

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**NATIONAL STATISTICS OFFICE
REPUBLIC OF THE PHILIPPINES**

**FINAL REPORT
FOR
THE STUDY
ON
THE DEVELOPMENT OF INDUSTRIAL STATISTICS
IN
THE REPUBLIC OF THE PHILIPPINES
(SUMMARY)**

MARCH 2002

UNICO INTERNATIONAL CORPORATION



Based on the results of the Study conducted as a joint undertaking with the JICA Study Team, the National Statistics Office (NSO) will start the Monthly Survey of Production (MSP). On March 6, 2002 the relevant government agencies, industrial associations, and target establishments were invited to a launching program of the MSP. The NSO presented the scheme and the objectives of the MSP, and asked for the cooperation to the survey.

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Abbreviation

AFTA	:	Asian Free Trade Agreement
ASE	:	Annual Survey of Establishments
ASEAN	:	Association of Southeast Asian nations
ASPBI	:	Annual Survey of Philippine Business and Industry
ATE	:	Actual/Average Total Employment
BOI	:	Board of Investment
BTRCP	:	Bureau of Trade Regulation and Consumer Protection
CALABARZON:		
		Cavite, Laguna, Batangas, Rizal and Quezon
CAMPI	:	Chamber of Automotive Manufactures of the Philippines Inc.
CBU	:	Completely Built-Up
CD	:	Compact Disc
CDP	:	Car Development Program
CKD	:	Completely Knocked Down
CONGEP:		Confederation of Garment Exporters of the Philippines
CPBI	:	Census of Philippine Business and Industry
CVDP	:	Commercial Vehicle Development Program
DE	:	Department of Energy
DOA	:	Department of Agriculture
DTI	:	Department of Trade and Industry
EPZ	:	Export Processing Zone
GDP	:	Gross Domestic Product
GTEB	:	Garments and Textile Export Board
IMF	:	International Monetary Fund
JICA	:	Japan International Cooperation Agency
LTO	:	Land Transportation Office
MISSI	:	Monthly Integrated Survey of Selected Industries
MSP	:	Monthly Survey of Production
MVDP	:	Motor Vehicle Development Program
NCR	:	National Capital Region (Metro-Manila)
NEDA	:	National Economic and Development Authority
NSC	:	National Steel Corporation
NSCB	:	National Statistical Coordination Board

NSO	:	National Statistics Office
NTA	:	National Tobacco Association
OEM	:	Original Equipment Manufacturing
PCMC	:	Philippine Cement Manufacturers Corporation
PEZA	:	Philippine Economic Zone Authority
PPI	:	Producer's Price Index
PPS	:	Producer's Price Survey
PSA	:	Philippine Statistical Association, Inc.
PSCC	:	Philippine Standard of Commodity Classification
PSIC	:	Philippine Standard of Industrial Classification
QSME	:	Qualification Study for Manufacturing Establishments
QSPBI	:	Quarterly Survey of Philippine Business and Industry
SDDS	:	Specific Data Disclosure Standard
SEC	:	Securities and Exchange Commission
SNA	:	System of National Accounts
VaPI	:	Value of Production Index
VoPI	:	Volume of Production Index
WPI	:	Wholesale Price Index
WTO	:	World Trade Organization

Chapter 1 Background of the Study

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Industrial statistics on the status of production, sales, and inventory by commodity and by volume are vital economic data used to analyze and assess the economic trends of specific industrial sectors at a specific point of time or during a specific period, and provide indicators indispensable for government to develop industrial as well as macroeconomic policies. They are also widely used by corporate managers as a basic tool for grasping business trends and making business plans, as well as by investors, researchers and analysts in and outside the country in making decisions on investment and business strategies.

In order to make industrial statistics valid for these purposes, they must be reliable, timely and compatible for international comparison, thereby, in order to become a useful tool to cope with the globalization of the economy. The Philippines are no exception to this and are urgently required to develop industrial statistics and flash indicators that meet the needs of the time.

Under these circumstances, the Philippine Government requested the Japanese Government to conduct the “Study on Development of Industrial Statistics.” The Japan International Cooperation Agency (hereinafter referred to as “JICA”) mission that was sent to the Philippines in February 2000 confirmed that there were growing needs, among both the public and private sectors, for industrial statistics and indices by a **commodity and volume based survey of production on a monthly basis** (hereinafter referred to as “Monthly Survey of Production (MSP)”).

The National Statistics Office of the Philippines (hereinafter referred to as “NSO”) has been conducting a monthly production survey called the Monthly Integrated Survey for Selected Industries (hereinafter referred to as “MISSI”) for the manufacturing sector since 1998. However, the current MISSI does not serve as a commodity and volume based survey of production. Both Governments agreed on the improvement of the current MISSI for conversion to the commodity and the volume based survey as the prime objective of the Study. In June 2000, JICA sent a preliminary study mission for the finalization of the details of the Study with the Philippine Government.

Chapter 2 Objectives of the Study

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The Study has the following objectives:

- (1) Improvement of the current MISSI for conversion to the commodity and volume based survey (MSP);
- (2) Development of new industrial indices, including monthly production, sales and inventory indices, generated by data from the MSP; and
- (3) Technology transfer to the counterpart of NSO through the implementation of the Study by a joint work of the study team and the counterpart team.

Chapter 3 Two Methods for Development of Industrial Statistics and Improvement of MISSI

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3.1 Direct Method and Indirect Method

While industrial censuses and annual surveys are primarily designed to ascertain the industrial structure, monthly surveys are conducted to produce short-term statistics and indices that are used to depict the current state of the economy and to determine the direction of the economy in the context of business cycles, thereby to allow the policymaker or the planner to devise appropriate and timely action.

In order to grasp the economic trend, there are two variables, namely being price and volume. As for price, various price surveys and price indicators are provided. In principle, industrial statistics used to determine the current state and direction of the economy should be volume-based, which are free from price implication. There are two methods for the development of industrial statistics. Firstly, volume data of individual commodities for each industrial sector are directly obtained by field surveys for statistics and the generation of industrial (volume) indices, which is called the direct method. Secondly, there is an indirect method under which sector-wise industrial (volume) indices are estimated from two types of indices representing the nominal value of production and relevant price index. Volume index by the indirect method is the same as what is called the production value index on a constant price.

The direct method is a global standard method used in many countries. It focuses on supply and demand for individual commodities, and therefore represents the production status of specific commodities. The grouping of commodities, according to an applicable industrial classification standard, forms the basis of calculating industrial indices by commodity groups. Note that only volume-based production data are used to produce these indices, and no price data is required. Theoretically, industrial statistics and (volume) indices by the direct method are more accurate and reliable than those by the indirect method since the former do not involve any price factors.

On the other hand, the indirect method features a relatively easy method to determine sector-specific industrial indices. Instead of relying on data of individual commodities, it depicts performance of industrial sectors by value and price indices. As far as the value and price data are available, sector indices by the indirect method

can be divided to serve as commodity group indices. As an exceptional case, the indirect method is employed to estimate production indices of those commodities for which volume data is difficult to obtain under the direct method. The indirect method requires two types of data, value of production and price, while it does not need volume data.

3.2 Method Selection

The choice of the direct or indirect method for development of industrial statistics and indices depends largely on the purpose of their use. At the same time, the data reliability and costs required for implementation become an important consideration.

In supposing the same conditions for both of the two methods in terms of appropriateness of survey tools and survey method, and cooperation of the respondents to the survey, the reliability of indices by the direct method is higher than those by the indirect method.

The cost for the direct method survey is larger than that for the indirect method. Under the indirect method, a single questionnaire containing no name of commodity can be used for all sectors. On the other hand, the direct method needs to use different forms of questionnaires for different sectors that specify commodities that have been selected in advance. The commodities selected need to be reviewed and revised on a periodical basis in order to better reflect industry trends. Furthermore, in selecting target establishments, a preparatory field survey may be required to have a list of establishments that actually manufacture selected commodities if commodity-based data on each establishment is not available. Finally, as the direct method deals with specific commodities, it needs to handle much more data compared to that of the indirect method.

Although the indirect method involves collection of data on the value of production and price, only secondary data - the total value, price and volume indices for each industrial sector - are disseminated. On the other hand, the direct method involves the series of surveys covering individual commodities because the unit of measurement often varies among the commodities even when indices produced are by sector or by commodity group. And the primary data - absolute figures on production by commodity - are highly demanded by a variety of users. The objectives of the direct

method survey are not only the secondary data but also the primary data, i.e. absolute figures in volume. The direct method survey first entails the level of the primary data reliable enough for dissemination. Statistics of absolute figures are centers of interest of many concerned entities. Compared with the indices, verification of the reliability of the absolute figures is easier to be done by them. The direct method to generate and disseminate not only indices but also absolute figures of production requires more cost in both preparatory and implementation phases.

From the standpoint of the respondents, the questionnaire of the direct method with more number of items poses more burdens. However once the commodities with appropriate measuring units are clearly defined in the questionnaires, the better response rate may be expected in the direct method because the volume data of commodities is easier to be obtained from the managerial level of the establishments than value data which normally involves cost factors not directly relating to the production activity.

The indirect method is simple and convenient for the purpose of developing short-term macroeconomic indices that depict the overall trends of the manufacturing industry. Nevertheless, timely policymaking and short-term economic forecast require the accurate monitoring of production trends of individual commodities (groups). The direct method is an essential tool to produce such commodity-based industrial statistics and indices. Note that the Philippines is only one among the five major ASEAN countries, which produces and disseminates industrial indices by the indirect method.

3.3 MISSI

MISSI is one of the designated surveys covering 16 sectors of the manufacturing industry, which have been conducted by NSO since 1997. Its management structure includes a technical committee organized by representatives of the related government agencies, which discuss ways to improve the design of the survey and reliability of data. At the same time, there is the demand for MISSI to increase its coverage of the manufacturing industry by adding more sectors in order to meet requirements for the System of National Accounts (SNA) and NSO is currently preparing for the expanded survey.

The MISSI questionnaire consists of the following six items. A single form is used for all the sectors surveyed. Note that the “production, sales and inventory”

section has a blank space for the name of the commodity. The responding establishment is required to enter the name of the commodity (up to five) it produces, together with the unit of measurement for each commodity, followed by the volume and value of production.

1. Employment
2. Compensation
3. Production, Sales, and Inventory (both volume and value)
4. Total sales
5. Inventory of raw materials
6. Capacity utilization

MISSI was originally designed to collect and compile industrial production data by volume and by commodity, which is then used to generate industrial indices by the direct method. Nevertheless, it fails to collect sufficient amounts of data to meet the purpose, as many respondents do not take time to specify commodity names in the questionnaire. In addition, most of the commodity information reported does not serve as statistical data due to inconsistency and arbitration in naming or units of measurement.

As a result, the MISSI industrial index currently disseminated by the NSO, called the Volume of Production Index (VoPI), is calculated for each sector by the indirect method that consists of the following steps. First, the Value of Production Index (VaPI) is calculated from the total value of production of 520 establishments. VaPI is then divided by the Producer's Price Index (PPI), which is determined from the results of Producer's Price Survey (PPS) covering 180 establishments and 370 commodities. By this calculation, the VoPI is determined for each sector and disseminated to the public.

Industrial indices of MISSI are lacking in: 1) indices to assess the commodity-wise production trends; and 2) indices of sales and inventory. Furthermore, they inherently contain the following statistical errors as they are derived using the indirect method.

- (1) Survey targets are establishment. All the establishments are classified into one sector by their major activity (commodity). If an establishment of a specific sector under the survey produces commodities that should be classified in more

than one sectors, the total value of production by the establishment will inevitably include the portion that should not be counted for the sector.

- (2) PPS is conducted for individual commodities and the market basket for the PPS is reviewed periodically. However, it does not always correspond to the product mix of the sample establishments of MISSI. It should be cautioned that any volume index generated using a price index faces a risk of containing some errors.

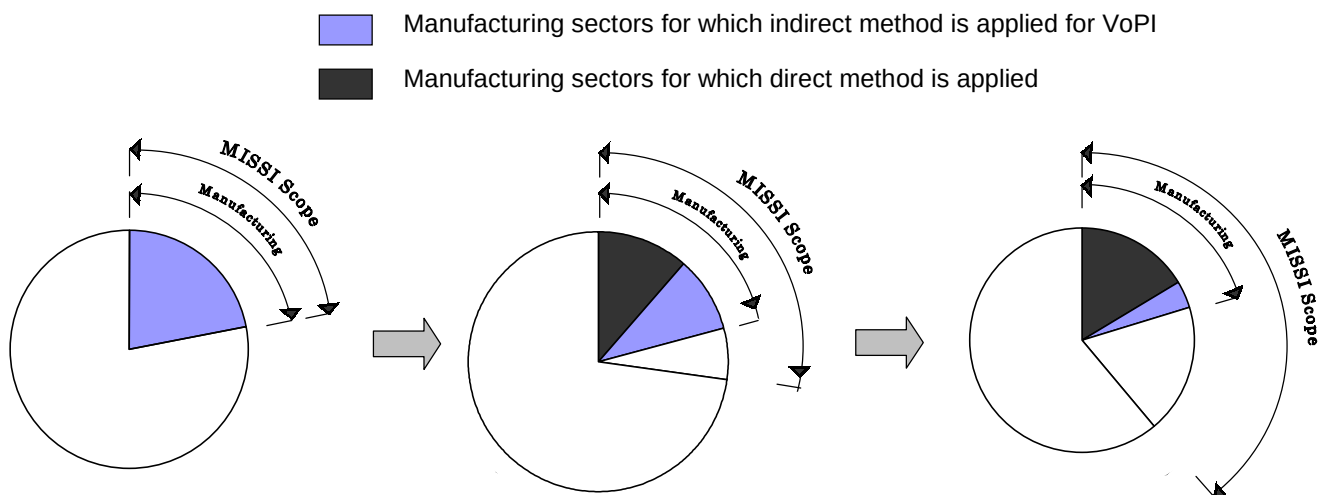
3.4 MISSI Improvement Scheme and the Study

NSO sets the following two goals for MISSI to upgrade its quality in the long run.

- To expand the survey coverage beyond the manufacturing industry by adding mining, agriculture, service industries, etc.
- For the manufacturing industry, to convert to a commodity and volume based survey (MSP) with a view to disseminating absolute production figures and industrial indices by the direct method.

Figure S3-1 presents a conceptual view of the improvement scheme of MISSI.

Figure S3-1 Improvement Scheme of MISSI



The Study is conducted to promote the goal in b. More precisely, NSO and the study team work together to make the current MISSI ready for conversion to the commodity and volume based survey (MSP) aiming at the dissemination of absolute figures of production volume by commodity and development of new industrial indices, while giving full consideration to linkage of the new indices with the existing ones that have been disseminated since 1998. The following is the list of activities of the Study.

- a. To establish the MSP design policy;
- b. To select target sectors, commodities and establishments;
- c. To design the questionnaire;
- d. To prepare survey manuals;
- e. To conduct a pretest survey to check if survey tools work properly as designed and apply the result of the survey for finalization of the design;
- f. To develop new industrial indices based on MSP
- g. To establish the implementation schedule of the conversion

Chapter 4 MSP Basic Design

Chapter 4 MSP Basic Design

4.1 Statistical Approach and Analytical Approach

To start the MSP as government statistics for official dissemination purposes, a sound, well-founded survey design must first be established to provide the basis of selecting target sectors, commodities and establishments. In the Study, the survey design process began with the accurate understanding of the MISSI design principle and sampling policy, based on which survey design was proceeded taking the statistical approach in focusing on the survey coverage with data currently available in the NSO. The survey coverage was defined and target sectors in the manufacturing industry were selected. Commodities and establishments to be covered by the MSP were then selected using the currently available data with care to attain the established coverage rate.

The CPBI, ASPBI and QSPBI conducted by NSO are primarily designed to obtain a general picture of industry in the context of industrial structure and their results are largely used for national account on an annual and quarterly basis. In contrast, the monthly survey is expected to produce flash indicators that represent current economic trends. This can be accomplished by the survey design reflecting actual conditions of industries to be surveyed, and an implementing organization capable of producing the survey results with acceptable levels of accuracy and timeliness. The MSP differs from other establishment surveys that focus on general business performance of establishments without specifying commodities, as it deals with individual commodities. For these reasons, design and maintenance of survey tools, including the questionnaire, require updated information on the structure, characteristics and recent trends of individual industrial sectors surveyed.

These survey tools developed using the statistical approach and tested in the field during the pretest survey in the first half of the Study, were refined in the latter half in order to better reflect the characteristics of each industrial sector for the purpose of producing the final design package. The Study involved a variety of activities, e.g., to determine the manufacturing process in which commodities should be surveyed to obtain accurate data, and to reflect factors peculiar to each industry in the survey method, and which is collectively called the analytical approach.

4.2 MSP Basic Design

The following sections discuss the basic design of the MSP by the statistical approach as defined in 4.1.

4.2.1 Selection of Target Sectors

According to the PSIC (Philippine Standard of Industrial Classification) 1994, the manufacturing industry is classified in Major Division D, consisting of 24 divisions (two-digit), 75 groups (three-digit), 205 classes (four-digit), and 430 sub-classes (five-digit).

The industrial sectors covered by the current MISSI were selected on the basis of the production value, trade statistics, consistency with other statistics, and growth potentiality. As a result, a total of 16 sectors are surveyed, as shown in Table S4-1. They were selected from 31 groups in the manufacturing industry defined in PSIC 1977, using the 1983 census data. The base year for the production indices is 1985. At the same time, a survey of 20 sectors is being conducted. The sectors, 16 plus additional 4 (See Table S4-2), were also selected on the basis of PSIC 1977 and data have been weighed by the results of the 1994 census with 1994 as the base year in order to develop the basis of producing new indices in the future. The 20 sectors are consistent with the industrial classification employed by NSCB for national account calculation. Note that the 16 or 20 sectors above do not agree with the PSIC classification (group).

