



REPUBLIC OF THE PHILIPPINES

PHILIPPINE STATISTICS AUTHORITY

PRESS RELEASE

**PRODUCTION INDEX AND NET SALES INDEX
(Monthly Integrated Survey of Selected Industries)
May 2023
(2018=100)**

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Table A. Year-on-Year Growth Rates of Production Index, Net Sales Index and Producer Price Index for Total Manufacturing (2018=100) May 2022, April 2023^r, and May 2023^p (in Percent)

INDICATOR	May 2022	April 2023 ^r	May 2023 ^p
Production Index (2018=100)			
Value of Production Index (<i>VaPI</i>)	6.6	10.1	10.3
Volume of Production Index (<i>VoPI</i>)	-0.6	7.7	8.1
Net Sales Index (2018=100)			
Value of Net Sales Index (<i>VaNSI</i>)	17.1	0.02	3.4
Volume of Net Sales Index (<i>VoNSI</i>)	9.2	-2.2	1.4
Producer Price Index (2018=100)	7.2	2.3	2.0

p - preliminary, r - revised

Source: Philippine Statistics Authority

A. Year-on-year Growth for May 2023

1. Value of Production Index (VaPI)

The VaPI for manufacturing maintained its upward trend, posting an annual increment of 10.3 percent in May 2023, faster than the April 2023 annual growth of 10.1 percent. In May 2022, the VaPI recorded an annual growth rate of 6.6 percent. (Figure 2, and Tables A and 1)

The annual upturn in the VaPI in May 2023 was mainly contributed by the faster annual increase in the manufacture of electrical equipment industry division at 54.2 percent in May 2023 from 19.5 percent in the previous month. The manufacture of electrical equipment contributed 26.7 percent to the uptrend of



PSA Complex, East Avenue, Diliman, Quezon City, Philippines 1101
Telephone: (632) 8938-5267
www.psa.gov.ph

VaPI for the manufacturing section in May 2023. Out of the 22 industry divisions for the manufacturing section, manufacture of electrical equipment was the industry division with the 11th highest weight¹ in the computation of VaPI.

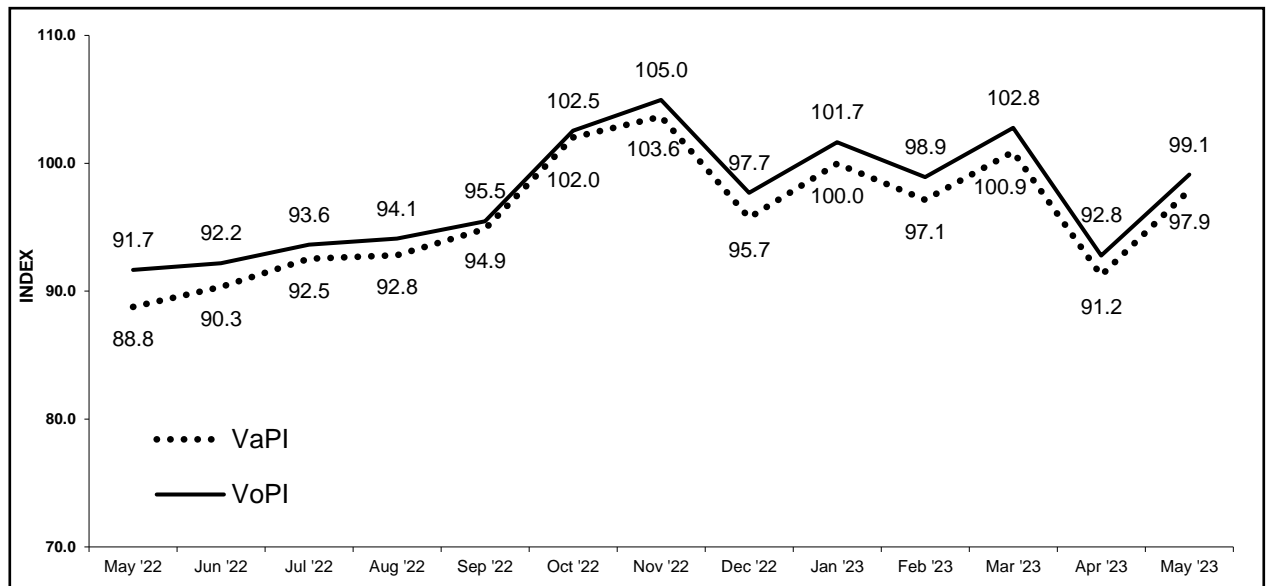
Other main contributors to the higher year-on-year growth of VaPI in May 2023 were the slower annual decreases in the manufacture of chemical and chemical products at -23.5 percent during the period from -33.3 percent in the previous month, and manufacture of computer, electronic and optical products with an annual decline of -7.1 percent in May 2023 from -9.4 percent annual drop in the previous month.

Of the remaining 19 industry divisions, 12 exhibited annual increments during the period. Meanwhile, seven industry divisions registered annual decreases during the month. The highest annual decrement was observed in manufacture of furniture at -28.0 percent. (Tables B and 1)

The top three industry divisions contributing to the overall VaPI for manufacturing in May 2023 were the following:

- a. Manufacture of food products with 51.1 percent share;
- b. Manufacture of transport equipment with 43.4 percent share; and
- c. Manufacture of electrical equipment with 12.2 percent share.

Figure 1. Value and Volume of Production Index for Total Manufacturing May 2022 - May 2023^p (2018 = 100)

