting – requires imputing data for data which was not reported (it is obvious that this procedure does not achieve precisely the accurate data).

c. Other limitations

Lack of coverage due to classification problems originating from the fact that manufacturing establishments are classified as non manufacturing establishments.

Non-coverage and especially a retardation in the presentation of new establishments in the sampling.

Quality of the indicators – a limitation in the manufacturing production index deriving from the fact that not all indicators are equally adequate in representing the changes in added value.

Other coverage errors

- Errors in recording the accurate time in which the establishments closed down.
- Errors in surveying establishments which have more than one file in the National Insurance Institute.