Table S4-1 MISSI 16 Target Sectors

Sector
Manufacturing
A. Food Manufacturing
B. Beverage
C. Tobacco
D. Textile
E. Wearing Apparel
F. Wood and Wood Products
G. Furniture and Fixtures
H. Paper and Paper Products
I. Chemicals
J. Rubber Products
K. Petroleum Products
L. Non-Metallic Mineral Products
M. Basic Metals
N. Transport Equipment
O. Electrical Machinery
P. Miscellaneous Manufactures

Table S4-2 MISSI Additional Target Sectors

Sector
Publishing & Printing
Leather Products
Fabricated Metal Products
Machinery Excluding Electrical

The target sectors for the MSP were selected according to the following principles:

1. To keep the overall rate of coverage, which is governed by the coverage rates for sectors, commodities and establishments, at the same level as that for the MISSI or above;
2. To select sectors from 75 groups (three-digit) in PSIC 1994; and

3. To select sectors on the basis of value added, rather than the production value.

While NSO's ASE covers all establishments with an ATE (Actual Total Employees) of 100 or more, the census covers those with an ATE of 10 or more. In terms of sampling population, the census undoubtedly offers better data for comparative analysis of sectors. However, the latest census data available is based on 1994 and is fairly old for sector analysis of the manufacturing industry that is subject to violent changes. Furthermore, the 1994 census data was based on PSIC 1977. Sector selection for the MSP was made using the results of the most recent ASE 1997, which was based on PSIC 1994.

GDP calculated in the national account process represents a grand total of value added by all sectors. The ratio of value added to total production varies among sectors according to their own operational structure, as manifested in the percentage share of raw materials and the level of labor-intensiveness. NSO has been using production value as selection criteria for sectors and establishments for the sake of convenience. So long as target establishments are selected from the same sector, the value added and the production value produce little difference in the result of selection. However, it is desirable to use the value added for sector selection comparing impacts of different industrial sectors on the national economy. Note that the results of the ASE 1997 indicate the value added by each PSIC three-digit group.

The sectors covered by the MISSI do not entirely agree with PSIC classification. Table S4-3 lists the groups (three-digit) under PSIC 1994, which are included in the 20 target sectors for the MISSI. The rate of coverage by the groups was calculated on the basis of value added in the ASE 1997. These groups accounted for 89% of total value added of the total manufacturing industry.

Table S4-3 Coverage of MISSI 20 Target Sectors

PSIC 1994		Industry Description	MISSI's Coverage No. (%)	Value-Added by ASE 1997	
2-digit	3-digit			1,000 Pesos (%)	
		TOTAL	37 (89.0)	473,189,299 (100.0)	
1) 15	1) 151	PRODN, PROCG & PRESERVATION OF MEAT, FISH & OTHER SEAFOODS, FRUITS, VEG OILS & SLAUGHTERING & MEAT PACKING	▲ (6.4)	30,414,601 (6.4)	
	2) 152	MFR OF DAIRY PRODUCTS	▲ (1.6)	7,592,858 (1.6)	
	3) 154	MFR OF STARCHES & STARCH PRODUCTS, PREPARED ANIMAL FEEDS, & GRAIN MILL	▲ (1.3)	5,999,583 (1.3)	
	4) 155	MFR OF BEVERAGES	▲ (6.3)	30,012,974 (6.3)	
	5) 156	MFR OF BAKERY PRODUCTS	▲ (0.9)	4,043,795 (0.9)	
	6) 157	MFR OF SUGAR	▲ (1.4)	6,490,319 (1.4)	
	7) 158	PRODN OF CRUDE COCONUT OIL, COPRA CAKE, MEALS & PELLETS	▲ (0.6)	2,830,340 (0.6)	
	8) 153,159	RICE & CORN MILLING, MFR OF OTHER FOOD PRODUCTS		29,237,757 (6.2)	
2) 16	9) 160	MFR OF TOBACCO PRODUCTS	▲ (4.3)	20,242,325 (4.3)	
3) 17	10) 171	SPINNING, WEAVING & FINISHING OF TEXTILES	▲ (1.1)	5,295,722 (1.1)	
	11) 172-174	MFR OF OTHER TEXTILES	▲ (1.0)	4,501,915 (1.0)	
4) 18	12) 181	READY-MADE GARMENTS MFG	▲ (3.1)	14,765,545 (3.1)	
	13) 182,189	CUSTOM TAILORING & DRESSMAKING; MFR OF WEARING APPAREL, N.E.C.		4,329,312 (0.9)	
5) 19	14) 191-192	TANNING & DRESSING OF LEATHER, MFR OF LUGGAGE, HANDBAGS & FOOTWEAR	▲ (0.7)	3,219,833 (0.7)	
6) 20	15) 201-202	MFR OF WOOD, WOOD PRODUCTS & CORK, EXCEPT FURN; MFR OF ARTICLES OF BAMBOO, CANE, RATTAN & THE LIKE; & PLATING MATL	▲ (0.9)	4,389,636 (0.9)	
7) 21	16) 210	MFR OF PULP, PAPER, & PAPERBOARD	▲ (1.9)	9,212,557 (1.9)	
8) 22	17) 221	PUBLISHING	▲ (0.5)	2,572,926 (0.5)	
	18) 222-223	PRINTING; PUBLISHING & PRINTING ACTIVITIES	▲ (0.7)	3,357,880 (0.7)	
	19) 224	REPRODUCTION OF RECORDED MEDIA		3,764 (0.0)	
9) 23	20) 232	MFR OF REFINED PETROLEUM PRODUCTS	▲ (11.9)	56,375,708 (11.9)	
	21) 231,239	MFR OF COKE OVEN PRODUCTS	▲ (0.1)	565,251 (0.1)	
10) 24	22) 241	MFR OF BASIC CHEMICALS	▲ (1.8)	8,503,341 (1.8)	
	23) 242,243	MFR OF OTHER CHEMICALS PRODUCTS, MFR OF MAN-MADE FIBERS	▲ (7.4)	35,228,296 (7.4)	
11) 25	24) 251	MFR OF RUBBER PRODUCTS	▲ (0.4)	1,975,328 (0.4)	
	25) 252	MFR OF PLASTIC PRODUCTS	▲ (2.2)	10,297,613 (2.2)	
12) 26	26) 261	MFR OF GLASS & GLASS PRODUCTS	▲ (0.7)	3,227,738 (0.7)	
	27) 262	MFR OF CEMENT	▲ (2.8)	13,361,725 (2.8)	
	28) 269	MFR OF NON-METALLIC MINERAL PROD, N.E.C	▲ (1.1)	5,385,168 (1.1)	
13) 27	29) 271	MFR OF BASIC IRON & STEEL	▲ (3.0)	14,274,983 (3.0)	
	30) 272	MFR OF BASIC PRECIOUS & NON-FERROUS METALS	▲ (1.0)	4,722,371 (1.0)	
	31) 273	METAL CASTING		2,711,762 (0.6)	
14) 28	32) 281,289	MFR OF FABRICATED METAL PRODUCTS EXCEPT MACHINERY & EQUIPMENT	▲ (1.6)	7,637,317 (1.6)	
15) 29	33) 291-294	MFR OF MACHINERY & EQUIPMENT, N.E.C	▲ (1.2)	5,621,813 (1.2)	
16) 30	34) 300	MFR OF OFFICE, ACCOUNTING & COMPUTING MACHINERY		6,993,548 (1.5)	
17) 31	35) 311-312	MFR OF ELECTRIC MOTORS, GENERATORS, & TRANSFORMERS; MFR OF ELECTRICITY DISTRIBUTION & CONTROL APPARATUS	▲ (0.5)	2,222,705 (0.5)	
	36) 313	MFR OF INSULATED WIRE & CABLES	▲ (0.8)	3,612,100 (0.8)	
	37) 314-319	MFR OF ACCUMULATORS, PRIMARY CELLS, PRIMARY BATTERIES, LIGHTING EQPT, ELEC LAMPS & OTHER ELECL EQPT, N.E.C	▲ (1.9)	9,143,350 (1.9)	
18) 32	38) 321-323	MFR OF ELECTRONIC VALVES & TUBES; SEMI-CONDUCTOR DEVICES & OTHER ELECNC COMPO-NENTS; MFR OF TV & OTHER RADIO TRANS-MITTERS & APPARATUS FOR THE TELEPHONY & LINE TELEGRAPHY	▲ (9.0)	42,560,248 (9.0)	
	39) 324	MFR OF TV & RADIO RECEIVERS, SOUND OR VIDEO RECG OR REPRODG APPARATUS & ASSOCIATED GOODS		3,923,848 (0.8)	
19) 33	40) 331-333	MFR OF MEDICAL PRECISION & OPTICAL INSTRUMENTS, WATCHES, & CLOCKS		5,016,573 (1.1)	
20) 34	41) 341-343	MFR OF MOTOR VEHICLES, TRAILERS & SEMI-TRAILERS	▲ (5.5)	26,252,274 (5.5)	
21) 35	42) 351-359	MFR OF OTHER TRANSPORT EQUIPMENT	▲ (1.5)	7,186,245 (1.5)	
22) 36	43) 360	MFR & REPAIR OF FURNITURE	▲ (0.8)	3,598,258 (0.8)	
23) 37	44) 371-372	RECYCLING OF METAL & NON-METAL WASTE & SCRAP		13,439 (0.0)	
24) 39	45) 391-399	MFR OF JEWELRY, MUSICAL INSTRUMENTS, SPORTS GOODS, GAMES & TOYS & OTHER RELATED GOODS, N.E.C.	▲ (0.9)	4,264,653 (0.9)	

Target sectors for the MSP were selected to achieve the coverage rate of 70-80% by the value added. More precisely, PSIC 1994 groups (three-digit) were partially integrated on the basis of the published data from the ASE 1997 and sectors were selected one by one in order of the value added until the coverage rate reached 70-80%, as shown in Table S4-4. The 22 sectors that were selected represented 75.7% of the total value added.

Table S4-4 MSP Coverage by Target Sectors

PSIC 3-digit	Sector Title	Share in Total Value-added (%)
151	Production, processing and preservation of meat, fish and other seafood, fruit, vegetables, oils and fats	6.4
155	Beverages	6.3
160	Tobacco products	4.3
181	Garments	3.1
232	Refined petroleum products	11.9
242	Other chemical products	7.4
262	Cements	2.8
271	Iron and steel	3.0
321, 323	Electronic valves and tubes, television and radio transmitters, and apparatus for line telephony and line telegraphy	9.0
322	Semi-conductor and other electronic components	
324	Television and radio receivers, sound or video recording apparatus, and associated goods	0.8
341-2	Motor vehicles and bodies for motor vehicles	5.5
343	Parts and accessories for motor vehicles	
152	Dairy products	1.6
210	Pulp, paper and paperboard	1.9
241	Basic chemicals	1.8
252	Plastic products	2.2
281, 289	Structural metal products and other fabricated metal products	1.6
292-4	Domestic electric appliances	1.2
300	Office, accounting and computing machinery	1.5
314-5	Primary cells and batteries, lighting equipment and electric lamps, and other electrical equipment	1.9
359	Motorcycles and bicycles	1.5
Total		75.7

Note: Share in total value-added is from NSO's Annual Survey of Establishments 1997 (Manufacturing).

4.2.2 Selection of Target Commodities

Target commodities for the MSP are, in principle, limited to: 1) finished products to consumer markets; or 2) intermediate products that are traded as marketable goods. However, there are not many cases where the entire production process from procurement of raw materials to finished products manufacturing is carried out within the country.

Under PSIC 1994, the manufacturing industry is classified into 430 sub-classes (five-digit), which correspond to commodity groups, rather than individual commodities. Previously, sub-classes of PSIC 1977 were divided into individual commodities, but this detailed commodity classification was not updated in the later revision of PSIC and cannot be used in light of the rapid changes in the manufacturing sector. Although PSCC (Philippine Standard of Classification of Commodities) defines classification for individual commodities, it is not entirely consistent with PSIC. Thus, there is no official commodity classification available for selection of target commodities for the MSP.

For these reasons, commodity selection was made according to the following steps.

1. To select PSIC sub-classes (five-digit) of each target sector, which represent 80% of total value added.

Latest value added data available on a PSIC five-digit basis are contained in the census 1994 which is based on classification according to PSIC 1977. Three-digits (groups) of PSIC 1977 corresponding to three-digits of PSIC 1994 under target sectors were identified, which were then divided into five-digits. The target five-digits of PSIC 1977 were selected one by one until the coverage rate reaches 80%. Finally, the target five-digits of PSIC 1994 were identified by the comparison list of the PSIC 1977 and 1994.

2. To identify commodities contained in the target five-digit classifications under PSIC 1994 by selection from those appearing in the following survey results:
 - Trade statistics
 - Producer's price survey (PPS)
 - WPI survey

- MISSI (commodities reported by sample establishments in the questionnaire during twelve months in 1999)

3. To visit leading establishments, trade associations, and sector specialists of government organizations concerned of target sectors in order to invite a professional advice and suggestions on the commodity list made in 2 above and revise it accordingly.

Table S4-5 shows the selected PSIC sub-classes (five-digit) of each target sector, their total share of value added, and total number of the target commodities.

Table S4-5 MSP Target Commodities

PSIC 3-Digit	Sector Title	PSIC 5-digit Targeted for Commodity Selection	Share in Sectoral Value-added (%)	Number of Commo- dities
151	Production, processing and preservation of meat, fish and other seafood, fruit, vegetables, oils and fats	15110, 15120, 15131, 15141, 15143, 15145, 15152	90.2	11
152	Dairy products	15220, 15250, 15260, 15290	85.9	5
155	Beverages	15530, 15541, 15543, 15542	96.3	11
160	Tobacco products	16040, 16090	95.7	2
181	Garments for women, girls and infants Garments for men and boys	18110 18120	97.5	8 6
210	Pulp, paper and paperboard	21013, 21020	84.8	6
232	Refined petroleum products	23200	100.0	10
241	Basic chemicals	24113, 24115, 24119, 24123	85.1	5

242	Other chemical products	24210, 24241, 24251, 24254	82.8	4
252	Plastic products	25201, 25202, 25206, 25209	87.5	4
262	Cements	26200	100.0	4
271	Iron and steel	27110, 27121, 27122, 27129	95.8	9
281, 289	Structural metal products and other fabricated metal products	28111, 28112, 28911, 28994, 28996	83.1	10
292-294	Domestic electric appliances	29264, 29271, 29302, 29309, 29400	80.1	13
300	Office, accounting and computing machinery	30002	100.0	9
314-315	Primary cells and batteries, lighting equipment and electric lamps, and other electrical equipment	31401, 31402, 31502, 31503	87.1	6
321, 323	Electronic valves and tubes, TV and radio transmitters, and apparatus for line telephony and line telegraphy	32100, 32300	100.0	8
322	Semi-conductor and other electronic components	32200		10
324	Television and radio receivers, sound or video recording apparatus, and associated goods	32400	99.3	13
341	Motor vehicles and bodies for motor vehicles	34100	97.6	6
343	Parts and accessories for motor vehicles	34300		6
359	Motorcycles and bicycles	35911, 35922	99.5	2
TOTAL				168

4.2.3 Selection of Target Establishments

In the Philippines, there is no official data available of manufacturing establishments that are assorted according to commodities they produce.

NSO's establishment data is called the master list of establishments, which has been prepared based on the lists of establishments made by the SEC (Securities and Exchange Commission) and BTRCP (Bureau of Trade Regulation and Consumer Protection) of DTI. The list has been updated prior to the five-year census and in the mid-year by sending enumerators from regional offices to listed establishments in order to check if they still exist and are in business. The informal sector is not included. The master list of establishments of 1998 contains 680,000 establishments, of which 98,000 belong to the manufacturing industry. The list is used as the population of establishment sampling for CPBI, ASPBI, and QSPBI.

All the establishments contained in the master list of establishments are classified in PSIC sub-classes (five-digit). It should be noted, however, that this classification is based on the "major activity" declared by each establishment and a specific commodity produced cannot be identified from the list. Also an establishment may produce other commodities than the one declared as the major activity, which should possibly be included in other five-digit sub-classes. Thus, establishments classified in a target five-digit sub-class do not necessarily produce target commodities, while those classified in other five-digit sub-classes may produce the target commodities. For this reason, all the establishments in target three-digit groups should be used as the population for selection of the target establishments of the MSP. In this way, all the establishments that may produce target commodities are covered. The process of the target establishment selection for the MSP starts with making the pre-qualified establishment list by screening the establishment lists of target PSIC three-digits (groups) on the basis of contribution in terms of value added. Note that no locality factor is taken into account in the selection process for the MSP, as practiced in the MISSI.

NSO's data on establishments with value added are obtained from ASE and the Census. However, ASE data is not suitable for use as the establishment population due to its ATE-based cut-off line. On the other hand, census data is relatively old (1994) and there may be some estrangement from the actual situation.

For these reasons, target establishment selection was made according to the following steps, keeping the sector coverage rate of value added at 80%.

“Establish the ATE-based cut-off lines corresponding to 80% value added using the 1994 census, then apply them to target three-digit establishment lists of the latest master list of establishments, to obtain the list of the pre-qualified establishments”

Procedures of the steps are as follows.

1. Establishments surveyed by the census 1994 classified in the target three-digits (groups) were first arranged within each of the target sectors in order of ATE, and their value added was calculated.
2. An ATE at which the value added coverage rate reached 80% was assumed to be an “ATE-based cut-off line equivalent to the coverage rate of 80% in terms of value added”. It should be noted, however, that the cut-off line was determined using three-digit groups under PSIC 1977 because the census 1994 was conducted for industries classified under PSIC 1977, whereas the target sectors for the MSP were selected according to PSIC 1994.
Table S4-6 is an example of the worksheets for the establishment of the ATE-based cut-off line. The cut-off line of the example is ATE 200.
3. Finally, the ATE-based cut-off line was applied to each target sector of the latest master list of establishments in order to make a selection.

Selection by these procedures uses ATE as a surrogate parameter approximating the value added, the actual cutoff criteria. Establishments selected in 3 above are those that may produce target commodities. In order to make the final list of the target establishments for the MSP, a qualification survey to identify those that do in fact produce target commodities needs to be done. The result of the qualification survey is assumed to be the list of the establishments accounting for 80% of the target commodities in terms of value added, and will serve as the final list of the target establishments.