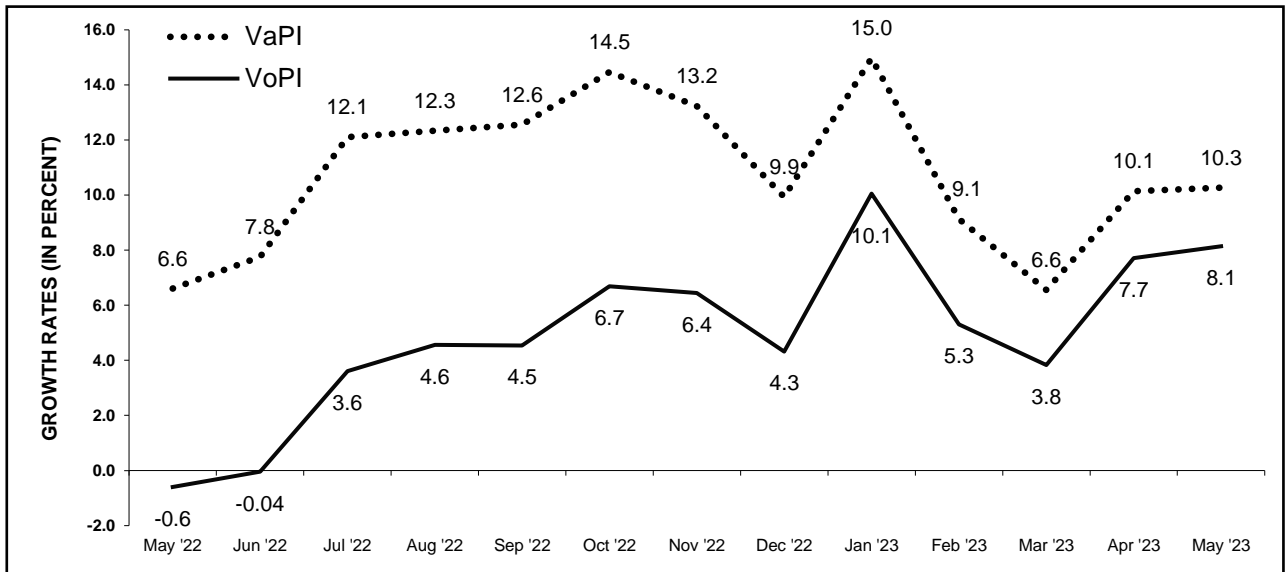


p - preliminary
Source: Philippine Statistics Authority

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¹ Refer to Method of Computation in the Technical Notes

Figure 2. Year-on-Year Growth Rates (%) of Value and Volume of Production Index for Total Manufacturing
May 2022 - May 2023^p (2018 = 100)



p - preliminary

Source: Philippine Statistics Authority

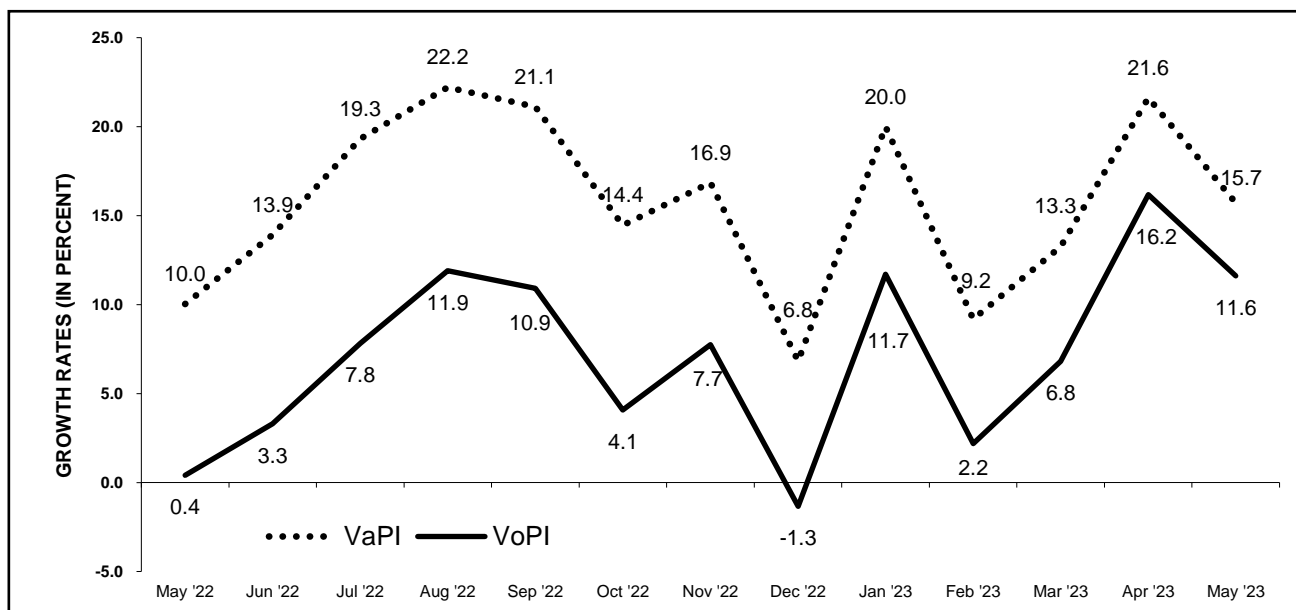
In May 2023, the VaPI for **manufacture of food products** registered an annual increment of 15.7 percent. This was slower compared with its April 2023 annual growth rate of 21.6 percent, but it is faster compared with its May 2022 annual increase of 10.0 percent. (Figure 3, and Tables 1 and 1a)

The slowdown in the year-on-year growth of the VaPI for manufacture of food products in May 2023 was primarily driven by the lower annual growth rate of manufacture of dairy products at 23.8 percent in May 2023 from 40.1 percent in the previous month.

Other primary contributors to the lower year-on-year increment of VaPI for manufacture of food products during the month were the slower annual increases observed in processing and preserving of meat at 15.2 percent from 35.5 percent in the past month, and manufacture of other food products at 32.6 percent from 36.2 percent in April 2023. The manufacture of other food products industry group includes bakery products, sugar, condiments, among others. (Table 1a)

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Figure 3. Year-on-Year Changes (%) in the Value and Volume of Production Index for Manufacture of Food Products
May 2022 - May 2023^p (2018 = 100)



p - preliminary

Source: Philippine Statistics Authority

2. Volume of Production Index (VoPI)

The VoPI for manufacturing registered a year-on-year increment of 8.1 percent in May 2023. This rate is faster than the annual increase of 7.7 percent in the previous month. In May 2022, however, VoPI recorded an annual drop of -0.6 percent. (Figure 2, and Tables A and 2)

The expansion in the annual growth of VoPI in May 2023 was mainly contributed by the annual upturn in manufacture of electrical equipment with 53.7 percent during the period from 19.2 percent in April 2023. The manufacture of electrical equipment shared 27.3 percent to the annual acceleration of VoPI of the manufacturing sector in May 2023.

Other primary contributors to the year-on-year uptrend of VoPI in May 2023 were the slower annual decline noted in manufacture of chemical and chemical products at -21.2 percent during the period from -32.2 percent in the previous month, and the annual increase in manufacture of beverages at 3.9 percent in May 2023 from -0.5 percent annual decrease in April 2023.

Of the remaining 19 industry divisions, nine exhibited annual increases during the period. Meanwhile, 10 industry divisions recorded annual decrements during the month. The highest annual decline was noted in manufacture of furniture at -31.3 percent. (Tables C and 2)

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The top three industry divisions contributing to the overall VoPI for manufacturing in May 2023 were the following:

- a. Manufacture of transport equipment with 61.8 percent share;
- b. Manufacture of food products with 48.4 percent share; and
- c. Manufacture of coke and refined petroleum products with 20.1 percent share.