Table S4-6 How to Establish ATE Cut-Off Line (Example)

- PSIC 152: Dairy Products

Number of Establish-ments		PSIC 1994	Actual Total Employees (ATE)	Employment Stratum	Value-Added	Share			Cumulative		
						Number	ATE	V-A	Number	ATE	V-A
					[Peso]	[%]	[%]	[%]	[%]	[%]	[%]
1	1	D152-50	1,164	1000 +	152,621,024	3.1	16.1	2.5	3.1	16.1	2.5
2	1	D152-60	930	500 - 999	2,622,092,966						
3	2	D152-20	926		818,081,662						
4	3	D152-40	706		388,971,784	9.4	35.5	62.1	12.5	51.6	64.6
5	1	D152-50	469	200 - 499	199,106,044						
6	2	D152-60	453		17,553,892						
7	3	D152-40	424		252,738,322						
8	4	D152-50	408		115,939,751						
9	5	D152-50	351		505,160,459						
10	6	D152-50	335		174,194,699						
11	7	D152-10	222		113,121,899	21.9	36.9	22.3	34.4	88.4	86.9
12	1	D152-20	184	100 - 199	165,024,464						
13	2	D152-20	132		440,143,547	6.3	4.4	9.8	40.6	92.8	96.7
14	1	D152-40	53	50 - 99	105,029,291						
15	2	D152-50	52		11,460,013						
16	3	D152-50	51		2,154,128	9.4	2.2	1.9	50.0	95.0	98.6
17	1	D152-50	48	20 - 49	14,733,134						
18	2	D152-50	43		31,052,542						
19	3	D152-50	40		12,508,582						
20	4	D152-20	35		8,259,430						
21	5	D152-50	25		1,127,177						
22	6	D152-10	23		919,763						
23	7	D152-10	21		10,634,268	21.9	3.3	1.3	71.9	98.2	99.9
24	1	D152-50	19	10 - 19	447,813						
25	2	D152-50	16		406,010						
26	3	D152-50	16		519,365						
27	4	D152-50	16		1,049,022						
28	5	D152-50	15		380,636						
29	6	D152-90	15		904,644						
30	7	D152-50	11		230,359						
31	8	D152-50	10		52,000						
32	9	D152-50	10		506,100	28.1	1.8	0.1	100.0	100.0	100.0
TOTAL			7,223		6,167,124,790						

Note : Based on CE 1994.

4.2.4 Overall Coverage Rate of the MSP

Figure S4-1 shows the methods for selecting the target sectors, commodities and establishments for the MSP, as discussed in 4.2.1 through 4.2.3.

Figure S4-1 Selection Flow of Target Sectors/Commodities/Establishments for MSP

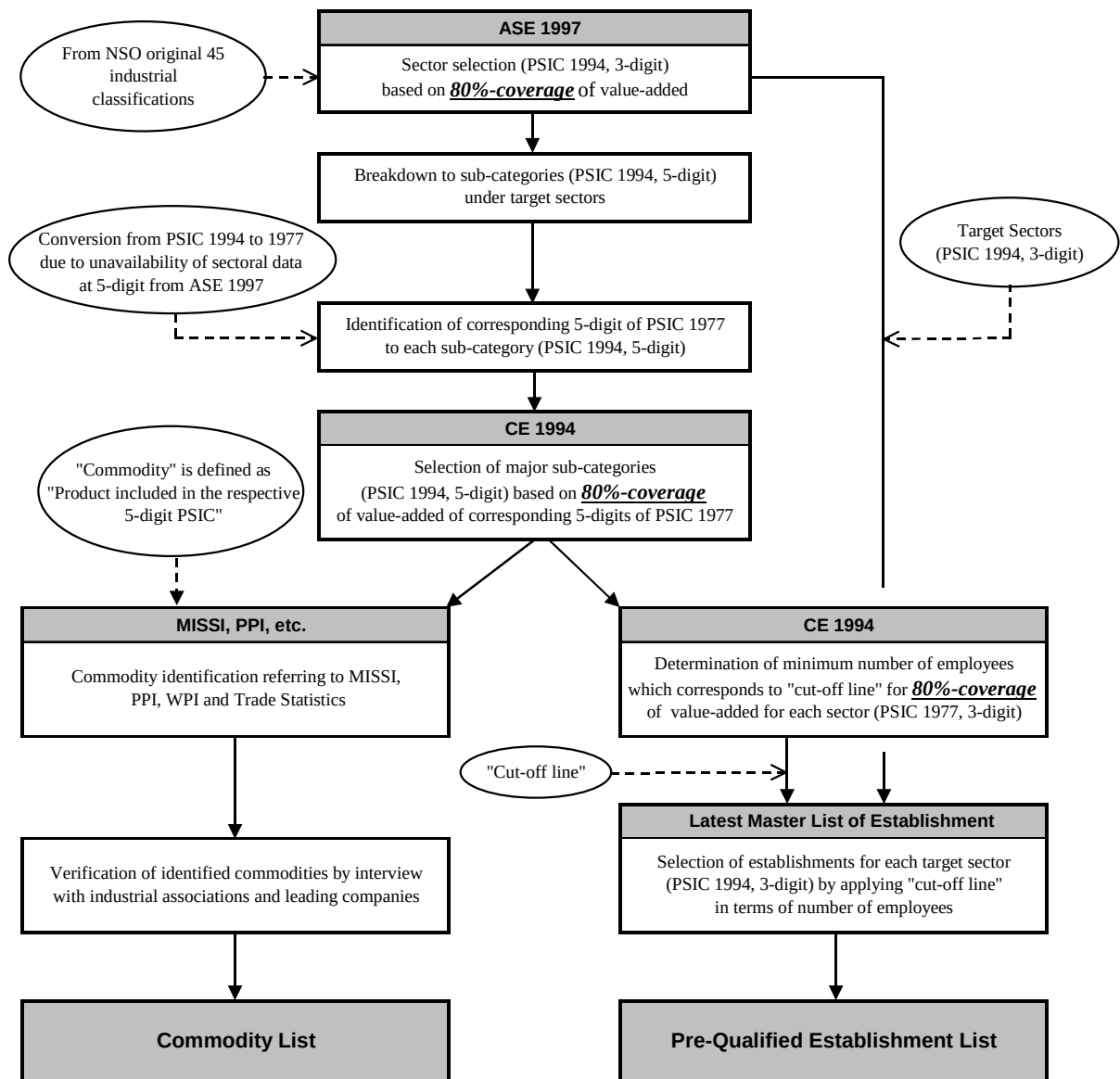
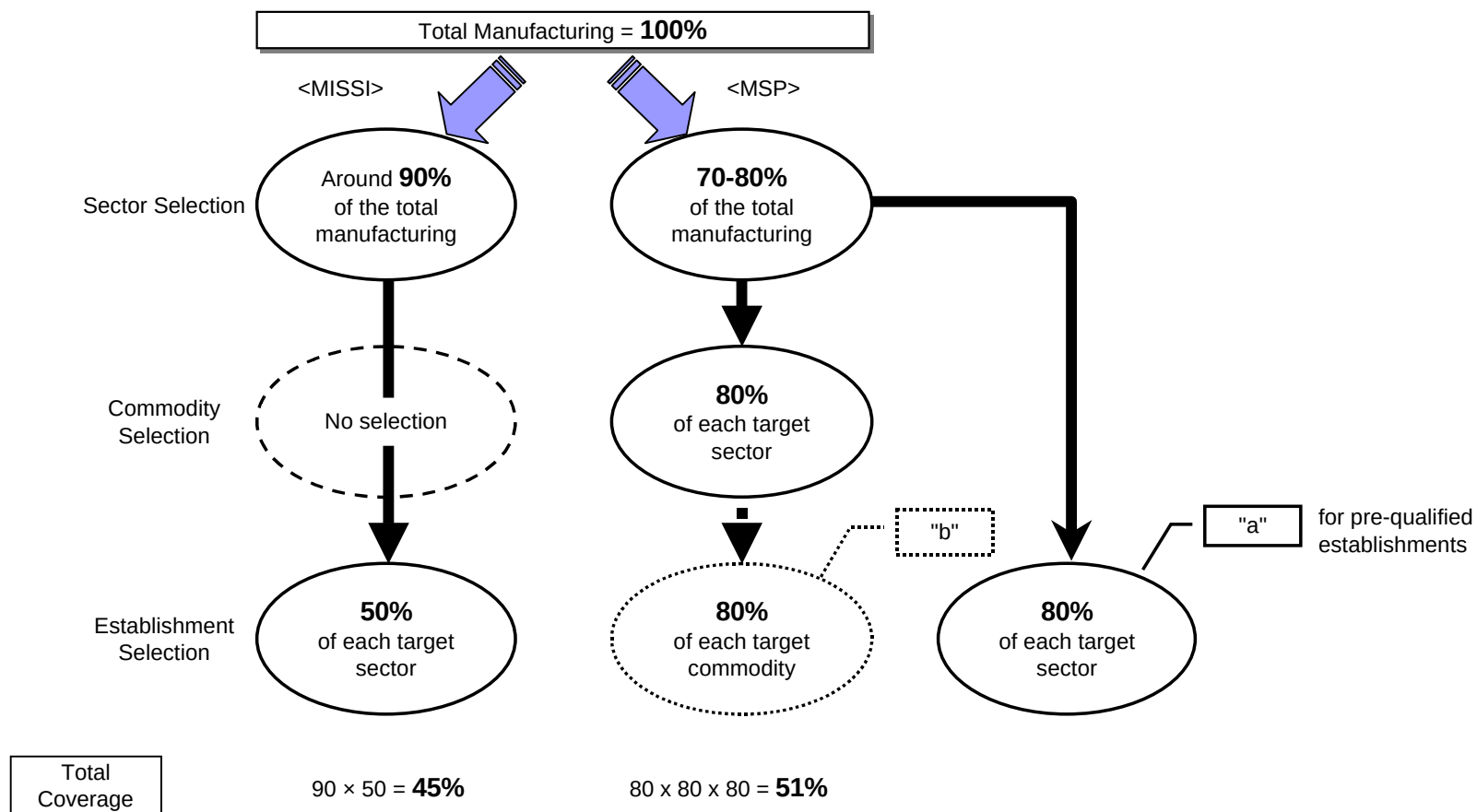


Figure S4-2 compares the coverage rates of the MISSI and MSP. The coverage rate for the MISSI is approximately 45%. For the target sectors of the MSP, the coverage rate of 80% was applied to both commodity and commodity-wise establishment selections. The overall coverage rate of the MSP is assumed to be 51% ($80\% \times 80\% \times 80\%$).

Figure S4-2 Survey Coverage of MISSI and MSP



Note: Procedure "a" and "b" for establishment selection

All the establishments are classified by 5-digit PSIC according to the major activity, not by the commodity they produce. That is, those establishments which are not classified to the target 5 digit may produce target commodity, even if it is not their major activity.

In order to play it safe under this situation, pre-qualified target establishments are selected from all the establishments under target sectors, 3-digit PSIC, applying the coverage of 80%. - Procedure "a"

Procedure "b" based on the target commodity could be done only when all the establishments were classified by commodity.

4.2.5 Survey Items

The questionnaire of the MSP consists of three sections, finished products, raw materials and production capacities.

1. Finished Products Section

The MSP collects data on individual finished products, i.e., production, sales, and inventory volume. The production volume measures the current level of production activity, the sales volume, the current level of demand for a specific product, and the inventory volume a gap between supply and demand.

Production in volume: Refers to the production volume of the specified product at the establishment during the reference month. The volume of work-in process and the volume of products repaired or fixed are not included. Entries should be based on the actual location where the manufacturing was done whether or not the establishment operates on a consignment basis.

Purchased or Received Volume: Refers to volume of finished products purchased or received, and then sold or transferred or stocked without any manufacturing process. Products received or purchased from the subcontractors are counted in this column by the client establishment. Received volume from another establishment of the same enterprise is also included.

Internal Consumption in Volume: Refers to the volume of products consumed within the same establishment as input to the subsequent production process. Note that this column should be added only to the questionnaire of the applicable sectors.

Sales in Volume: Domestic sales
Export

Other: Refers to the products transferred to another establishment of the same enterprise, or consumed for internal use.

Month-end Inventory in Volume:

Refers to inventory volume of the specified finished product, not including work-in-process.

Production Value:

As in the case of other NSO surveys, it is measured by ex-factory prices, but the definition of “Production Value” in the MSP is as follows:

Production Value (MSP) = Volume of Finished Products produced x Producer’s Price

Production Value (MISSI and other NSO surveys) = Products sold + Industrial Services + Inventory Changes

Production volume not including the purchased or received volume is valued at an ex-factory price. Establishments operating as labor subcontractors are required to value their products by ex-factory prices as though sold.

Raw Material Section

Month-end Inventory in Volume:

Refers to raw materials inventory volume used for production of the target commodities.

Production Capacity Section

Monthly Production Capacity in Volume:

Refers to production capacity of each commodity under normal operation. Data is collected to calculate the utilization rate of the equipment based on the monthly production volume, which forms the basis of the utilization index of the sector that is an effective

indicator for economic forecast. Though the purpose of the question is same as that of the MISSI, production capacity data is collected for accuracy.

4.2.6 Questionnaire

A different form of questionnaire of a single sheet type is prepared for each target sector and for each reference month, containing the name of the target commodities, raw materials, and the product name for production capacity. In order to help the respondent to understand the intent of the questionnaire, “Description of Commodities” that lists actual product names and filling instructions accompany the questionnaire. An example of the questionnaire and corresponding “Description of Commodities” for PSIC 151 sector is presented in the following pages.

Questionnaire No:	151-10						Sector:	Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats					
Establishment ID:							Reference Month / Year:	January / 2001			Please fill out by the 10th day of the next month.		

1. Finished Products			VOLUME							VALUE
Code	Name	Unit	Production	Purchased/ Received	Internal Consumption	Shipment			Inventory at the end of month (F)	Production (1000 pesos) (G)
			(A)	(B)	(X)	Domestic Sales (C)	Export (D)	Others (E)		
101	Dressed / packed poultry	Ton								
102	Dressed / packed red meat	Ton								
103	Preserved / prepared poultry and poultry products	Ton								
104	Preserved / prepared red meat and red meat products	Ton								
105	Canned fish and other aquatic animals	Ton								
106	Packed fish and other aquatic animals	Ton								
107	Smoked / dried fish and other aquatic animals	Ton								
108	Canned / packed fruits	Ton								
109	Fruit and vegetable sauces	Ton								
110	Flour of potato and wheat	Ton								
111	Coconuts and vegetable oil	Ton								

2. Raw Materials			VOLUME	
Code	Name	Unit	Inventory at the end of month	
			(H)	
201	Poultry	Ton		
202	Red meat	Ton		
203	Fish and other aquatic animals	Ton		
204	Fruits and vegetables	Ton		

3. Monthly Production Capacity			VOLUME	
Code	Specification	Unit	Capacity (monthly)	
			(I)	
301	Filling capacity of canned / packed fish and other aquatic animals	Ton		
302	Filling capacity of fruit and vegetable sauces	Ton		
303	Milling capacity of flour of potato and wheat	Ton		
304	Canning / bottling capacity of coconuts and vegetable oil	Ton		

(J) Remarks (If there is substantial change in production, shipment or inventory compared to the previous month, please explain why.)

[CONTACT]

[ENUMERATOR] Tel:

DESCRIPTION OF COMMODITIES (FINISHED PRODUCTS)
SPECIFIED IN THE QUESTIONNAIRE

Questionnaire 151-10 Production, processing and preservation of meat, fish and other seafoods, vegetables, oils and fats

Commodity Code	Commodity Name	Description	Unit	PSIC 5-digit
101	Dressed / packed poultry	Includes: dressed and fresh (packed) chicken, gallantina, duck, geese, turkey	Ton	15110
102	Dressed / packed red meat	Includes: fresh (packed) and frozen meat, pork, dressed tripe except poultry	Ton	15110
103	Preserved / prepared poultry and poultry products	Includes: chicken ham, canned chicken	Ton	15120
104	Preserved / prepared red meat and red meat products	Includes: hotdog, cooked ham, bacon, chorizo, corned beef, sausages, other canned or processed meat	Ton	15120
105	Canned fish and other aquatic animals	Includes: canned tuna, sardines, squid, shrimp, mackerel, bonito, herring, shell, other crustaceans and mollusks	Ton	15131
106	Packed fish and other aquatic animals	Includes: packed tuna, sardines, squid, shrimp, mackerel, bonito, herring, shell, other crustaceans and mollusks	Ton	15131
107	Smoked / dried fish and other aquatic animals	Includes: smoked/dried tuna, sardines, squid, shrimp, mackerel, bonito, herring, shell, other crustaceans and mollusks	Ton	15132/15133
108	Canned / packed fruits	Includes: processed/canned banana, pineapple, mango, etc., fruit juices, preserved fruits, fruit cocktail, fruit concentrates, fruit jellies	Ton	15141
109	Fruit and vegetable sauces	Includes: tomato sauce, spaghetti sauce, ketchup, tomato paste and soy sauce	Ton	15143
110	Flour of potato and wheat	Includes: potato flour and wheat flour, other flour products except cassava	Ton	15145
111	Coconuts and vegetable oil	Includes: coconut oil, vegetable oil (e.g. corn oil) other than coconut, and cocoa butter, oil/fat, vegetable shortening, edible oil, acid oil, vegetable lard, cooking oil, margarine	Ton	15152

Reference : 1994 Philippine Standard Industrial Classification.

Chapter 5 MSP Final Design

Chapter 5 MSP Final Design

In order to assure the coverage rate of the survey, the basic design of the MSP incorporates survey tools that have been created using a statistical approach. When putting together the final design, the pre-test survey results are incorporated in the design, and at the same time, the analytical approach described in section 4.1 is used to: 1) reflect the configuration, features, and trends of each sector in the design and thus boost the representativeness of the survey; and 2) create survey tools with the appropriate content and scale.

5.1 Features of the MSP

Before the survey design is finalized, the features of the MSP are organized.

5.1.1 Activity Survey

The CSPBI, ASPBI, QSPBI, and MISSI currently being conducted by the NSO are all establishment surveys. “Establishment” is defined as follows: “An economic unit recognized as a single corporate entity, operating under a single ownership and management, located at a specific and fixed location, and conducting a single or principally single economic activity”. Establishments are classified based on the PSIC, and production figures and all other data are totaled as the data for the sector in which the establishment has been classified, and is used in the statistics and indices indicating the configuration and trends of the sector.

The target of the MSP, on the other hand, is not the establishment, but rather the activities. For a manufacturing enterprise, the activity is expressed as the commodities being produced, and the targets of the survey will be the individual commodities. Representative commodities are selected for the various sectors that serve as good indicators of the production trends of the sector, and the production trends of those commodities are surveyed. When an establishment is surveyed, the establishment always receives one questionnaire, but with the MSP, which is an activities (commodities) survey, some establishments receive more than one questionnaire.

Table S5-1 Survey Target

Survey	Sampling Unit	Survey Target
CPBI	Establishment	Local Unit (=Establishment)
ASPBI	Establishment	Local Unit (=Establishment)
QSPBI	Establishment	Local Unit (=Establishment)
MISSI	Establishment	Local Unit (=Establishment)
MSP	Establishment	Activity Unit (= Commodity)

5.1.2 Criteria for Selecting Target Establishments

There are two methods for selecting establishments to be surveyed: complete enumeration and sampling. Complete enumeration targets all of the establishments that fit the criteria, but for sample surveys, a given percentage of the establishments that meet the criteria are selected for surveying. In some cases, establishments above a certain scale are targeted for complete surveys, and those below that scale are targeted for sample surveys.

The CPBI and ASPBI, which are NSO establishment surveys, are complete surveys conducted on establishments with an ATE above a certain scale (10 employees for the CPBI and 100 for the ASPBI), while sample surveys are conducted on establishments below that scale. The QSPBI uses the sales volume rather than the ATE as a criterion, but similarly, complete surveys are conducted on establishments with a sales volume above a certain scale. For the MISSI, however, the criteria by which establishments are selected for inclusion in the survey are less clear than those of other surveys. Although this survey started out as a complete survey targeting establishments with production values above a certain scale, some establishments were eventually added to the survey from external enterprise lists, with the aim of including all principal establishments and not leaving any out. Subsequently, repeated substitutions of establishments were conducted due to response circumstances and for other reasons.

The purpose of the MSP is to disseminate absolute figures as well as indices. Establishing clearly defined criteria for selecting target establishments for surveying and strictly observing those criteria are necessary for all surveys in order to assure the credibility and continuity of the data. When the purpose of a survey is to disseminate absolute figures, however, the criteria for selecting target establishments for surveying

must be even more clearly defined and persuasive than those of surveys like the MISSI, which are designed only to disseminate indices.

It goes without saying that complete surveys are preferable when it comes to disseminating absolute figures, and trade statistics are one example of that. In terms of cost, as well as the time required for dissemination, however, it is not realistic to conduct complete surveys for the MSP. If complete surveys are not used, the absolute figures that are disseminated are those taken from only some of the establishments. If these surveys are to be effectively meaningful, they must have a coverage rate that makes it possible to easily estimate the absolute figures for all of the establishments. In order to assure a coverage rate that enables easy estimation of the absolute figures for all of the establishments, it is necessary to use, rather than sample surveys, complete surveys that target establishments above a certain scale set as the selection criterion. With the MSP, complete surveys are conducted targeting establishments from among those manufacturing the various types of commodities that are above a given scale, and this makes it possible to estimate the overall absolute figures.

When utilizing complete surveys of establishments above a given scale, meaning complete surveys with a specified cut-off line, for the MSP, there are two points that must be kept in mind.

1. Criteria for establishing the cut-off line

The criteria for establishing the cut-off line can include, in addition to the number of employees (ATE), parameters such as production values, value added, and sales values, but as a rule, they should be based on features of the establishment, such as the ATE and location. For the reasons outlined below, the ATE must be used for the MSP.

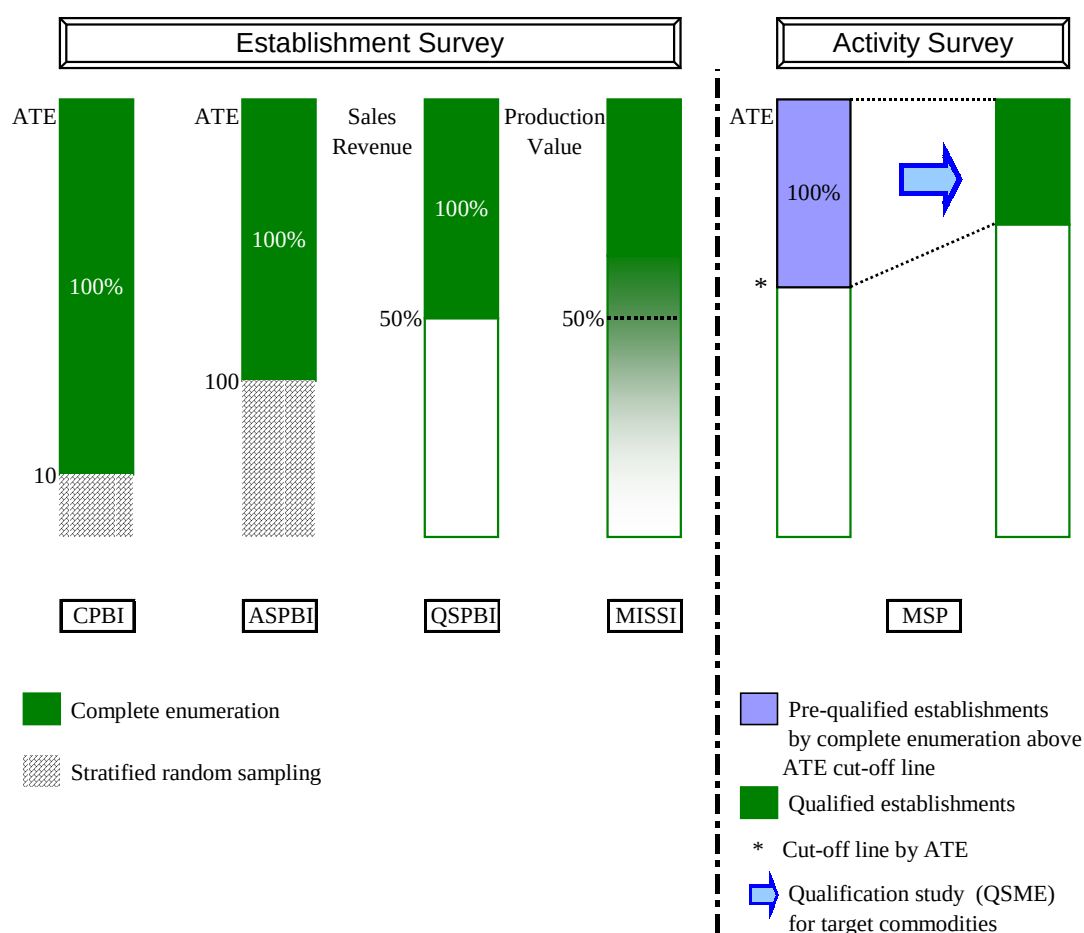
- a) Establishment data other than the ATE, such as production values, value added, and sales values, have to be taken from the aggregation and dissemination of the ASPBI or other surveys. In other words, in the usual case, the data that can be used is not the most recent available data.
- b) Although there are some exceptions, the production values and sales values for an establishment are basically proportional to the ATE. The ATE is an item for which responses can easily be obtained from establishments. In other words, if the ATE is used as the criterion for the cut-off line, the qualification of the

establishment can be monitored on an ongoing basis. This also makes it possible to decide immediately whether or not a newly created establishment must be included in the survey, whether establishments, where the scale has been cut back are to continue being included, as well as other questions.

- c) When absolute figures and indices are disseminated, descriptions such as “The survey targeted all establishments with an ATE of over 100 people, or over 200 people” are highly persuasive to users of statistics, and quality pertaining to errors in absolute figures and indices can be easily judged from an objective standpoint.

Figure S5-1 shows a comparison of the criteria used to select the establishments targeted by the various surveys.

Figure S5-1 Target Establishment Selection



2. Differentiating between establishments targeted by surveys and those not targeted

There is a sharp distinction between establishments that are targeted by surveys and those that are not. In other words, establishments that are non-cooperative to the survey cannot be replaced by other establishments in the survey. If there is a new establishment that is above the cut-off line, however, it is added to the survey target population. And if there is a bankrupt establishment or an establishment that has stopped production of target commodities, it is deleted. These factors themselves comprise sector trends, and must be reflected in the absolute figures and indices in order for the survey to be meaningful.

5.2 Target Sectors

5.2.1 Sectors Targeted for Pre-test Survey

The 22 sectors with the highest value added contributions, based on PSIC 3-digit classification, were selected as the target sectors in the MSP basic design. The coverage rate was 75.7%.

5.2.2 Final Selection of Target Sectors for MSP

The items described below were examined when the final selection was made of sectors targeted for the MSP, based on the configuration and features of the various sectors of the manufacturing industry.

1. Sectors comprising of mainly consignment processing establishments are not included in the MSP. The reasons are as follows:
 - a) Shipments from establishments on a consignment basis consist not only of finished products, but also of large quantities of semi-finished products. Even if the establishment was a pre-qualified establishment, in many cases it could not serve as a survey target because it did not produce target commodities of the MSP. Identification of target establishments requires significantly more time and higher costs than that of other sectors.
 - b) Sectors comprising mainly consignment processing establishments have complex industrial configurations and large numbers of establishments, and even if the survey is limited to production alone, it takes more time and is more

costly to acquire an accurate grasp of the production volume of finished products than for other sectors.

- c) One reason why the MSP is so useful is because it surveys trends in production volumes, sales volumes, and inventory volumes, and the resulting figures can be used in making economic forecasts. This assumes, however, that the establishment or enterprise is watching the market and initiating its own control over production, sales, and inventory levels. With consignment operating establishments, in which production activities are carried out in response to instructions from a parent company or the client company, which may be either domestic or foreign, production control, sales control and inventory control are not carried out autonomously in many cases. As explained earlier, despite the fact that the application of MSP in sectors, where most of the establishments are labor subcontractors involves higher costs than in other sectors, the results do not yield the hoped-for benefits.

Example 1: Electronic components sector

Most of the establishments in the sector are engaged in consignment processing from overseas parent companies.

Example 2: Garments industry

Many of the establishments in this sector are engaged in consignment processing, and in many cases the shipments do not consist of finished products.

2. In sectors where the production activities in the EPZ consist mainly of production of commodities for export, using imported parts and materials, trends in the sector are not governed by the domestic economy in the Philippines, but rather by the business strategies of the parent company overseas. Because one objective of the MSP is to create indices for measuring domestic economic trends in the Philippines, these sectors are given a low priority as targets for the MSP.

Example 1: Electronic components sector

Most of the establishments are located in the EPZ, and almost all of the products are exported.

3. Sectors in which the principal commodities are judged inappropriate for the MSP are excluded as targets.

Example 1: Electronic components sector

Many diverse types of products are manufactured, and vast numbers of products having different types of specifications may be grouped under the same product name. Additionally, there are drastic fluctuations in product specifications and prices. It is not easy to maintain a grasp of volumes, and even if volumes can be tracked, the data is meaningless as a time series of quantitative data.

Example 2: Plastic products sector

There are many diverse product types, and fluctuations are drastic. Quantitative data obtained from this sector has little meaning as time series data.

4. Sectors necessary in terms of industrial policies, or to create SNA, are being added as target sectors for the current MISSI, even if they have a low value added contributions. For the same reason, the sectors listed below are being added to the MSP.

Animal feeds and grain milling

Coconut and vegetable oils

Sugar

Glass

Non-ferrous metals

Table S5-2 shows the 24 sectors ultimately chosen as target sectors for the MSP. According to ASE1997, the coverage rate of these 24 sectors in the manufacturing industry is 70.9%. Figure S5-2 shows a comparison of the 20 sectors targeted by the current MISSI and the 24 sectors targeted by the MSP, based on the PSIC. In the electronic components sector, garments sector, and plastic products sector, which were excluded from the MSP itself for the reasons noted in 1. to 3. above, economic trends will be surveyed by the indirect method, with volumes being estimated using production values and prices, even after the MSP pilot survey has been successfully concluded and the MSP and MISSI have been combined.

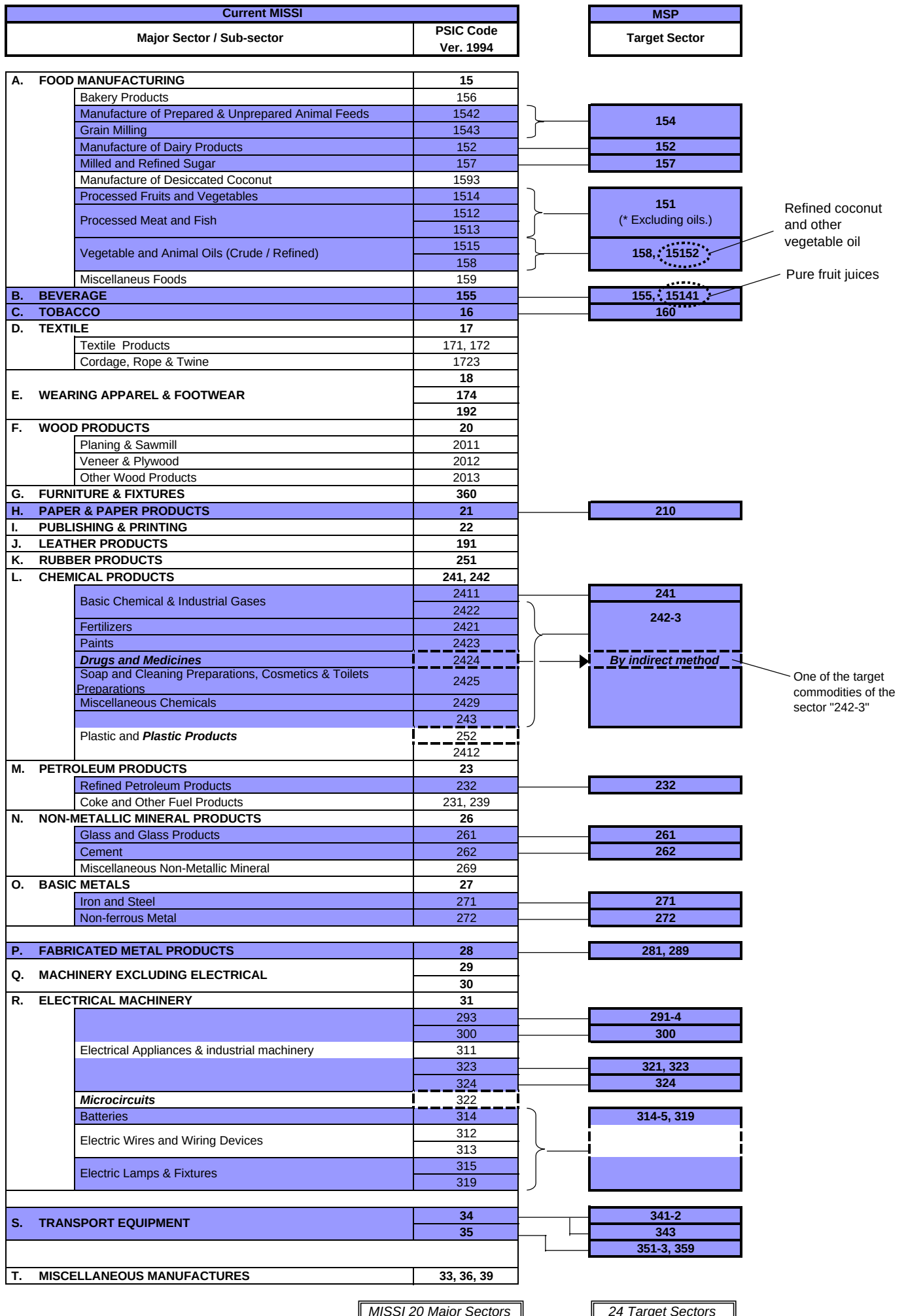
In the improvement scheme of the MISSI by the NSO when this Study was initiated, it was intended that the number of sectors targeted for the MSP would be gradually increased, while still keeping the number of target establishments within a realistic implementation range. Because of the policy of excluding sectors that are inappropriate for a commodity-based volume survey, however, the garments sector, which has the highest number of establishments, ended up being excluded from the MSP. Consequently, rather than shifting in a stepwise progression from the MISSI to the MSP, all of the sectors to which a commodity-based volume survey could be appropriately applied will be shifted to the MSP at the same time.

Table S5-2 MSP Final Target Sectors

Sector Code	Sector Title	Share in Total Value-added (%)
A. Food Manufacturing		(11.3)
151	Processed meat, fish, fruits and vegetables	7.0
158,15152	Coconut and vegetable oil (crude and refined)	
152	Dairy products	1.6
154	Animal feeds and grain milling	1.3
157	Milled and refined sugar	1.4
B. Beverage		(6.3)
155,15141	Beverage	6.3
C. Tobacco		(4.3)
160	Tobacco products	4.3
H. Paper and Paper Products		(1.9)
210	Paper and paper products	1.9
L. Chemical Products		(9.2)
241	Basic chemicals	1.8
242-3	Chemical products	7.4
M. Petroleum Products		(11.9)
232	Refined petroleum products	11.9
N. Non-Metallic Mineral Products		(3.5)
261	Glass products	0.7
262	Cements	2.8
O. Basic Metals		(4.0)
271	Basic iron and steel	3.0
272	Non-ferrous metals	1.0
P. Fabricated Metal Products		(1.6)
281,289	Fabricated metal products	1.6
R. Electrical Machinery		(9.9)
291-4	Domestic electric appliances	1.2
300	Office, accounting and computing machinery	1.5
314-5,319	Batteries and lighting equipment	1.9
321,323	Electronic valves, TV and radio transmitters, and line telephony	4.5
324	TV and radio receivers, and sound or video recording apparatus	0.8
S. Transport Equipment		(7.0)
341-2	Motor vehicles and bodies for motor vehicles	5.5
343	Parts and accessories for motor vehicles	
351-3,359	Motorcycles	1.5
TOTAL		70.9

Note: The sector code is based on PSIC 3-digit classification.