The VoPI for **manufacture of food products** registered an annual increment of 11.6 percent in May 2023. This was slower than the April 2023 annual growth of 16.2 percent. In May 2022, the VoPI for manufacture of food products posted an annual rate of 0.4 percent. (Figure 3, and Tables 2 and 2a)

The slower annual growth of VoPI for manufacture of food products in May 2023 was mainly due to the slowdown observed in the annual rate of manufacture of dairy products industry group at 17.2 percent from 30.3 percent in the previous month. Other main drivers to the slower annual increase of VoPI for manufacture of food products were the slower annual increment in processing and preserving of meat at 11.5 percent during the period from 31.7 percent in the previous month, and the faster annual decline in processing and preserving of fruits and vegetables at -25.2 percent in May 2023 from -9.3 percent in April 2023. (Table 2a)

3. Value of Net Sales Index (VaNSI)

The VaNSI for manufacturing exhibited an annual increment of 3.4 percent in May 2023, after posting an annual growth of 0.02 percent in the previous month. In May 2022, VaNSI recorded a double-digit annual increase of 17.1 percent. (Figure 4, and Tables A and 3).

The faster annual increment of VaNSI in May 2023 was mainly brought about by the acceleration in the annual increase of manufacture of transport equipment industry division at 23.4 percent in May 2023 from 2.4 percent in the previous month. The manufacture of transport equipment contributed 47.0 percent to the uptrend of VaNSI of the manufacturing section in May 2023.

Other main contributors to the higher annual growth rate of VaNSI in May 2023 were manufacture of computer, electronic and optical products with slower annual drop of -15.0 percent during the period from -19.8 percent in the previous month, and manufacture of food products with a higher annual rate at 14.1 percent during the month from 11.3 percent in April 2023.

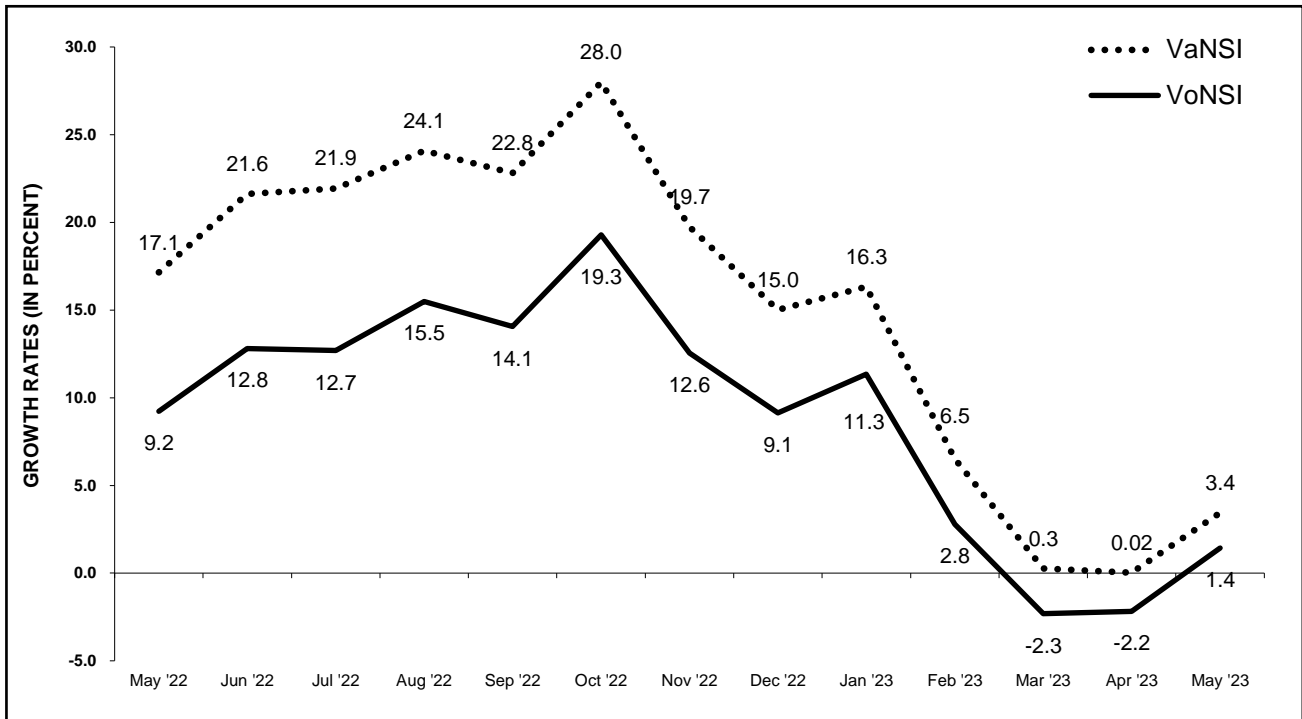
In addition, 13 of the remaining 19 industry divisions registered year-on-year increases in May 2023. Meanwhile, six industry divisions posted annual declines during the period. The highest annual drop was observed in manufacture of furniture at -22.3 percent. (Tables D and 3)



The top three industry divisions contributing to the overall VaNSI for manufacturing in May 2023 were the following:

- a) Manufacture of food products with 84.4 percent share;
- b) Manufacture of transport equipment with 55.1 percent share; and
- c) Manufacture of beverages with 13.2 percent share.

Figure 4. Year-on-Year Changes (%) in Net Sales Index for Total Manufacturing May 2022 - May 2023^p (2018 = 100)