Figure S5-2 Target Sectors of MISSI and MSP



5.3 Target Commodities

5.3.1 Commodity Selection Policy

As a rule, just as with the basic design, commodities targeted for the MSP are: 1) finished products destined for the consumer market; or 2) intermediate input goods distributed in the market. In commodity selection of the basic design, PSIC 5-digit classifications accounting for at least 80% of the target sectors in terms of value added were first selected, and then specific commodity names were identified, referring to the commodities indicated in various NSO statistics. As the last step, any necessary corrections were made based on visits to and surveys of related organizations and enterprises, and a total of 168 commodities representing target sectors were selected.

The following points were considered when making the final selection.

1. Commodities are to be included for which volume data is necessary in order for government agencies to formulate industrial policies and accelerate investments, and in order for enterprises and industrial groups to promote their business.
2. Commodities are to be grouped in ways which make it easier for establishments to respond. A condition of the grouping is that it is possible to measure commodities in a group using the same unit.
3. The number of commodities is to be held within a manageable range by the NSO.

5.3.2 Final Selection of Target Commodities for MSP

When the final selection of the commodities and their measurement units had begun, information relating to commodity selection obtained in the pretest survey was organized to fit on one page per sector. Table S5-3 shows the chemical products sector as an example. Information consists of; 1) products for which no responses had been received from any establishments for a period of three months; 2) products for which an inappropriate measurement unit had been pointed out; 3) products claimed by an establishment for unclear definition, such as composite-type products; 4) products proposed for deletion or addition; and 5) products that were the principal products of an establishment classified in a wrong sector by mistake. The final selections for all of the sectors were made based on these tables. When necessary, inquiries were made to leading establishments, industrial groups, and other organizations.

Final commodity lists of the MSP are shown in Annex-1 “MSP Questionnaires”. The following two points are special items that were carried out when the final selection was implemented.

1. In order to group commodities in a way that makes it easier for establishments to provide responses:

- a) The “Pure Fruit Juices” of PSIC 15141 were included in the 155 Beverage sector.
- b) The “Refined Coconut” of PSIC 15152 was included in the 158 sector.

2. The following commodity groups were inappropriate for the MSP, and were not included as MSP targets.

a) Products too diverse for inclusion-1

Examples: Pharmaceuticals and cosmetics

Solution: These are one commodity item in the chemical products sector (PSIC 242-3) that is kept in the MSP as a target sector. The measurement unit for pharmaceuticals and cosmetics was changed to value.

d) Products too diverse for inclusion-2

Examples: Plastic products

Solution: The plastic products sector (PSIC 252) was left out of the MSP.

c) Products for which fluctuations in specifications and prices are extremely drastic

Examples: ICs and electronic components

Solution: The electronic components sector (PSIC 322) was left out of the MSP.

Table S5-3 Commodity Final Selection Work Sheet

242 Manufacture of other chemical products

Finished Products covered by Pre-test Survey

Code	Name	Description	Units	No Entry	Suggested for Deletion	No. of Answers	Unit of Measurement			Delete?	Confirmed Unit
							Suggested for Correction	Recommended Unit	No. of Answers		
101	Fertilizers and nitrogen compounds	Includes: mixed or composite fertilizers (perfect gro or 14-14-14, 18-46-0, 16-20-0, ammosol or 21-0-0), ammonium nitrate and ammonium sulfate	Ton								
102	Drugs and medicines	Includes: antibiotics (penicillin, sulfonamides, tetracycline's, streptomycin, chloromphenicols and other antibiotics combinations), vitamins (vitamin A, D, and E, vitamin B and B complex, vitamin C, multivitamin w/ or w/o minerals, iron preparations, pre and post natal vitamins, vitamin drops, vitamin powder, appetite stimulants and other nutritional preparations) and analgesic and antipvretics	Ton				○	SPU (Standard Production Unit)	1		Million Pesos
103	Soap and detergents	Includes: toilet soap (including medicated) and laundry soap (detergent bars and detergent powder)	Ton								
104	Other toilet preparations (inc. glycerin, shampoo, etc.)	Includes: glycerin (crude or refined), skin lotions, shampoo and body powder (baby powder)	Ton								

Finished Products suggested for inclusion

Name	No. of Answers	Unit	Main Raw Materials	Include?	Unit of Measurement
Commercial Empty Bottles	1	Piece	Glass		
Epoxy Adhesive (*)	1	Kilogram	Resiners		
Paint (*)	1	---	---	○	Ton
House Paint (*)	1	---	---		
Mighty Bond (*)	1	Kilogram	Polythelene		
Thinner (*)	2	---	---		
Varnish (*)	1	---	---		
Polythelene (*)	1	Kilogram	---		

(*) Suggestion from disqualified establishments (status 4).

Products of "Status 4" establishments

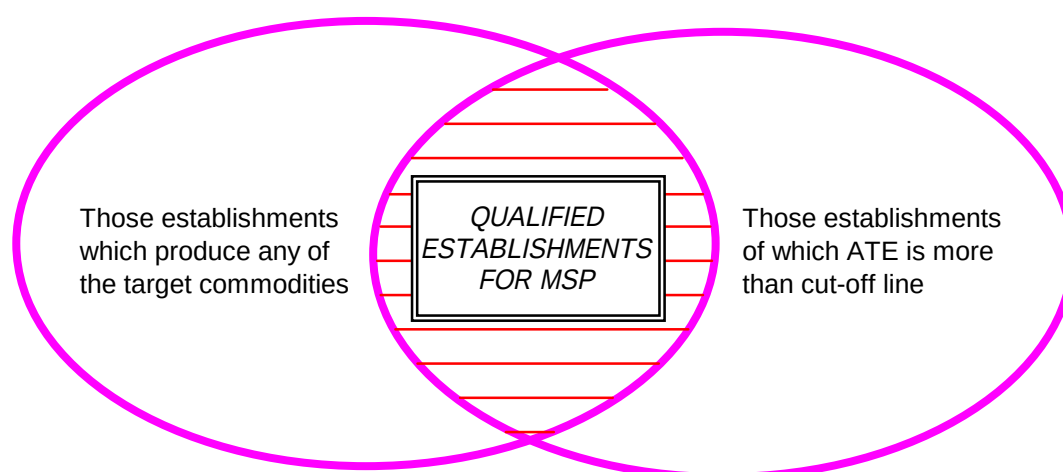
Name	No. of Answers	PSIC 5-digit	Include?	Unit of Measurement
Insecticide	1	242-20		
Poultry prod (*)	1	242-20		
Pesticides	1	242-20		
Paint (*)	8	242-31	○	Ton
Varnish	1	242-32		
Solvents	1	242-33		
Natural fulatine (*)	1	242-34		
Turco rust conver (*)	1	242-34		
Coating (*)	1	242-39		
Veterinary medicines (*)	2	242-41		
Vaccine (*)	1	242-41		
Toilet cleaner (*)	1	242-52		
Air freshener (*)	1	242-54		
Anfo (pexpo) (*)	1	242-91		
Power gel (*)	1	242-91		
Booster (*)	1	242-91		
Excel (*)	1	242-91		
Adhesive (*)	1	242-94		
Sealants (*)	1	242-94		
Carbon (*)	1	242-95		

(*) Products of disqualified MISSI samples.

5.4 Target Establishments

As shown in Figure S5-3, there are two conditions for an establishment being selected as an MSP target: 1) it must be producing any of the target commodities; and 2) it must have ATE above the cut-off line specified for each sector.

Figure S5-3 Qualification of MSP Target Establishments



5.4.1 Selection Flow for Target Establishments

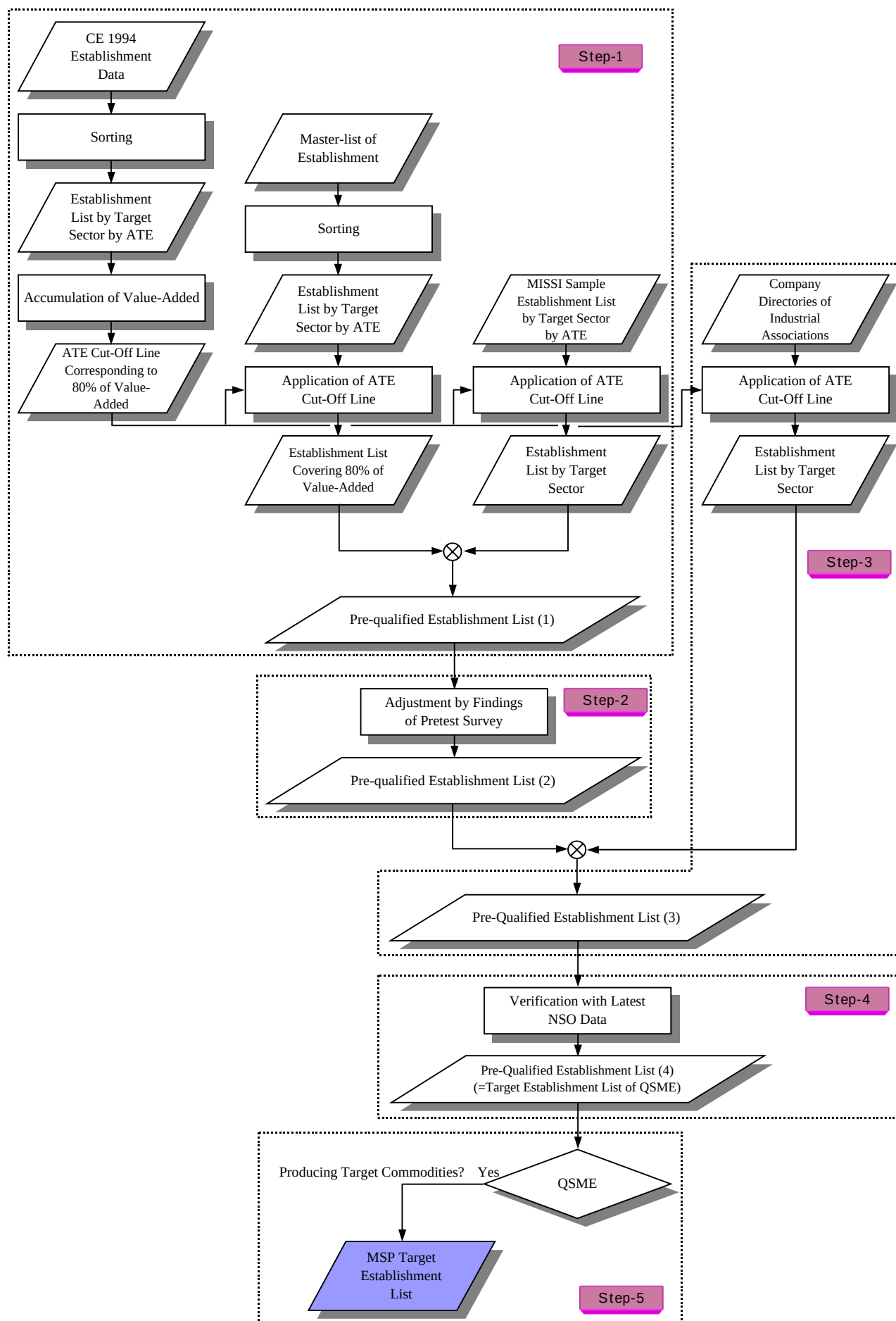
Figure S5-4 shows the selection flow of the target establishments for the MSP. The pretest survey targeted only Metro Manila and Calabarzon, but the MSP targets establishments from all over the country. Because the target region was expanded, and because the sectors and commodities were reviewed after the pretest survey, it was necessary to go through the establishment selection process once again, starting with the step of selecting establishments based on the ATE cut-off line from the Master List of Establishments. However, the list was completely revised to re-classify those establishments identified to have been classified in a wrong sector and to eliminate those that were confirmed not to exist any more, such as bankrupt establishments, in the course of the pretest survey.

Selection of the target establishments consists of the following five steps.

- Step 1 An ATE cut-off line equivalent to value added of 80% is established for each target sector using the 1994 census, and this cut-off line is applied to the Master List of Establishments and the MISSI sample list.

- Step 2 Corrections on establishment classifications etc. are made based on the pretest survey results.
- Step 3 Establishments from the lists of the industrial associations are added after screening by the ATE cut-off line. Adjustments are made as necessary based on the information of the associations.
- Step 4 The list is verified with the latest information available from the NSO.
- Step 5 A Qualification Study for Manufacturing Establishments (QSME) is carried out to identify those establishments actually producing the target commodities.

Figure S5-4 Selection Flow of MSP Target Establishments



5.4.2 Final Selection of Target Establishments for QSME

Table S5-4 shows the results of Steps 1 to 4. As for Steps 1 to 3, special items are noted in Table S5-5.

5.4.3 Qualification Study for Manufacturing Establishments (QSME)

The QSME was conducted as the final step (Step 5) in selecting the target establishments for the MSP. The 705 establishments on the pre-qualified establishments list obtained as a result of Step 4 were targeted for the survey. Twenty-four types of questionnaires for each of the 24 target sectors specifying the target commodities were prepared. If there was a possibility that an establishment was producing commodities that are classified in multiple sectors, more than one questionnaire was prepared for the establishment.

Rather than distributing the questionnaires to the establishments, enumerators took the questionnaires with them when they visited the establishments, and have them filled out. The main purpose was to confirm that the establishment produces the target commodity, but in cases where it was confirmed that the establishment is not producing any of the target commodities, the enumerators asked for the name of the commodity actually being produced. If the commodity happens to be one targeted for a different sector, and the ATE of that particular establishment is above the cut-off line, that establishment will become a target in the sector for the MSP. Enumerators obtained not only information on the commodities from the establishments, but also other information necessary in order to conduct the MSP, such as ATE, survey routes, and the names of contact persons.

Table S5-6 is the result of the QSME. The number of target establishments for the MSP is 432.

Table S5-4 Four-Step Selection of Pre-Qualified Target Establishments for MSP

(Unit: Establishment)

Major Sector / Secor		STEP-1		STEP-2		STEP-3		STEP-4		ATE Cut-Off Line
		Total	MISSI	Total	MISSI	Total	MISSI	Total	MISSI	
A. Food Manufacturing										
151	Processed meat, fish, fruits and vegetables	139	40	121	38	121	38	89	24	100
158,15152	Coconut and vegetable oil (crude and refined)							17	3	100
152	Dairy products	16	8	15	7	16	8	9	3	200
154	Animal feeds and grain milling	36	23	35	21	35	21	29	15	100
157	Milled and refined sugar	15	12	15	12	15	12	14	12	500
B. Beverage										
155,15141	Beverage	48	10	51	11	52	12	52	11	200
C. Tobacco										
160	Tobacco products	12	11	11	10	11	10	6	6	200
H. Paper and Paper Products										
210	Paper and paper products	67	19	66	17	66	17	57	14	100
L. Chemical Products										
241	Basic chemicals	63	21	65	30	65	30	32	9	100
242-3	Chemical products	71	45	44	29	44	29	34	19	200
M. Petroleum Products										
232	Refined petroleum products	6	6	6	6	6	6	3	3	200
N. Non-Metallic Mineral Products										
261	Glass products	11	6	12	6	12	6	9	4	200
262	Cements	19	10	18	10	22	10	15	9	200
O. Basic Metals										
271	Basic iron and steel	52	29	39	22	41	22	22	10	200
272	Non-ferrous metals	7	7	7	7	7	7	4	4	1000
P. Fabricated Metal Products										
281,289	Fabricated metal products	90	8	97	13	96	13	80	12	100
R. Electrical Machinery										
291-4	Domestic electric appliances	77	18	79	21	90	21	84	15	50
300	Office, accounting and computing machinery	44	24	41	24	43	24	32	14	1000
314-5,319	Batteries and lighting equipment	43	10	40	7	40	7	35	5	100
321,323	Electronic valves, TV and radio transmitters, and line telephony	24	8	17	7	17	7	14	4	100
324	TV and radio receivers, and sound or video recording apparatus	18	8	15	7	18	8	12	4	500
S. Transport Equipment										
341-2	Motor vehicles and bodies for motor vehicles	12	8	11	7	15	7	17	5	100
343	Parts and accessories for motor vehicles	26	5	24	5	36	10	34	9	100
351-3,359	Motorcycles	31	7	30	6	5	4	5	4	All
TOTAL		927	343	859	323	873	329	705	218	

Note : 1. Nominal basis.

2. Procedures of each step are as follows:

Step-1: Selection of establishments from Master List of Establishments and MISSI's sample list, based on ATE cut-off line that corresponds to at least 70% of sectoral value-added.

Step-2: Correction of classification and replacement/deletion of establishments, based on the information obtained from the Pretest Survey.

Step-3: Addition of establishments from member lists of major industrial associations.

Step-4: Verification referring to the results of ASE 1998 etc.

Table S5-5 Notes on Step 1-3 of Target Establishment Selection (1/2)

- Step-1: Selection of establishments from Master List of Establishments and MISSI's sample list, based on ATE cut-off line that corresponds to at least 70% of sectoral value-added.
- Step-2: Correction of classification and replacement/deletion of establishments, based on the information obtained from the Pretest Survey.
- Step-3: Addition of establishments from member lists of major industrial associations.
- Step-4: Verification referring to the results of ASE 1998 etc.

Sector (PSIC 3-Digit)	Sector Title	Notes	
151 158	Processing of meat, fish, fruit and oils	Step - 3 Note	Confirmed that establishments of leading companies (San Miguel, RFM, Purefoods, Delmonte, Century) are included. <i>Questionnaire of pretest survey did not include commodities of PSIC 158.</i>
152	Dairy products	Step - 3	Confirmed that establishments of leading companies are included.
154	Animal feeds / Grain milling		
155	Beverages	Step - 2 Step - 3	"Fruit juice" is listed on PSIC 155 questionnaire though PSIC classification is 151. Rectified errors found in pretest survey. Confirmed that establishments of leading companies (San Miguel, Asian Brewery, LTDI, Cosmos, Delmonte, Coca Cola, Pepsi) are included.
157	Sugar	Step - 3 Note	Confirmed that all the mills covered by SRA survey are included with the exception of three small ones. <i>Sales and inventory data are not available from SRA.</i>
160	Tobacco	Step - 3	Checked against NTA directory (8 manufacturers).
210	Pulp, paper and paperboard	Step - 3	Checked against TAPPI directory (38 mills).
232	Refined petroleum	Note	<i>DE has monthly production, sales and inventory data from three refineries.</i>
241	Basic chemicals	Step - 3	Confirmed that seven polymer plants (PE, PP, PVC, PS) are included.
242-3	Chemical products		
261	Glass and glass products		
262	Cements	Step - 3	Checked against PCMC directory (18 manufacturers), and added four establishments with ATE above cut-off line.
271	Iron and steel	Step - 3	Checked against AISIF directory 2001 (140 manufacturers), and added three establishments with ATE above cut-off line.

Table S5-5 Notes on Step 1-3 of Target Establishment Selection (2/2)

Sector (PSIC 3-Digit)	Sector Title	Notes	
272	Non-ferrous metal		
281 289	Structural metal products		
291-4	Domestic electric appliances	Step - 1 Step - 3 Step - 3	Selection was done only from 291 and 293. Checked against AHAM directory (18 manufacturers) and CHEF directory (10 manufacturers), and added eight establishments with ATE above cut-off line. Added two establishments of "car air-conditioner" from MVPMAP directory.
300	Office & Computing machinery	Step - 1,2 Step - 3	Selection (Step -1 and 2) was done from both PSIC 300 and 322 with cut-off line of ATE 1000 because "disk drives" are products of establishments of PSIC 322. Checked against SEIPI directory 2001 for "disk drives" manufacturers and added two establishments with ATE above cut-off line.
314-5 319	Cell, Lighting equipment, etc.		
321 323	Electric valves, TV transmitters		
324	TV & Radio receivers, etc.	Step - 3 Step - 3	Checked against CEPMA directory (17 manufacturers), and added three establishments with ATE above cut-off line. Confirmed that CLARION, which is the leading "car-stereo" manufacturer, is included.
341-2	Motor vehicles	Step - 2 Step - 3	Transferred KAWASAKI to 359. Checked against CAMPI and TMA directories and added four assemblers with ATE above cut-off line.
343	Parts for automobiles	Step - 3 Step - 3	Checked against all manufacturers from MVPMAP directory which produce target commodities and added one with ATE above cut-off line. Added all the assemblers listed CAMPI and TMA directories.
351-3 359	Motorcycles (& Bicycles)	Step - 3	Deleted "Bicycle" from the questionnaire. Maintained only five motorcycle manufacturers confirmed by MDPPA.

Table S5-6 MSP Target Establishments (Results of QSME)

(Unit: Establishments)

Major Sector / Sector		Pre-qualified Establishments					Re-classification	Final Number
		Total	Status a	b	c	n.a.		
A. Food Manufacturing								
151	Processed meat, fish, fruits and vegetables	89	66	15	1	7	0	66
158,15152	Coconut and vegetable oil (crude and refined)	17	13	4	0	0	4	17
152	Dairy products	9	7	1	0	1	1	8
154	Animal feeds and grain milling	29	26	3	0	0	3	29
157	Milled and refined sugar	14	14	0	0	0	0	14
B. Beverage								
155,15141	Beverage	52	43	6	1	2	1	44
C. Tobacco								
160	Tobacco products	6	6	0	0	0	0	6
H. Paper and Paper Products								
210	Paper and paper products	57	35	12	2	8	0	35
L. Chemical Products								
241	Basic chemicals	32	17	12	0	3	0	17
242-3	Chemical products	34	26	3	3	2	0	26
M. Petroleum Products								
232	Refined petroleum products	3	3	0	0	0	0	3
N. Non-Metallic Mineral Products								
261	Glass products	9	6	3	0	0	0	6
262	Cements	15	13	0	0	2	0	13
O. Basic Metals								
271	Basic iron and steel	22	9	8	0	5	2	11
272	Non-ferrous metals	4	2	2	0	0	0	2
P. Fabricated Metal Products								
281,289	Fabricated metal products	80	32	33	6	9	1	33
R. Electrical Machinery								
291-4	Domestic electric appliances	84	29	39	4	12	0	29
300	Office, accounting and computing machinery	32	10	20	0	2	2	12
314-5,319	Batteries and lighting equipment	35	8	18	0	9	1	9
321,323	Electronic valves, TV and radio transmitters, and line telephony	14	3	11	0	0	1	4
324	TV and radio receivers, and sound or video recording apparatus	12	6	4	0	2	4	10
S. Transport Equipment								
341-2	Motor vehicles and bodies for motor vehicles	17	16	0	1	0	0	16
343	Parts and accessories for motor vehicles	34	15	16	1	2	2	17
351-3,359	Motorcycles	5	5	0	0	0	0	5
TOTAL		705	410	210	19	66	22	432

- Note :
1. Nominal basis
 2. "Statuses" mean as follows:
 - a: The establishment is producing the commodities listed in the questionnaire.
 - b: The establishment is not producing the commodities listed in the questionnaire but is producing other commodities.
 - c: The establishment is not engaged in manufacturing but is engaged in recycling, repairing, selling or other activities.
 - n.a.: The establishment is permanently closed, or cannot be located etc.
 3. "Re-classification" means re-classifying the "Status b" establishments into proper sectors.
 4. "Final Number" = "Status a" + "Re-classification"

5.5 Questionnaires

5.5.1 Questionnaire Sections

The pretest survey questionnaires consisted of three sections: Finished Products, Raw Materials, and Production Capacity. The response rates for the three sections were 95%, 47%, and 69%, with the rate for the Raw Materials section being the lowest. Also enumerators found out that most of establishments did not have an accurate grasp of the monthly inventory levels of raw materials. The MSP is a new type of survey in the Philippines in that its prime objective is to survey the production, sales, and inventory volumes of each of the target finished products. In comparison with establishment surveys, the costs involved in the field works and data process up to the dissemination of statistics and indices of the MSP are rather high. Taking the above circumstances into consideration, it was decided to leave the Raw Materials section out of the MSP.

Production Capacity section is maintained only to the sectors where production capacity is easily defined so that the questions will not pose additional burden on the respondents. The ATE section was added for the purpose of monitoring the qualifications of the establishments on an ongoing basis.

5.5.2 Definitions of Survey Items

This section discusses definitions of the survey items and the filling instructions for the establishments, which are included in the enumerator's manual.

(A) Inventory volume at the beginning of reference month

The volume reported in "Inventory volume at the end of reference month" for the previous month's questionnaire is entered.

(B) Production volume

The volume of production at the establishment during the reference month is filled in, using the specified measurement unit. The volume of work-in process and the volume of products repaired or fixed are not included.

The establishment that has actually manufactured must report the production volume. It is called the principle of origin of commodities. Labor subcontractors

should report their products as long as they ship the target commodities whether they sold the products to the client company, or they were paid only the costs of labor. Conversely, products purchased or received from subcontractors cannot be included.

(C) Purchased, imported, or received volume

Volume of products purchased (including those imported), or received from other establishments (whether or not in the same enterprise) or from subcontractors, during the reference month is filled in, using the specified measurement unit.

(D) Internal consumption volume

Volume of products used in the succeeding manufacturing process as materials or components within the same establishment, and converted to another product, during the reference month is filled in, using the specified measurement unit. One example is the clinkers consumed for cement production in the same establishment.

(E) Domestic sales volume

Volume of products sold to the domestic market, either directly or through an intermediary, is filled in, using the specified measurement unit.

(F) Export volume

Volume of products exported, either directly or through an intermediary, is filled in, using the specified measurement unit.

(G) Transfer volume

Volume of products that were transferred rather than sold is filled in, using the specified measurement unit. Examples include products transferred to another establishment in the same enterprise, and those delivered to a client company in case of labor subcontractors. Production machinery used for internal production lines is another example.

(H) Inventory volume at the end of reference month

The volume of inventory as of the end of the reference month is entered, using the specified measurement unit. Work-in-process should not be included.

Note) The formula $(H) = (A) + (B) + (C) - (D) - (E) - (F) - (G)$ must be true for the entered figures.

(I) Production value

The production value as determined at the producer's price (production volume x producer's price) is filled in. Producer's price (Ex-factory price) includes indirect taxes and packing expenses, but does not include transportation expenses and insurance. If all of the products were transferred, they should be valued at the producer's price as though sold. It must be noted that the definition of the production value in the MSP differs from that used in other NSO surveys.

(J) Number of employees

The total number of employees as of the end of the reference month is filled in.

(K) Plant production capacity

The monthly production capacity of the establishment for the specified product is filled in, using the specified measurement unit.

The "production capacity" refers to the "maximum volume of production possible using the normal staff and existing equipment". The normal downtime required for maintenance is taken into consideration, but equipment that has been unused for a long period of time for overhauling is not considered as a part of existing equipment.

Questionnaires of some sectors stipulate the operation time that serves as the standard for calculating the production capacity.

5.5.3 Questionnaire Type

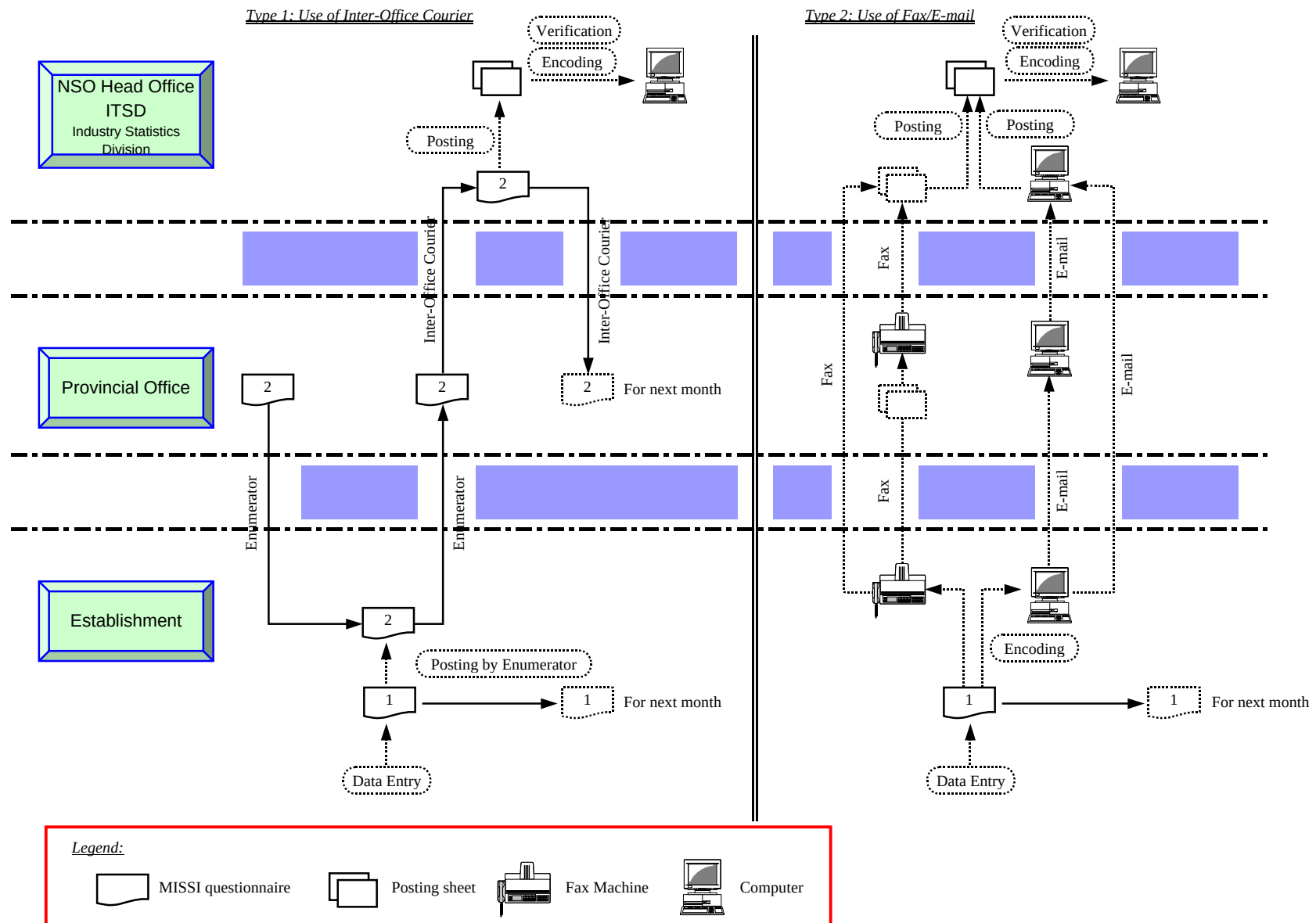
A "shuttle-type questionnaire" of single sheet type for twelve months' entries is used in the current MISSI. Two questionnaires are prepared for each establishment, with one being kept by the establishment throughout the year. The enumerator visits the establishment once a month with the other questionnaire, and copies data from the

questionnaire kept by the establishment. Following that, the filled-out questionnaires are sent from the local offices to the head office. At the head office, the data is copied to four types of posting sheets, and the questionnaires are immediately sent back to the local offices. The data examination is done with the posting sheets. After the examination has been completed, the posting sheets are used for data encoding.

There are some cases in which data is sent from the establishment to the local office or the head office by means of facsimile or electronic mail. Even in this case, the posting sheets are used for data examination.

Figure S5-5 shows the flow followed by the MISSI questionnaires described above. Advantages and drawbacks of the MISSI questionnaires and its operation flow are as follows.

Figure S5-5 Questionnaire Collection Flow of MISSI



<Advantages>

- Columns are provided for twelve months of entries on one sheet. The respondent can check the entries for the previous month at a glance.
- Large, thick paper is used for the questionnaires, assuring that they will not easily be lost.

<Drawbacks>

- The reported figures on the questionnaires are copied manually by the enumerator, and sent to the head office. No matter how carefully the transcription may be done, the possibility of the unforced errors cannot be denied. Any error, if it may happen, damages the accuracy of the results.
- The original data (= original questionnaire) for each month are not kept in the NSO head office. At the end of the year, the NSO collects the filled-in original questionnaires from the establishments, and then the respondents can no longer keep the original.

The MSP deals with far more survey items than the MISSI, making it problematic to arrange space of twelve months' entry columns on a single-sheet questionnaire. Also, it is preferable that entry data not be copied manually by enumerators or posted by the head office staff, in order to prevent unforced errors. The originals of the questionnaires must be kept not only at the establishment, but also at the head office and at the local offices, on an ongoing basis. The purpose of this is to facilitate prompt transactions on inquiries and confirmations likely to be made among the head office, local offices, and establishments concerning the entry data.

The MSP uses a questionnaire of a single sheet type for each month. In order to prevent possible errors in data transcription and posting, three originals are prepared for each month. Three originals are distributed to the establishment. The establishment uses carbon paper to fill out all of the three, and then keeps one, while the enumerator takes the other two. The enumerator sends one of those two originals to the head office, and the remaining original is kept at the local office.

Annex-1 contains one set of MSP Questionnaires for the 24 target sectors.

Chapter 6 New MISSI and Development of Industrial Indices

Chapter 6 New MISSI and Development of Industrial Indices

6.1 New MISSI

The final design package of the MSP is compiled in Chapter 5. As discussed in the chapter, there are sectors that occupy the important positions in the manufacturing industry in the Philippines but are not covered by the MSP for the reason of inadequacy to the commodity-based and volume-based survey. The future monthly survey for the manufacturing industry, therefore, will be a combination of the MSP and a part of the current MISSI that maintains the indirect method. In this report, the future monthly survey for the manufacturing industry is tentatively called “New MISSI”.

Figure S6-1 shows the concept of the new MISSI. Out of 20 “major sectors” covered by the current MISSI, 11 major sectors will be converted to the MSP. “Apparel & Footwear” continues to be covered by the indirect method. And it is proposed to drop the remaining 8 major sectors from the monthly survey because: 1) their value-added contributions are low; and 2) they may be a hindrance in meeting one of the key requisites of the survey, timeliness.

Major sectors comprise “sectors” or “sub-sectors”. Figure S6-2 compares the sub-sectors under the major sectors of the current MISSI with the sectors under the major sectors of the new MISSI. On the left side of this figure (underneath the title of “Current MISSI”), the current MISSI’s 20 major sectors and the sub-sectors that compose each major sector are listed. On the right side (under the title of “MSP”), there are sectors covered by the MSP and the corresponding relationship with the sub-sectors of the current MISSI. The MSP covers 24 sectors based on the PSIC 3-digit industrial classification.

Furthermore, under the title of “New MISSI (Starting in 2003)” on the right hand side, the scheme and index system of the new MISSI are shown. The sector level indices are integrated into each major sector to which they pertain, and become 11 series of the major sector level index. At this major sector level, the major sector level index of “Apparel & Footwear” is computed by the indirect method. In addition to the above-mentioned 24 sectors, “Plastic products” and “Microcircuits” covered by the indirect method due to the characteristics of the products are integrated into the MSP major sector indices.

This chapter offers detailed proposals regarding the development of “Industrial Indices” produced from data obtained by the MSP and new indices by the new MISSI. This chapter will also make reference to the relationship of the new MISSI indices and the current MISSI indices, as well as to the aggregation of both indices.

Although not specified in Figure S6-2, the index series of the major sector level are furthermore integrated into one as the index corresponding to the total manufacturing industry. Needless to say, this index represents the overall trend of the Philippine manufacturing industry. In the sense that it derives from a combination of the MSP indices by direct method and the current MISSI index by indirect method, it is totally different from that in the past. The development of industrial indices for the new MISSI scheme is completed when the computation of the index for the total manufacturing industry has been achieved.