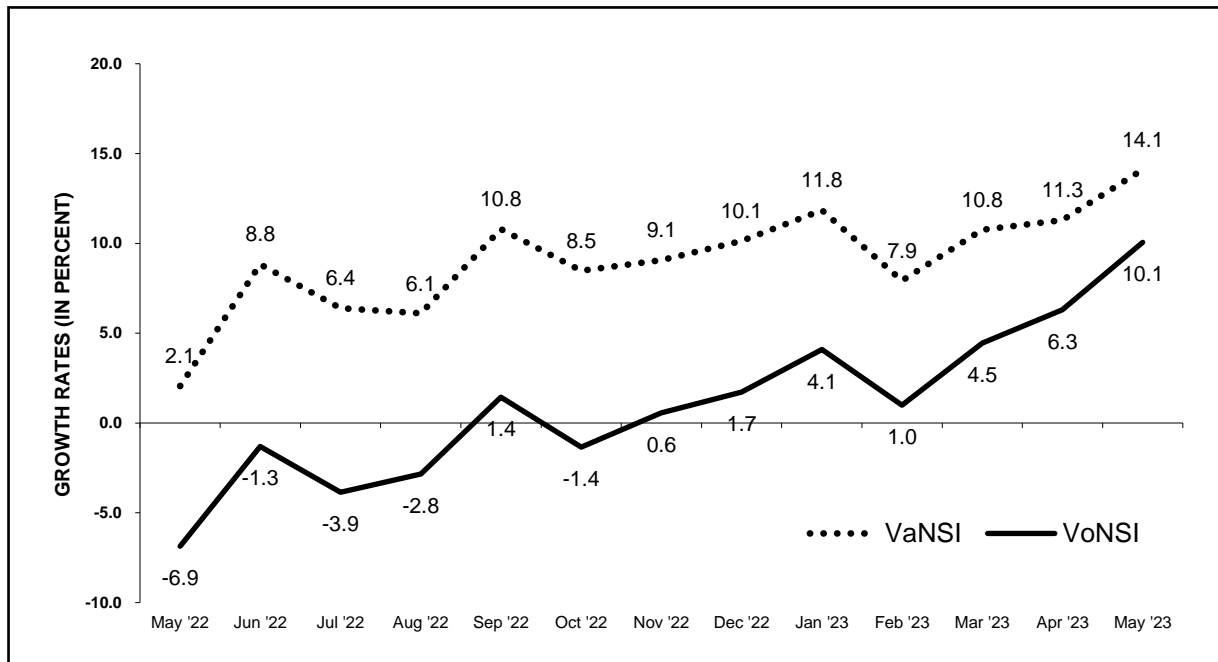
p - preliminary
 Source: Philippine Statistics Authority

The VaNSI for **manufacture of food products** posted a faster annual increment of 14.1 percent in May 2023 compared with its annual growth rates in April 2023 and in the same period in the previous year at 11.3 percent and 2.1 percent, respectively. (Figure 5, and Tables 3 and 3a)

The higher annual growth of VaNSI for manufacture of food products in May 2023 was mainly contributed by the annual increase in the manufacture of dairy products industry group at 0.1 percent in May 2023 from an annual drop of -4.0 percent in the previous month. Other primary contributors to the higher year-on-year increase of VaNSI for manufacture of food products were the slower annual declines noted in manufacture of vegetable and animal oils and fats at -33.4 percent in May 2023 from -41.0 percent in the previous month, and processing and preserving of fruits and vegetables at -1.3 percent during the period from -5.9 percent in April 2023. (Table 3a)

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Figure 5. Year-on-Year Changes (%) in Net Sales Index for Manufacture of Food Products: May 2022 - May 2023^p (2018 = 100)



p - preliminary

Source: Philippine Statistics Authority

4. Volume of Net Sales Index (VoNSI)

The VoNSI for manufacturing grew at an annual rate of 1.4 percent in May 2023, after exhibiting an annual decline of -2.2 percent in April 2023. In May 2022, VoNSI posted an annual increase of 9.2 percent. (Figure 4, and Tables A and 4)

The annual increase of VoNSI in May 2023 was primarily brought about by the higher annual increment of manufacture of transport equipment industry division at 26.9 percent in May 2023 from 4.5 percent in April 2023. This industry division contributed 48.1 percent to the uptrend of VoNSI of the manufacturing sector in May 2023.

Other main contributors to the annual upturn of VoNSI in May 2023 were manufacture of food products, which accelerated to 10.1 percent annual increase during the period from 6.3 percent in the previous month, and manufacture of computer, electronic and optical products, which had a slower annual decrease of -19.8 percent in May 2023 from -23.3 percent in the previous month.

Furthermore, 11 of the 19 remaining industry divisions exhibited annual upturns during the period. Meanwhile, eight industry divisions posted annual declines in May 2023. The manufacture of furniture posted the fastest annual drop of -25.9 percent during the period. (Tables E and 4)

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The top three industry divisions contributing to the overall VoNSI for manufacturing in May 2023 were the following:

- a. Manufacture of transport equipment with 106.7 percent share;
- b. Manufacture of food products with 101.4 percent share; and
- c. Manufacture of coke and refined petroleum products with 22.6 percent share.

The VoNSI for **manufacture of food products** registered a faster annual increment of 10.1 percent in May 2023 from an annual growth of 6.3 percent in April 2023. In May 2022, VoNSI posted an annual drop of -6.9 percent. (Figure 5, and Tables 4 and 4a)

The increase in the year-on-year growth of the VoNSI for manufacture of food products in May 2023 was primarily driven by the slower annual decrement in the manufacture of dairy products industry group at -5.2 percent during the period from -10.7 percent in the previous month. Other primary contributors to the year-on-year upturn of VoNSI for manufacture of food products were manufacture of vegetable and animal oils and fats with a slower annual drop of -25.4 percent during the month from -35.0 percent in April 2023, and manufacture of other food products, which registered a higher annual growth of 17.3 percent in May 2023 from 15.5 percent in the previous month. (Table 4a)



CLAIRE DENNIS S. MAPA, PhD
Undersecretary
National Statistician and Civil Registrar General

DGLDP/RCL/JPCS

Table B. Year-on-Year Growth Rates (%) of VaPI by Industry Division
 April 2023^r and May 2023^p
 (2018 =100)

INDUSTRY DIVISION	April 2023 ^r	May 2023 ^p
With Positive Annual Growth Rates		
1. Manufacture of food products	21.6	15.7
2. Manufacture of transport equipment	34.7	34.1
3. Manufacture of electrical equipment	19.5	54.2
4. Manufacture of coke and refined petroleum products	12.7	11.3
5. Manufacture of beverages	5.2	9.2
6. Other manufacturing and repair and installation of machinery and equipment	29.6	36.0
7. Manufacture of basic metals	18.8	6.5
8. Manufacture of other non-metallic mineral products	17.9	6.0
9. Printing and reproduction of recorded media	49.6	43.1
10. Manufacture of wood, bamboo, cane, rattan articles and related products	18.1	9.1
11. Manufacture of paper and paper products	-5.6	2.6
12. Manufacture of rubber and plastic products	-0.9	1.1
13. Manufacture of textiles	-2.2	7.5
With Negative Annual Growth Rates		
14. Manufacture of basic pharmaceutical products and pharmaceutical preparations	-2.7	-0.8
15. Manufacture of leather and related products, including footwear	-12.5	-11.7
16. Manufacture of furniture	-15.2	-28.0
17. Manufacture of machinery and equipment except electrical	-20.2	-11.6
18. Manufacture of wearing apparel	-31.8	-22.0
19. Manufacture of tobacco products	-15.8	-16.7
20. Manufacture of fabricated metal products, except machinery and equipment	-12.6	-16.8
21. Manufacture of chemical and chemical products	-33.3	-23.5
22. Manufacture of computer, electronic and optical products	-9.4	-7.1

p - preliminary, r - revised

Table C. Year-on-Year Growth Rates (%) of VoPI by Industry Division
 April 2023^r and May 2023^p
 (2018 =100)