Figure S6-1 Concept of New MISSI

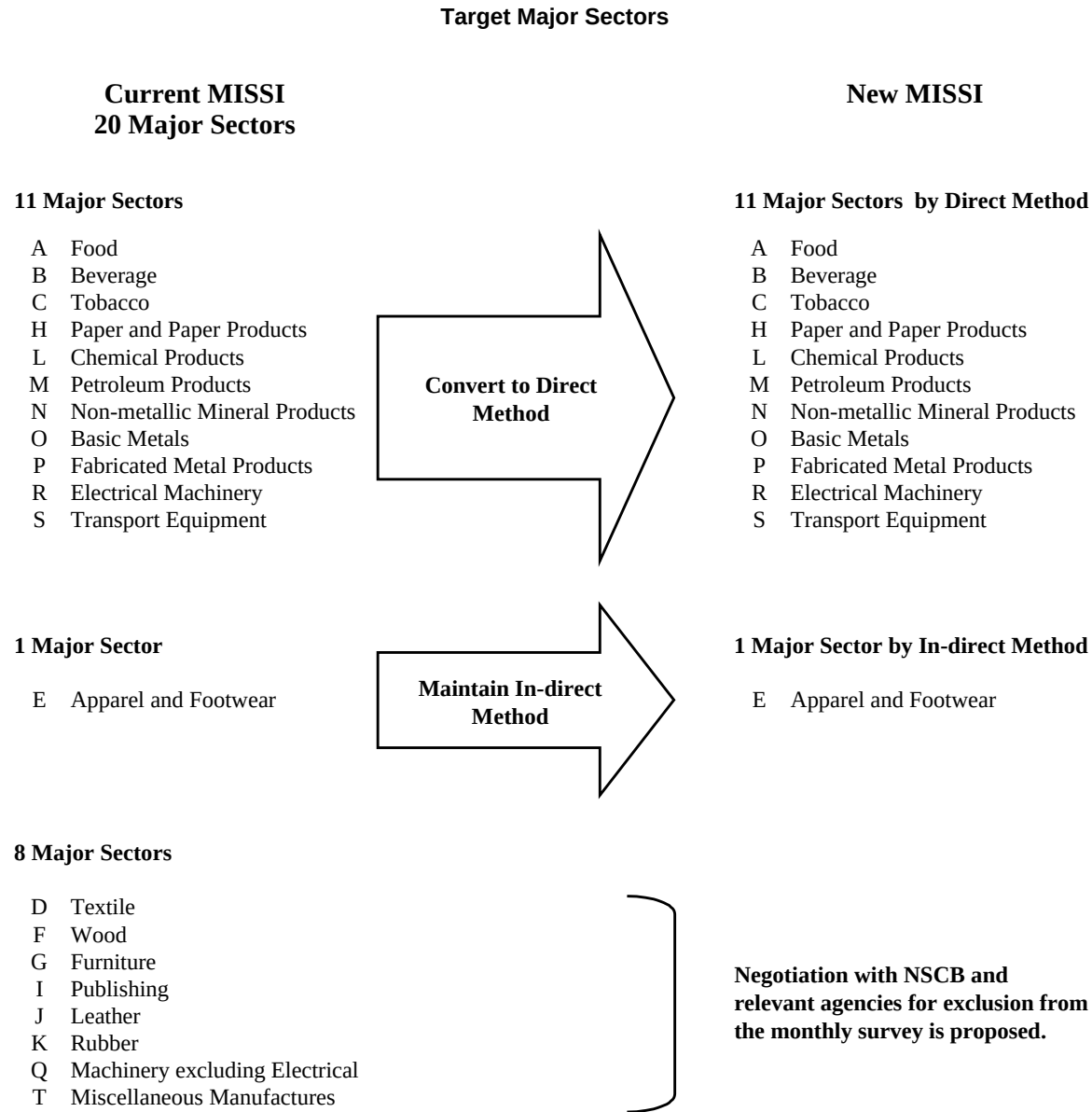
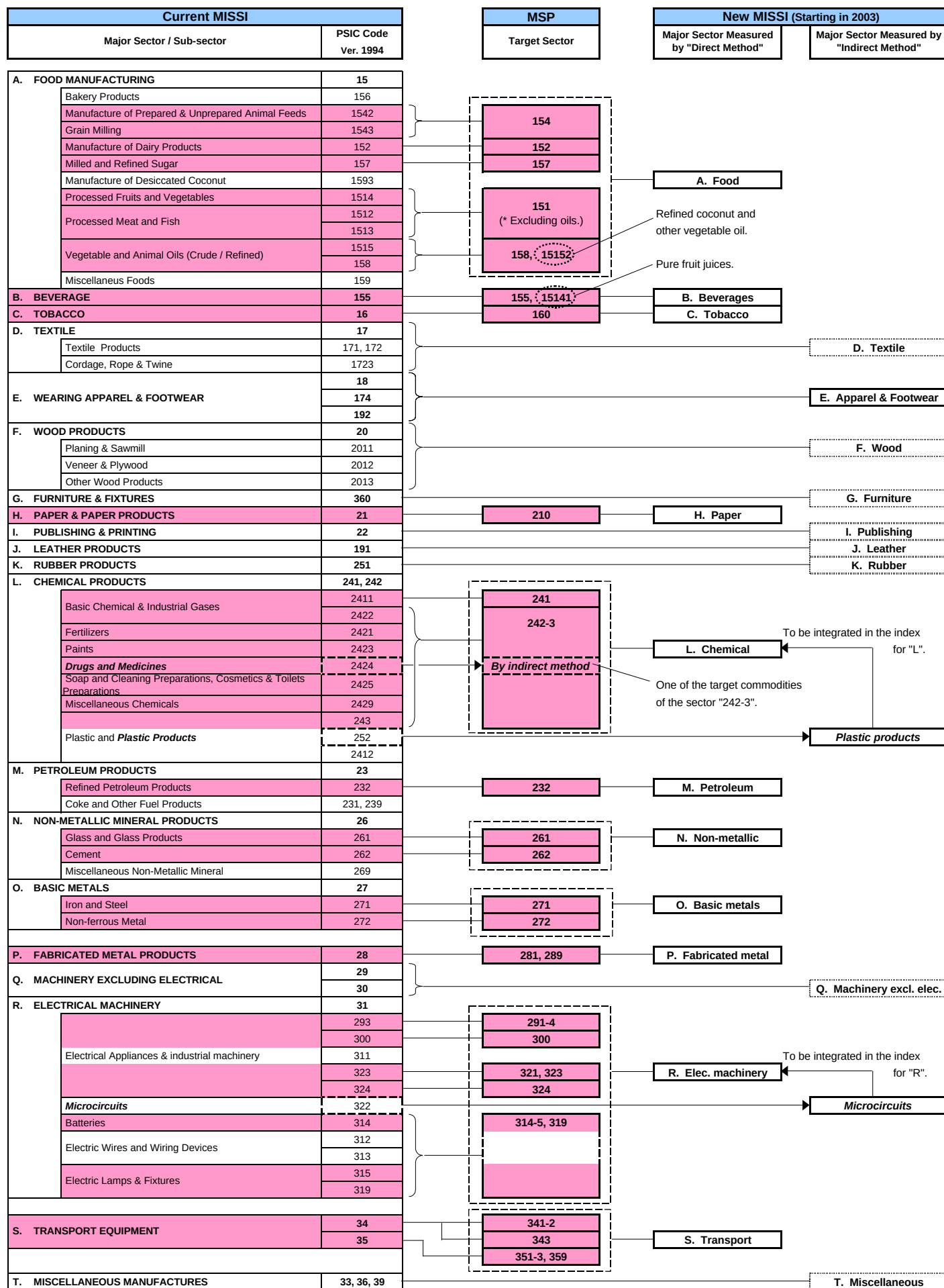


Figure S6-2 Scheme of New MISSI



A.-T.: MISSI's 20 Major Sectors

24 Target Sectors

11 Major Sectors

< NOTE >

Sectors proposed to negotiate with NSCB for deletion from the improved MISSI.

6.2 Basic Guidelines for Development of MSP Industrial Indices

6.2.1 What Are Industrial Indices?

Industrial indices are economic statistical indicators composed of multiple indices that express the general trend of production activities in the manufacturing industry of a country (or region). Although there are many types of economic indicators, the industrial indices are originally flash indicators that show the short-term changes in production, sales and inventory of the manufacturing industry in terms of volume. They are absolutely necessary in order to be able to grasp the business trends in real time. The industrial indices are provided in most countries in the world, as the indices are the basic statistics used in various processed statistics such as national income statistics.

“Index”, needless to say, expresses the relative differences in ratios between statistic numerical figures of the same type. For example, indicators that show in what percentage the income level of a household is higher (or lower) in comparison to another household or indicators that express the percentage increase (or decrease) in the automobile production volume in a country are called indices.

Though indices can be used to compare different regions and different periods of time, it is generally used for time-series comparison by calculating the ratio of the base period versus another period, whereas the base time figure is usually referred to as 100.

The industrial indices are also made with the purpose of grasping the time-series changes in production activities in the manufacturing industry.

Besides the industrial indices, the MSP generates “absolute figures” as a main statistical item. The industrial indices are statistical indicators of a volume basis, as they are calculated from the absolute figures related to each target commodity. However, although an absolute figure expresses an absolute level of production activity of the manufacturing industry, an industrial index shows the change in time and the relative level of a certain period of time in comparison to the base period (=100).

6.2.2 Index Items

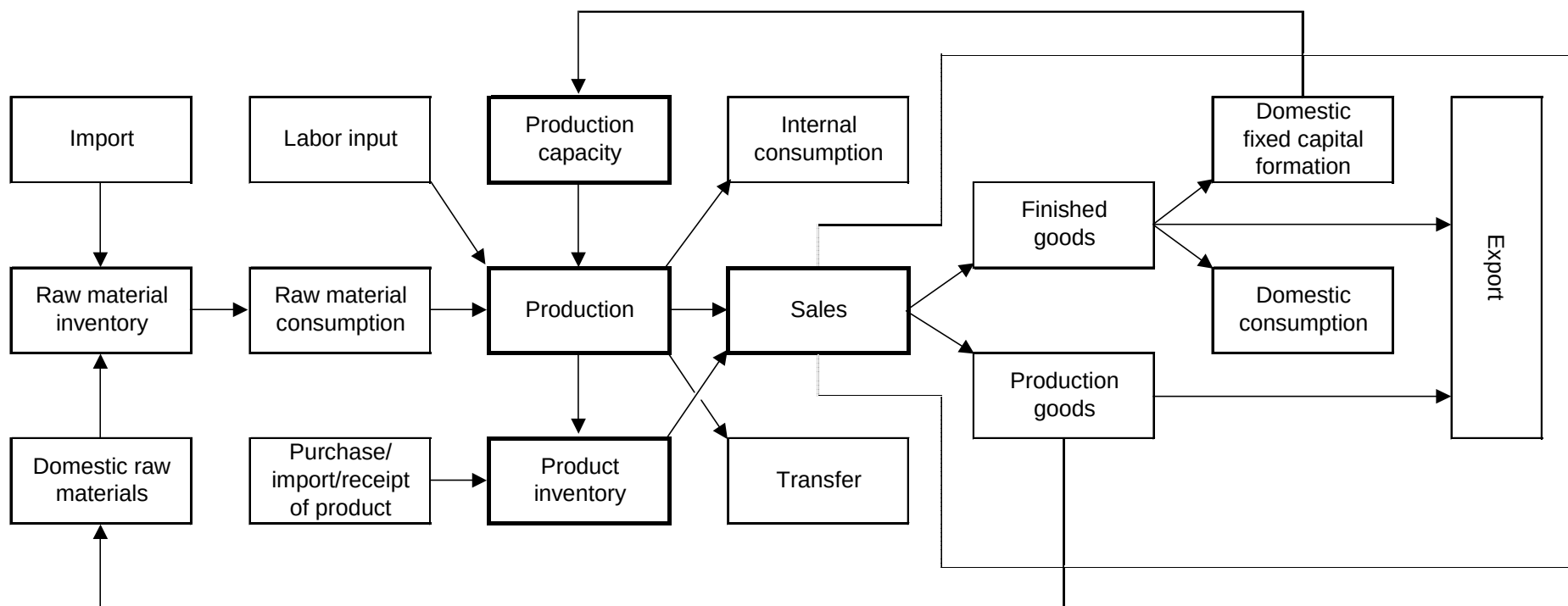
(1) Production activity process of the manufacturing industry

Manufacturing establishments produce a wide variety of industrial commodities by making use of various raw materials and operating manufacturing equipment, and sell the products to their clients by controlling the inventories.

Figure S6-3 shows the general process of production activity of the manufacturing industry, including production, sales and inventory. The manufactured commodities are sold to bodies that demand them while a part remains in the manufacturing establishment as inventory. The sold products are grossly classified in production goods and finished goods that will be provided to end-users. A part of the final goods will be consumed in households apart from the manufacturing process, while the rest will be assigned to the fixed capital formation including equipment investments and construction investments. There are cases that both of the production goods and finished goods are exported to satisfy demands in foreign countries.

The industrial indices provided by the MSP basically needs to be a statistics package composed of various indicators that express the trends of these kinds of production activity process in a versatile way. Therefore, the industrial indices must be made of various index items related to such main elements of production activity as “production”, “sales” and “inventory”.

Figure S6-3 Production Activity Process of Manufacturing Industry



(2) Major index items

In this section, the main items for the industrial indices that respond to the various aspects related to the production activity of the manufacturing industry, which are shown in Figure S6-3, are listed. All of them are volume indices that are calculated based on the direct method, where the index is calculated from an absolute figure of individual commodity. Thus, the VaPI and PPI used in MISSI's indirect method, where the real value index is obtained by deflating each commodity value by the price index, are not required.

<Basic indices>

The original purpose of the industrial indices is to provide a group of indicators that serve as a common measure to assess the economic situation to statistics users. In particular, in order to grasp the general comprehension about the condition of manufacturing industry in a country, the industrial indices have to cover the following three items related to the production activities.

- Production : Trends of the supply side
- Sales : Trends of the demand side
- Inventory : The gap between supply and demand

Therefore, the following 4 index items can be listed as basic ones for the industrial indices.

a) Production index

Purpose: Indicate the production trend of manufactured products.

Individual index formula: $\frac{q_{it}}{q_{i0}} \times 100$

q : Volume of production,

0: Base period, t : Current period,

i : Selected commodities ($i = 1, 2, 3, \dots, n$)

Interpretation: Increase of this index implies that the product supply has been activated.

b) Sales index

Purpose: Indicate the trend of demand for manufactured products.

Individual index formula: Same as the production index mentioned above.
(Calculated from the sales volume data.)

Interpretation: Increase in this index implies that the product demand has been growing.

c) Finished product inventory index

Purpose: Indicate the trend of product stock level that has not yet been sold (shipped) from establishments.

Individual index formula: Same as the production index mentioned above.
(Calculated from the volume data of finished product inventory.)

Interpretation: Increase in this index can imply either of the following two situations:

- When the index rises due to the fact that the sales have not increased as much as the production, it predicts a future business slowdown.
--- Unintentional inventory increase.
- When the index rises due to the fact that establishments are increasing their stock of products based on expectation of a growth in the demand, it predicts a future business improvement.
--- Intentional inventory accumulation.

d) Finished product inventory ratio index

Purpose: Express whether the supply-demand relationship is getting tense or not, by observing the ratio of the product inventory to the sales.

Individual index formula: $\frac{q_{it}^I / q_{it}^S}{q_{i0}^I / q_{i0}^S} \times 100 = \frac{r_{it}}{r_{i0}} \times 100$

q^I : Volume of inventory, q^S : Volume of sales,

r : Ratio of inventory to sales

Interpretation: Increase in this index implies that the supply-demand relationship in the market is easing down.

<Other industrial indices>

Indices other than the basic indices are related mainly to production capacity, raw materials or labor input. Providers of the industrial indices must select the necessary items from these additional indices taking into consideration the needs of statistics users as well as restrictions of manpower and budget, among others.

a) Production capacity index

- Purpose: Indicate the production capacity level of manufacturing equipment of industrial products
- Individual index formula: Same as the production index mentioned above. (Calculated from the volume data of production capacity.)
- Interpretation: Increase in this index implies that the production capacity is being increased and reinforced.

b) Capacity utilization index

- Purpose: Indicate how much of the production capacity of manufacturing equipment is being used for producing the industrial products.
- Individual index formula:
$$\frac{q_{it}^P / q_{it}^C}{q_{i0}^P / q_{i0}^C} \times 100 = \frac{cu_{it}}{cu_{i0}} \times 100$$

 q^P : Volume of production,
 q^C : Volume of capacity,
 cu : Capacity utilization ratio
- Interpretation: Increase in this index implies that the production capacity of production equipment is being further used for a wider number of industrial products.

c) Labor input index

- Purpose: Indicate the level of labor input to produce the industrial products
- Individual index formula: Same as the production index mentioned above. (Calculated from the man-hour based labor input data.)
- Interpretation: Increase in this index shows a growth of labor input for production.

d) Labor productivity index

Purpose: Indicate the efficiency of labor for production of the industrial products.

Individual index formula: $\frac{q_{it}^P / l_{it}}{q_{i0}^P / l_{i0}} \times 100 = \frac{lp_{it}}{lp_{i0}} \times 100$

q^P : Volume of production, l : Labor input,

lp : Labor productivity

Interpretation: Increase in this index indicates an improvement in the efficiency of labor for production.

e) Raw material inventory index

Purpose: Indicate the trend of raw material stock level that has not yet been invested to the production activities.

Individual index formula: Same as the production index mentioned above. (Calculated from the volume data of raw material inventory.)

Interpretation: Increase in this index can imply either of the following two situations:

- When the index grows due to the fact that the production of industrial products has not increased as much as the procurement of raw materials, it predicts an economic slowdown.
--- Unintentional stock increase.
- When the index grows due to the fact that establishments are increasing their stock for raw materials based on expectation of growth in the production of products, it predicts a future economic recovery.
--- Intentional stock accumulation.

f) Raw material consumption index

Purpose: Indicates the consumption trend of raw materials put into the production activity.

Individual index formula: Same as the production index mentioned above. (Calculated from the volume data of raw material consumption.)

Interpretation: Increase in this index implies that the establishments are investing more raw materials to increase the production.

g) Raw material inventory ratio index

Purpose: Express whether the raw material stock is impending or not, by watching the ratio of the consumed raw materials to the raw material inventory.