INDUSTRY DIVISION	April 2023 ^r	May 2023 ^p
With Positive Annual Growth Rates		
1. Manufacture of transport equipment	37.6	37.9
2. Manufacture of food products	16.2	11.6
3. Manufacture of coke and refined petroleum products	15.5	16.2
4. Manufacture of electrical equipment	19.2	53.7
5. Manufacture of basic metals	24.5	12.1
6. Other manufacturing and repair and installation of machinery and equipment	26.6	33.1
7. Manufacture of beverages	-0.5	3.9
8. Printing and reproduction of recorded media	47.7	40.1
9. Manufacture of other non-metallic mineral products	14.5	4.6
10. Manufacture of wood, bamboo, cane, rattan articles and related products	16.9	8.0
11. Manufacture of textiles	-2.4	8.2
With Negative Annual Growth Rates		
12. Manufacture of basic pharmaceutical products and pharmaceutical preparations	-2.1	-0.9
13. Manufacture of rubber and plastic products	-3.8	-0.7
14. Manufacture of paper and paper products	-9.6	-1.9
15. Manufacture of leather and related products, including footwear	-17.0	-16.7
16. Manufacture of furniture	-20.0	-31.3
17. Manufacture of wearing apparel	-33.9	-25.5
18. Manufacture of machinery and equipment except electrical	-21.4	-14.1
19. Manufacture of tobacco products	-19.1	-20.9
20. Manufacture of fabricated metal products, except machinery and equipment	-16.6	-20.4
21. Manufacture of chemical and chemical products	-32.2	-21.2
22. Manufacture of computer, electronic and optical products	-13.4	-12.3

p - preliminary, r - revised

Table D. Year-on-Year Growth Rates (%) of VaNSI by Industry Division
 April 2023^r and May 2023^p
 (2018 =100)

INDUSTRY DIVISION	April 2023 ^r	May 2023 ^p
With Positive Annual Growth Rates		
1. Manufacture of food products	11.3	14.1
2. Manufacture of transport equipment	2.4	23.4
3. Manufacture of beverages	8.7	7.0
4. Manufacture of other non-metallic mineral products	8.5	6.5
5. Manufacture of coke and refined petroleum products	12.6	2.9
6. Manufacture of electrical equipment	2.4	11.2
7. Manufacture of wood, bamboo, cane, rattan articles and related products	17.6	16.0
8. Other manufacturing and repair and installation of machinery and equipment	14.2	13.0
9. Manufacture of fabricated metal products, except machinery and equipment	6.1	4.1
10. Manufacture of basic pharmaceutical products and pharmaceutical preparations	-0.9	7.0
11. Manufacture of rubber and plastic products	6.5	3.0
12. Manufacture of leather and related products, including footwear	-16.3	20.4
13. Manufacture of textiles	-5.5	17.0
14. Printing and reproduction of recorded media	3.2	6.0
15. Manufacture of machinery and equipment except electrical	-1.9	1.1
With Negative Annual Growth Rates		
16. Manufacture of tobacco products	-1.1	-2.4
17. Manufacture of paper and paper products	-8.6	-5.1
18. Manufacture of furniture	-13.8	-22.3
19. Manufacture of wearing apparel	-20.4	-17.9
20. Manufacture of basic metals	-3.8	-5.1
21. Manufacture of chemical and chemical products	-19.1	-12.7
22. Manufacture of computer, electronic and optical products	-19.8	-15.0

p - preliminary, r - revised

Table E. Year-on-Year Growth Rates (%) of VoNSI by Industry Division
 April 2023^r and May 2023^p
 (2018 =100)

INDUSTRY DIVISION	April 2023 ^r	May 2023 ^p
With Positive Annual Growth Rates		
1. Manufacture of transport equipment	4.5	26.9
2. Manufacture of food products	6.3	10.1
3. Manufacture of coke and refined petroleum products	15.4	7.4
4. Manufacture of other non-metallic mineral products	5.4	5.1
5. Manufacture of electrical equipment	2.1	10.8
6. Manufacture of wood, bamboo, cane, rattan articles and related products	16.4	14.8
7. Manufacture of beverages	2.8	1.8
8. Other manufacturing and repair and installation of machinery and equipment	11.6	10.6
9. Manufacture of basic pharmaceutical products and pharmaceutical preparations	-0.2	6.9
10. Manufacture of textiles	-5.7	17.7
11. Manufacture of leather and related products, including footwear	-20.7	13.6
12. Manufacture of rubber and plastic products	3.4	1.2
13. Printing and reproduction of recorded media	1.8	3.7
With Negative Annual Growth Rates		
14. Manufacture of basic metals	0.8	-0.2
15. Manufacture of fabricated metal products, except machinery and equipment	1.3	-0.4
16. Manufacture of machinery and equipment except electrical	-3.5	-1.8
17. Manufacture of tobacco products	-4.9	-7.3
18. Manufacture of furniture	-18.6	-25.9
19. Manufacture of paper and paper products	-12.5	-9.3
20. Manufacture of wearing apparel	-22.8	-21.6
21. Manufacture of chemical and chemical products	-17.7	-10.0
22. Manufacture of computer, electronic and optical products	-23.3	-19.8

p - preliminary, r - revised



TECHNICAL NOTES Monthly Integrated Survey of Selected Industries (MISSI)

I. Introduction

I.1. Background of the Survey

The Monthly Integrated Survey of Selected Industries (MISSI) is one of the designated statistical activities undertaken by the Philippine Statistics Authority (PSA). The survey gathers monthly data on employment, compensation, production, net sales, inventories, and capacity utilization from manufacturing establishments.

The indicators generated from the MISSI are Value of Production Index (VaPI), Volume of Production Index (VoPI), Value of Net Sales Index (VaNSI), Volume of Net Sales Index (VoNSI) and Average Capacity Utilization Rate of the manufacturing section.

I.2. Objectives

The MISSI provides timely flash indicators that monitor the performance of growth-oriented industries in the manufacturing section. The indicators generated by the MISSI are in the form of indices and growth rates of value of production and net sales data. Indices on volume of production and volume of net sales are derived using the producer price index as deflator.

I.3. Historical Information on the Survey

The predecessor of the MISSI is the Survey of Key Enterprises in Manufacturing or SKEM. Through the years of its operation, the SKEM and later on the MISSI continued to utilize the shuttle type questionnaire for data collection.

The MISSI milestones are shown below:

- 1981 The SKEM started as a project of the National Accounts Staff (NAS) of the National Economic and Development Authority (NEDA). Indices generated from the SKEM had 1981 as base period.
- 1986 The responsibility for the SKEM was transferred to the Economic Census Branch of the National Census and Statistics Office (National Statistics Office or NSO).
- 1988 The SKEM was reassigned to the Manufacturing Division of the same agency. Rebasement of the SKEM series to 1985 was completed during the year.



1997 Following the reorganization of the NSO, responsibility of the SKEM was again transferred to the newly created Economic Indices and Indicators Division (EIID).

Integration of the SKEM and Department of Trade and Industry's Monthly Industrial Survey (MIS) was finalized and the new survey was renamed as MISSI. The MISSI expanded to include additional information like inventory and capacity utilization. Rebasings of the MISSI series to 1994 also started.

2001 Responsibility of the MISSI was again transferred to the Manufacturing Section of the Industry Statistics Division.

MISSI data series with 1994 as the new base period was released during the year, in parallel with the 1985-based series. The 1994-based series had January 1998 as its earliest series.

A pre-test survey on the Current Survey of Production (CSP) was conducted as a part of the "Study on the Development of Industrial Statistics in the Philippines" by a joint work of JICA (Japan International Cooperation Agency) Study Team and the NSO. The CSP was a field trial of basic design of commodity-based and volume-based survey for the manufacturing industry, which was expected to further improve the existing MISSI. The CSP was later renamed MSP (Monthly Survey on Production).

2002 The 1985-based MISSI data series was discontinued beginning January.

The plan to improve the methodology in the calculation of the monthly industrial production indices, specifically the volume of production index (VoPI) using the direct method, the NSO conducted the MSP, which aimed to collect commodity-based and volume-based data on production, sales and inventory.

2005 Rebasings of the MISSI series to base year 2000 started.

2006 The MSP was discontinued due to budgetary constraints.

2007 MISSI data series with 2000 as the new base period was released in August, in parallel with the 1994-based series.

New indicators in the 2000-based series were generated. These were Value of Net Sales Index (VaNSI) and Volume of Net Sales Index (VoNSI). In the 1994-based series, only year-on-year and month-on-month growth rates were generated from the Net Sales value and volume data.

2008 The 1994-based MISSI data series was discontinued beginning January. Only the 2000-based series was published.

- 2011 Rebasing of the MISSI series to base year 2006 started. This is in accordance to NSCB Resolution No. 2, series of 2009 which approves the synchronized rebasing of the price indices to base year 2006.
- 2014 Rebasing of the MISSI series to base year 2006 was halted. Instead, rebasing of the MISSI series to base year 2012 started since the results of the 2012 Census of Philippine Business and Industry (CPBI) was available as source of the weights.
- 2015 The use of geometric average of short-term value relatives of responding sample establishments was used as the imputation technique for the missing data of non-responding samples.
- 2020 Rebasing of the MISSI series to base year 2018 started and was approved by the PSA Board last 21 December 2020. The index computation methodology was changed, Chained Paasche-type index computation was used in the higher aggregates.

The computation of the average capacity utilization will use a simpler and direct estimation that takes into account the impact of establishments that are temporarily closed during the reference period to the production and sales of the manufacturing section.

I.4. Scope and Coverage

MISSI is a nationwide undertaking that covers all manufacturing establishments confined to the formal section of the economy. The formal sector of the economy consists of the following:

1. Corporations and partnership, regardless of employment size;
2. Cooperatives and foundations, regardless of employment size;
3. Single proprietorships with branches, regardless of employment size; and
4. Single proprietorship with no branches but with total employment (TE) of 10 and over.

Hence, the MISSI covered all establishments regardless of employment size, except those establishments with:

1. Legal Organization of single proprietorship (LO=1), and
2. Economic Organization of single establishment (EO=1), and
3. TE of less than 10.

The scope and coverage for MISSI are all establishments with EO=1 (Single establishment), 2 (Branch only) and 3 (Establishment and main office) engaged in manufacturing activities as classified in the 2009 Philippine Standard Industrial Classification (PSIC).

I.5. Industry Coverage

The MISSI utilizes the 2009 PSIC to classify industry divisions and industry groups. Twenty-two industry divisions of the 2009 PSIC were formed to comprise the industry coverage of the MISSI. The table below presents the industry coverage of MISSI by 2009 PSIC code.

2009 PSIC CODE	INDUSTRY DESCRIPTION
C10	Manufacture of food products*
C11	Manufacture of beverages
C12	Manufacture of tobacco products
C13	Manufacture of textiles
C14	Manufacture of wearing apparel
C15	Manufacture of leather and related products, including footwear
C16	Manufacture of wood, bamboo, cane, rattan articles and related products*
C17	Manufacture of paper and paper products
C18	Printing and reproduction of recorded media
C19	Manufacture of coke and refined petroleum products
C20	Manufacture of chemical and chemical products*
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22	Manufacture of rubber and plastic products*
C23	Manufacture of other non-metallic mineral products*
C24	Manufacture of basic metals*
C25	Manufacture of fabricated metal products, except machinery and equipment*
C26	Manufacture of computer, electronic and optical products*
C27	Manufacture of electrical equipment*
C28	Manufacture of machinery and equipment except electrical*
C29,C30	Manufacture of transport equipment*
C31	Manufacture of furniture
C32,C33	Other manufacturing

**Industry divisions categorized into industry groups*

II. Data Collection

II.1. Data Collection

Distribution and collection of MISSI questionnaires will be done according to a timetable set. Distribution is done at the beginning of each year through personal visit by a PSA field staff to the sample establishments located in the provinces and cities nationwide. Collection of accomplished questionnaires is done on or before the 23rd day after each reference month while submission of data files is done on or before the 25th day after each reference month.

II.2. Survey Instrument

The MISSI uses a shuttle-type of questionnaire. This is the type of survey instrument that is administered to respondents in order to collect data at frequent intervals of time to provide a running account of past responses. The questionnaire also includes definition of terms and specific instructions in filling-out the questionnaire to assist the respondent in understanding the questions and for ease in accomplishment. Furthermore, the questionnaire design ensures and enhances the consistency and accuracy in reporting past data.

II.3. Data Items

The key data items of MISSI includes monthly figures on employment, compensation, production, net sales/revenue, inventories of raw materials, finished products and work-in-progress, and capacity utilization of the establishment. A running account of the monthly figures from January to December of the year for all the data items for an establishment are in one questionnaire.

III. Methodology

III.1. Sampling Frame

The sources of the sampling frame were all manufacturing establishments of the 2019 and 2020 ASPBI with Total Employment (TE) of 20 and over whose characteristics were updated using the List of Establishments (LE).

III.2. Sample Selection Procedure

MISSI utilize a cut-off sampling design. “Cut-off sampling is a sampling procedure in which a predetermined threshold is established with all units in the universe at or above the threshold being included in the sample and all units below the threshold being excluded. The threshold is usually specified in terms of the size of some known relevant variable. In the case of establishments, size is usually defined in terms of employment or output” (United Nations, Producer Price Index Manual, 2004, p.650). For the MISSI, the threshold is based on value of production. Value of production is equal to the value of products sold adjusted for the changes in inventories of finished products and work-in-progress (ending less beginning). The establishments’ value of production was computed from the 2019 and 2020 ASPBI and was used as basis in the selection of samples.

The responding sample establishments of the 2019 and 2020 ASPBI with TE 20 and over were grouped according to the 22 industry divisions and 48 industry groups. Value of production by establishment were computed and arrayed from largest to smallest value of production within each industry group or division. Concentration ratios by industry group or division were computed to determine the industry leaders

or establishments that were within the top 50 percent to 100 percent contributors to value of production by industry group or division. These industry leaders were taken as samples for the current year.

All selected samples for MISSI will also be taken as samples for the Producer Price Survey.

III.3. Estimation Procedure

The VaPI and VaNSI will utilize the Paasche-type method of index computation where the basic data of weight computation are the value of production and sales, respectively. The sources of these data are the Census of Philippine Business and Industry (CPBI) for the base year and the Annual Survey of Philippine Business and Industry (ASPBI) for the succeeding years until the next rebasing.

III.3.1. Weights Computation

The weight of the industry group is the percent share of the industry to the total value of production for the industry division. The sum of the weights of all industry groups within an industry division is equal to one (1). The weight of the industry division is the percent share of the industry to the total value of production for the manufacturing section. The sum of the weights of all industry divisions is equal to one (1). The same methodology is used in the computation of the weights for sales, but instead of value of production, data on sales is used.

III.3.2. Index Computation

The indicators generated from the MISSI are Value of Production Index (VaPI), Volume of Production Index (VoPI), Value of Net Sales Index (VaNSI), Volume of Net Sales Index (VoNSI) and Average Capacity Utilization Rate of the manufacturing section.

III.3.2.1 Value of Production Index (VaPI)

Value of Production Index (VaPI) measures the average change over time of the value of production of the manufacturing section relative to a base period.

III.3.2.1.a. Computation of Index for Industry Group Level

Monthly Index at the base year

$$VaPI_{ijm} = \frac{V_{ijm}}{V_{ij0}} \times 100$$

where:

- $VaPI_{ijm}$ = VaPI for industry group j in industry division i at current month m
- V_{ijm} = total value of production for all sample establishments of industry group j in industry division i at current month m of the base year
- V_{ij0} = average monthly value of production at the base year

Monthly Index after the base year

$$VaPI_{ijm} = \frac{V_{ijm}}{V_{ij(m-1)}} \times VaPI_{ij(m-1)}$$

where:

- $VaPI_{ijm}$ = VaPI for industry group j in industry division i at current month m
- $VaPI_{ij(m-1)}$ = VaPI for industry group j in industry division i for the previous month m-1
- V_{ijm} = total value of production for all sample establishments of industry group j in industry division i at current month m
- $V_{ij(m-1)}$ = total value of production for all sample establishments of industry group j in industry division i for the previous month m-1

III.3.2.1.b. Computation of Index for Industry Division Level

$$VaPI_{im} = \frac{1}{\sum_{j=1}^{p_i} \left(W_{ij} \times \frac{1}{VaPI_{ijm}} \right)}$$

where:

- $VaPI_{im}$ = VaPI for industry division i at current month m
- $VaPI_{ijm}$ = VaPI for industry group j in industry division i at current month m
- W_{ij} = weight for industry group j in industry division i
- p_i = number of industry groups in industry division i

Note: Industry divisions with no industry groups uses the same computation of index as that for industry group level.

III.3.2.1.c. Computation of Index for Total Manufacturing

$$VaPI_m = \frac{1}{\sum_{i=1}^{22} \left(W_i \times \frac{1}{VaPI_{im}} \right)}$$

where:

- $VaPI_m$ = VaPI for the current month m
- $VaPI_{im}$ = VaPI for industry division i at current month m
- W_i = weight for industry division i

III.3.2.2 Value of Net Sales Index (VaNSI)

Value of Net Sales Index (VaNSI) measures the average change over time of the value of sales of the manufacturing section relative to a base period.

The same methodology as the VaPI is used to compute the Value of Net Sales Index (VaNSI).

III.3.2.3 Volume of Production Index (VoPI)

Volume of Production Index (VoPI) measures the average change over time of the volume of production of the manufacturing section relative to a base period. This is a derived indicator with PPI as the deflator.

III.3.2.3.a. Computation of Index for Industry Group Level

$$VoPI_{ijm} = \frac{VaPI_{ijm}}{PPI_{ijm}}$$

where:

- $VoPI_{ijm}$ = VoPI for industry group j in industry division i at current month m
- $VaPI_{ijm}$ = VaPI for industry group j in industry division i at current month m
- PPI_{ijm} = PPI for industry group j in industry division i at current month m

III.3.2.3.b. Computation of Index for Industry Division Level

$$VoPI_{im} = \frac{VaPI_{im}}{PPI_{im}}$$

where:

- $VoPI_{im}$ = VoPI for industry division i at current month m
- $VaPI_{im}$ = VaPI for industry division i at current month m
- PPI_{im} = PPI for industry division i at current month m

III.3.2.3.c. Computation of Index for Total Manufacturing

$$VoPI_m = \frac{VaPI_m}{PPI_m}$$

where:

- VoPI_m = VoPI for total manufacturing at current month m
- VaPI_m = VaPI for total manufacturing at current month m
- PPI_m = PPI for total manufacturing at current month m

III.3.2.4 Volume of Net Sales Index (VoNSI)

Volume of Net Sales Index (VoNSI) measures the average change over time of the volume of sales of the manufacturing section relative to a base period. This is a derived indicator using the PPI as deflator.

The same methodology as VoPI is used to compute the Volume of Net Sales Index (VoNSI).

III.3.2.5 Capacity Utilization (CU) Rate

Capacity Utilization Rate is the ratio of total output to the maximum rated capacity of the establishment.

III.3.2.5.a. Computation of Average CU for Industry Group Level

$$AveCU_{ijm} = \frac{\sum_{c=1}^k (X_c \times f_{cijm})}{n_{rijm} + n_{tijm}}$$

where:

- AveCU_{ijm} = average capacity utilization rate for industry group j in industry division i at current month m
- X_c = midpoint of capacity utilization rate at interval c
- f_{cijm} = frequency of responding samples at interval c for industry group j in industry division i at current month m
- n_{rijm} = total number of responding (good) establishments for industry group j in industry division i at current month m
- n_{tijm} = total number of temporarily closed/closed establishments for industry group j in industry division i at current month m
- k = total number of capacity utilization intervals

III.3.2.5.b. Computation of Average CU for Industry Division Level

$$\text{AveCU}_{im} = \sum_{i=1}^{p_i} (W_{ij} \times \text{AveCU}_{ijm})$$

where:

- AveCU_{im} = average capacity utilization rate for industry division i at current month m
- W_{ij} = weight for industry group j in industry division i
- AveCU_{ijm} = average capacity utilization rate for industry group j in industry division i at current month m
- p_i = number of industry groups in industry division i

III.3.2.5.c. Computation of Average CU for Total Manufacturing

$$\text{AveCU}_m = \sum_{i=1}^{22} (W_i \times \text{AveCU}_{im})$$

where:

- AveCU_m = average capacity utilization rate for total manufacturing at current month m
- W_i = weight for industry division i
- AveCU_{im} = average capacity utilization rate for industry division i at current month m

III.4. Imputation Technique

Imputation is done for sample establishments that are in operation during the reference period but no response during the release date. Results are revised accordingly when the actual data are received, and these revisions are reflected in the next release.

III.5 Rebasing

Starting with the January 2021 reference month, production and sales indices from the MISSI are rebased to 2018, from 2000 base period.

The major changes in the rebasing are (1) the industry structure or classification and (2) the weights which measure the relevance of the industries. The industry classification for the 2018-based series follows the 2009 Philippine Standard Industry Classification (PSIC), while the 2000-based series adopted the 1994 PSIC. For the rebased series, the weights at the base year were computed based on the final results of the 2018 Census of Philippine Business and Industry (CPBI). The

results of the Annual Survey of Philippine Business and Industry (ASPBI) will be used to update the weights annually until the next rebasing.

Other changes are on the methodology of index computation and on the estimation of average capacity utilization rate which are discussed in the next section.

IV. Concepts and Definitions of Terms

Total employment is the total number of persons who work in or for the establishment during pay periods nearest the 15th of each reference month. Total employment consists of working owners and/or unpaid workers, and paid officials and workers. Workers who are working on a sub-contractual arrangement with the establishment are excluded in employment. The payment for this arrangement is accounted as industrial services under total cost. Total cost, however, is not being collected in MISSI.

1. Working owners are owners who are actively engaged in the management of the establishment but do not receive regular pay, i.e., not included in the payroll.
2. Unpaid workers are persons working for at least 1/3 of the working time normal to the establishment who do not receive regular pay. It includes all apprentices and learners without regular pay.
3. Paid employees are full-time or part-time workers, on sick or maternity leave and on paid vacation or holiday, and employees working away from this establishment paid by and under the control of this establishment. Paid employees are managers and executives, production workers, and other employees.
 - a. Managers and executives refer to all salaried directors, managers, executives, administrative and other officials of the same category. Working owners receiving regular pay should be included in this category.
 - b. Production workers refer to all employees directly engaged in the production activities of the establishment. Included are manual workers, clerical personnel, working foreman and seasonal workers who fabricate, process, assemble, construct, install, etc. Excluded are supervisory employees above working foreman level.
 - c. Other employees refer to all other employees not included above.

Total compensation refers to the sum of salaries and wages before deductions of employees' SSS contribution, withholding taxes, etc. and employer's contribution to SSS/GSIS, Philhealth, PAG-IBIG and other similar schemes.

1. Salaries and Wages consist of basic pay, overtime pay, cost-of-living allowances, vacation and sick leave pay, commissions, bonuses, dismissal or

retirement pay, back pays and other benefits prior to deduction of employees' SSS/GSIS contribution, PAG-IBIG, Philhealth, withholding taxes and the like.

2. Total Employer's contribution to SSS/GSIS, ECC, etc. refers to all payments made by the employer on behalf of his employees to SSS/GSIS, ECC, PAG-IBIG, Philhealth, pension and similar schemes.

Total Value of Production is the value of all goods produced and work-in-progress during the reference month. Valuation is at producer prices, that is, the unit price (ex-plant) of a product or commodity as it leaves the establishment of the producer. It includes any indirect tax paid by the producer less any subsidies on products received by the producer.

1. Value of production for domestic market refers to products/by products produced by the establishment for another local establishment of a different enterprise. i.e., producer, wholesaler and retailer.
2. Value of production for direct exports refers to products/by products produced and shipped directly outside the country by the establishment.
3. Value of production sold to exporters refers to products/by products produced locally to exporters by the establishment.

Total Revenue/ Sales is the total cash received and receivables for goods sold and services rendered.

1. Sales from manufacturing activity includes the value of shipments of products manufactured by the establishment whether or not they were produced during the reference month. Inter-plant transfer or goods transferred from one establishment to another of the same enterprise should be valued as though sold. Valuation of goods shipped is at ex-plant price (producer price) and net of discounts, allowances and returned goods.
2. Sales to domestic market refers to sales of products/by products of the establishment to another establishment of a different enterprise i.e. producer, wholesaler and retailer.
3. Direct exports refers to products sold and shipped directly outside the country by the establishment.
4. Sales to exporters refers to the products/by products sold locally to exporters by the establishment.
5. Other Income includes income from activities other than manufacturing, such as investment interest, foreign exchange gains, rent income, and profit from the sale of non-inventory assets.

Inventory of finished product is the value of stocks of goods owned by or under the control of the establishment as of a fixed date of the reference month which are ready for shipment, regardless of where the stocks are located.

Inventory of work-in-progress is the value of stocks of all materials which have been partially processed by the establishment as of a fixed date of the reference month, but

which are not usually sold or turned over to other establishment without further processing.

Inventory of raw materials is the value of stocks of raw materials as of a fixed date of the reference month. It includes materials and fuels that enter the product.

Capacity utilization is the ratio of total output to the maximum rated capacity of the establishment.

1. Rated capacity refers to the largest volume of output possible at which the factory can operate with an acceptable degree of efficiency taking into consideration unavoidable losses of productive time (i.e., vacations, holidays, and repairs to equipment) and availability of raw materials.

V. Dissemination of Results and Revision

Web-posting of the Press Release of MISSI shall be done every 37th day after each reference month. Statistical tables are also posted in OpenSTAT.

Imputed values are revised upon receipt of actual data for inclusion in the revised indices.

VI. Citation

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VII. Contact Information

John Paul C. Sacop
(Supervising Statistical Specialist)
Officer-in-Charge
Industry Statistics Division
(632) 8376-2060
mfg.staff@psa.gov.ph
isd.staff@psa.gov.ph

For data request, you may contact the:
Knowledge Management and Communications Division
(632) 8462-6600 local 839
info@psa.gov.ph