Individual index formula:
$$\frac{q_{it}^{RI} / q_{it}^{RC}}{q_{i0}^{RI} / q_{i0}^{RC}} \times 100 = \frac{rm_{it}}{rm_{i0}} \times 100$$

q^{RI} : Volume of raw material inventory,

q^{RC} : Volume of raw material consumption,

rm : Ratio of inventory to consumption of raw material

Interpretation: Increase in this index implies that the raw material stock is growing against the volume needed for production.

(3) Index items for the MSP

Index items that are actually selected for the MSP from the total 11 mentioned in above (2) should be judged in accordance with the followings.

a) Adoption of basic indices

To begin with, the basic four index items should be adopted. This is the indispensable premise for the MSP to be able to provide the statistics users with industrial indices with minimum required information.

b) Items to be adopted other than the basic indices

The items to be adopted for the MSP aside from the basic four indices depend on the type of absolute figures that the MSP encloses. The MSP defines the following data items as objects of the survey.

<Section I: Finished Products>

(Survey items in terms of volume)

- (A) Inventory at the end of the previous month
- (B) Production
- (C) Purchased/Imported/Received
- (D) Internal consumption
- (E) Domestic sales
- (F) Export
- (G) Transfers
- (H) Inventory at the end of the month

(Survey item in terms of value)

- (I) Production --- valuated by producer's price

<Section II: Number of Employees>

- (J) Number of employees (=ATE) at the end of the month

<Section III: Monthly Production Capacity>

- (K) Monthly production capacity

* The monthly production capacity is surveyed exclusively in those sectors that are considered possible to measure.

According to the above-mentioned data items covered in the MSP, the items that the MSP will be able to provide are the followings:

- 1) Production index
- 2) Sales index
- 3) Finished product inventory index
- 4) Finished product inventory ratio index
- 5) Production capacity index
- 6) Capacity utilization index

6.2.3 Major Formulas for Volume Index and Adoption of the Laspeyres Formula

- (1) Major formulas for volume index: The Laspeyres formula and the Paasche formula

In order to understand the general situation of production activities in a country, observing the production change of individual commodities is not enough, since a wide and diverse variety of commodities are manufactured in the country. Therefore, instead of concentrating in individual commodities, the needs of making an index that expresses the general trend of production activities arises. This can be accomplished by choosing the major commodities manufactured in the country and aggregating in some way the individual indices that respond to each of those chosen.

When making this kind of general index, the following two points must be considered: a) how to aggregate the production volume of individual commodities measured in different units; and b) how to eliminate the influence of price change from the change in the nominal production value.

- a) How to aggregate the production volume of individual commodities measured in different units

The simplest method to aggregate the production volume in different measurement units is to convert the volume to the common monetary value (in Pesos, for example). In order to do so, the volume of each commodity should only be multiplied by the unit price of each commodity.

$$\text{Production value} = \text{Production volume} \times \text{Unit price} \quad \text{--- [1]}$$

If all the units are unified into Pesos, they can be simply added up. In this way, if the total value of all of the target commodities is calculated at each period of time including the base period, it is possible to calculate the general index in the sense of monetary value.

- b) How to eliminate the influence of price change from the change in the nominal production value

The method explained in a) above is still insufficient in order to grasp the general production trend based on the volume concept. The reason is that the unit price may change according to the calculation timing so that if the unit price at each period of time is used, an element other than the production volume (i.e., price

change) will affect the changes in the value that is calculated by the above-mentioned formula [1].

In general, this problem can be solved by applying the unit price at a certain period of time (for example, the base time). If the unit price is fixed, it becomes neutral to the changes in production value and there will be no problem even if the production volume is converted to the value according to formula [1]. In other words, using a fixed unit price enables to handle the volume in the forms of monetary value.

The calculation method for the general index described above can be expressed by the following formula.

$$Q_t^L = \frac{\sum_{i=1}^n p_{i0} q_{it}}{\sum_{i=1}^n p_{i0} q_{i0}} \times 100 \quad \text{--- [2]}$$

Q: Aggregated index, q: Volume, p: Price, 0: Base period,
t: Current period, i: Selected commodities ($i = 1, 2, 3, \dots, n$)

The formula [2] uses the unit price at the base period (p_{i0}) when calculating the volume in monetary value and is called “Laspeyres” formula. This formula is used most commonly to calculate the general index in terms of volume.

Regarding the Laspeyres formula, it has been pointed out that an upward bias arises due to use of the unit price of the base period. Generally, prices of commodities that are growing in production volume decreases due to the scale economy, while those of commodities that are declining either increase or become rigid. When commodities of these two different types are calculated in monetary value, based on the fixed unit price of the base period for a long time, the growing commodities will be over-valuated while the deteriorating commodities will be sub-valuated. As a result, the general index that is obtained by integrating the indices of each commodity throws out an upward bias.

There is another formula called the “Paasche” formula which is as shown in the following [3], it uses the unit price at the current period (p_{it}) instead of the base period as the fixed price.

$$Q_t^P = \frac{\sum_{i=1}^n p_{it} q_{it}}{\sum_{i=1}^n p_{it} q_{i0}} \times 100 \quad \text{--- [3]}$$

The Paasche formula, like the Lapeyres formula, is not totally free from the bias since it uses a fixed price. Since the Paasche formula uses the price at the compared time instead of the base time to calculate the monetary value from the volume, it tends to throw out a downward bias in the other direction, like the Lapeyres formula.

A “chain index” can be used as a method to solve the bias problem both the Paasche and Lapeyres formula have. The chain index moves the base period every time so that the base period will be at just one period previous to the current period, thus preventing the unit price to be fixed for a long time and the bias to arise. However, calculation for the chain index is very time-consuming, and therefore inevitably makes it a big disadvantage for the industrial indices that require promptness and timeliness. (Chapter 8 describes the calculating method of chain index).

(2) Adoption of the Laspeyres formula for the MSP

What is the statistical difference between the index calculated by the Lapeyres method and the Paasche method? That becomes clear when calculating the ratio of a random compared time t with the previous period $t-1$.

In the case of the Lapeyres formula, this ratio is:

$$Q_t^L / Q_{t-1}^L = \frac{\sum_{i=1}^n p_{i0} q_{it}}{\sum_{i=1}^n p_{i0} q_{i0}} / \frac{\sum_{i=1}^n p_{i0} q_{it-1}}{\sum_{i=1}^n p_{i0} q_{i0}} = \frac{\sum_{i=1}^n p_{i0} q_{it}}{\sum_{i=1}^n p_{i0} q_{it-1}}$$

where the volume for t and $t-1$ are both calculated into monetary value by the fixed unit price of the base period and thus the meaning of index is very definitive and easy to understand.

In comparison to this, the ratio in the Paasche formula is:

$$Q_t^P / Q_{t-1}^P = \frac{\sum_{i=1}^n p_{it} q_{it}}{\sum_{i=1}^n p_{it} q_{i0}} / \frac{\sum_{i=1}^n p_{it-1} q_{it-1}}{\sum_{i=1}^n p_{it-1} q_{i0}}$$

and it cannot be abbreviated any further. Since the Paasche formula converts the volume for each period into monetary value using different unit prices, it cannot help the price change from affecting the variations in the index number.

Taking into account the characteristics of the Lapeyres and Paasche formulas mentioned above, it is more appropriate to use the Lapeyres formula from the viewpoint of precision and comprehension of the index. Besides, the Laspeyres formula has the following advantages: 1) it has no need to revise the “weight” that will be mentioned later; and 2) it is friendly to computer-systematization due to its structural simplicity. As a matter of fact, many countries, including Japan, have adopted the Lapeyres formula in the calculations of their industrial indices.

Due to this, the Study Team recommends that the Lapeyres formula be used in the MSP industrial indices.

6.2.4 Index Aggregation

(1) Individual index and aggregated index

The industrial indices can be divided broadly into two types from the viewpoint of industrial classification: individual index and aggregated index.

The individual index indicates the trend of each target commodity and it responds to the most detailed level of industrial classification. On the other hand, aggregated index indicates the trend at a level of wider sense such as “sub-sector” or “major sector”. Needless to say, the aggregated index corresponding to the highest level of industrial classification is the index at the “total manufacturing industry” (Figure S6-4).

Figure S6-4 Index Aggregation

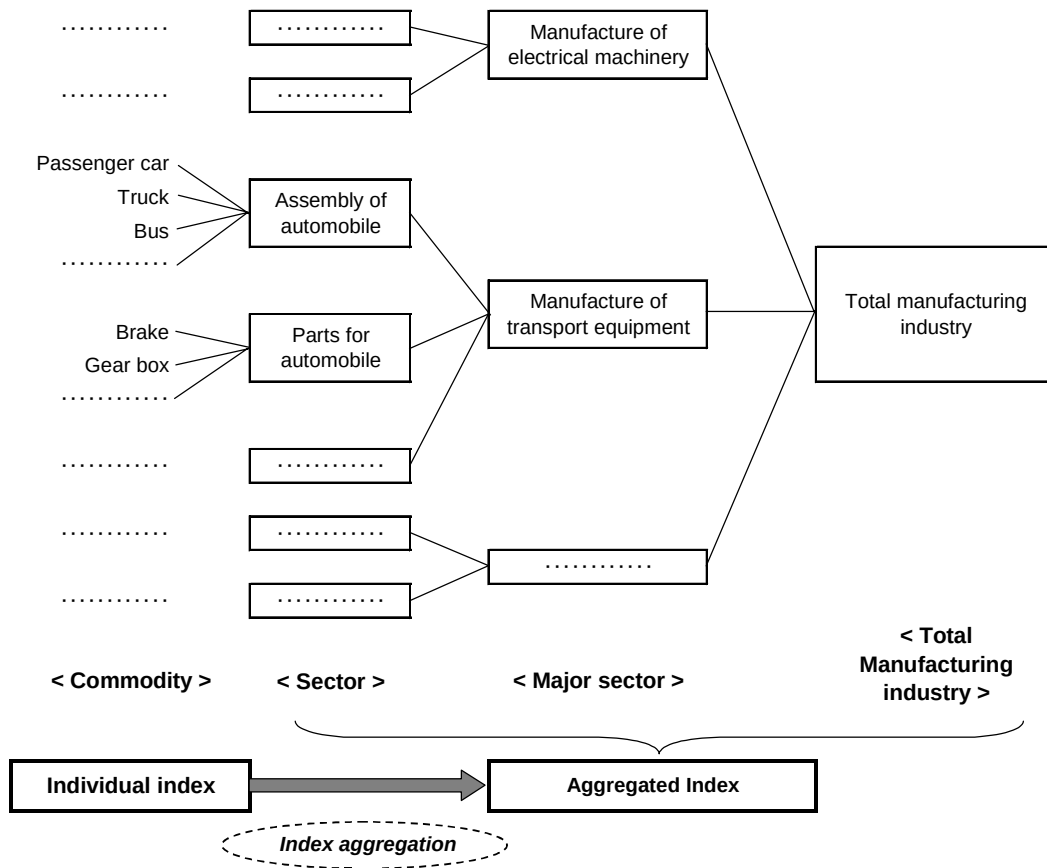
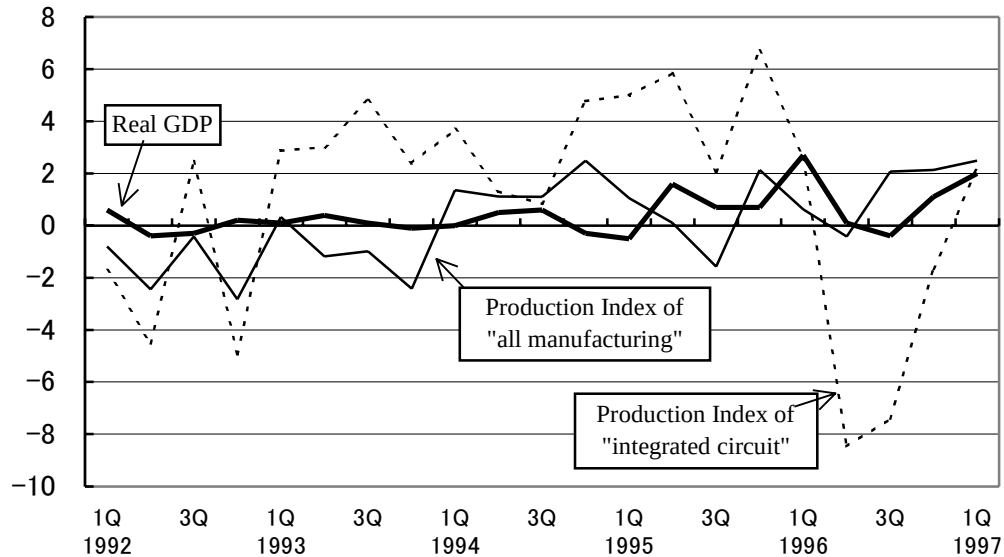


Figure S6-5 shows the past changes in the production index and the real GDP of Japan. The production index of “integrated circuits”, in comparison to the changes in real GDP” is fluctuating widely. On the other hand, the production index of the “all manufacturing” is following a more or less similar route as the real GDP with a lesser range of fluctuation. This means that the aggregated index is essentially required in order to have an overall assessment of the business condition in a country.

Figure S6-5 Real GDP and Production Index of Japan

(Growth rate to the previous quarter, %, seasonally adjusted)



Sources: Ministry of International Trade and Industry of Japan, Yearbook of Indices of Industrial Production 1997: 1990 Base Year.

Economic Planning Agency of Japan, Annual Report on National Accounts 1998: 1990 Base Year.

(2) Calculation of aggregated index by using individual index and weight

The Lapeyres formula mentioned above as [2] can be transformed as follows:

$$Q_t^L = \frac{\sum_{i=1}^n p_{i0} q_{it}}{\sum_{i=1}^n p_{i0} q_{i0}} \times 100 = \frac{\sum_{i=1}^n p_{i0} q_{i0} \times \left(\frac{q_{it}}{q_{i0}} \times 100 \right)}{\sum_{i=1}^n p_{i0} q_{i0}} = \sum_{i=1}^n \frac{p_{i0} q_{i0}}{\sum_{i=1}^n p_{i0} q_{i0}} \times \left(\frac{q_{it}}{q_{i0}} \times 100 \right)$$

(i) (ii) (iii) (iv)

Q: Aggregated index, q: Volume, p: Price,
0: Base period, t: Current period,
i: Selected commodities ($i = 1, 2, 3, \dots, n$)

Of the two parts surrounded by a dotted line, (i) is the original form of the Lapeyres formula where the fixed unit price is multiplied with the volume of each commodity and the total amount is derived by adding up the value of all commodities.

Whereas (ii) first calculates the “individual index” based on the volume of each commodity and then uses the “weight” of each commodity to add up the individual indices.

The “individual index” mentioned in regard to (ii) is the part that is pointed out as (iii) and it is the index obtained by calculating the ratio of the volume at the current period versus the volume at the base period for each individual item. On the other hand, the “weight” is pointed out as (iv) and it expresses the share per item (relative size versus total value) based on the amount valued by the unit price of individual commodity at the base period.

The weight is expressed as $\frac{p_{i0}q_{i0}}{\sum_{i=1}^n p_{i0}q_{i0}}$, but if it is rewritten to $\frac{w_{i0}}{\sum_{i=1}^n w_{i0}}$ supposing

“ $w_{i0} = p_{i0} \times q_{i0}$ ”, it will probably be more understandable. Since w_{i0} is the basic numeric value for calculating the weight by commodity, it is called “standard value for weight”.

Needless to say, the results of (i) and (ii) above are theoretically congruent. Though, in reality, from such standpoints as ease of handling necessary data, simplicity in index calculation and applicability to computer systematizing process, method (ii) is more commonly used in calculating the volume index based on the Lapeyres method. (It is adopted in Japan too.) Taking this into consideration, the MSP industrial indices should also use the method (ii). Since this method weight-averages and adds up the individual indices by using the weight per commodity, it is called “weighted average method” in Japan so as to differentiate it from (i).

The weighted average method absolutely requires the individual index and the weight. The aggregated index can be obtained by integrating the individual indices through weighted average using the weight. In other words, as long as these two items are prepared adequately, it is possible to quickly calculate reliable industrial indices.

(3) Levels of index aggregation for the MSP

For the MSP industrial indices, three levels of index aggregation are established, as shown in Table S6-1. If including the individual index that corresponds to each target commodity, the MSP has four levels for its industrial indices in total.

Table S6-1 Three Levels of Index Aggregation in MSP

Aggregation Level	Index Name	Basis
1) Total manufacturing industry	Total manufacturing index	---
2) Major sector	Major sector index	Current MISSI's "Major sector"
3) Sector	Sector index	PSIC 3-digit classification
Commodity	Commodity index	Commodity specified in the MSP questionnaire

Note: 1), 2) and 3) are the three levels of index aggregation in the MSP. The index at the commodity level is not an aggregated index, but if it is included, there are four levels of indices.

a) Aggregation level-1: Total manufacturing industry

This is an aggregated index that corresponds to the broadest industrial level. It shows the overall trend of the Philippine manufacturing industry.

In the MSP, this index is called "total manufacturing index".

b) Aggregation level-2: Major sector

This aggregated index is the second general index after the total manufacturing industry. This belongs to the same category as the major sector that the current MISSI adopts. Although there are some exceptions, basically it corresponds to the 2-digit classification of PSIC. The MSP covers 11 major sectors.

In the MSP, this index is called "major sector index".

c) Aggregation level-3: Sector

This index follows the "major sector index" in its extensiveness. It differs with the "sub-sector" adopted in the current MISSI indices and it is a category based on the 3-digit classification of PSIC. The MSP covers 24 sectors.

To avoid confusion with sub-sectors of the MISSI, in the MSP this index shall be called “sector index”.

d) Commodity

This index corresponds to the individual commodities that are the most detailed level before any levels of the index aggregation in the MSP. The “commodity” mentioned in this case refers to each of the target commodities that are specified in the MSP questionnaires.

This index is generally called the individual index but in the MSP it will be named “commodity index”.

(4) Index aggregation process that includes a sector applying the indirect method

In order to understand the details regarding the index aggregation method, Table S6-2 and Table S6-3 show an example. It is Table S6-3 that expresses an actual index aggregation process, while Table S6-2 explains the items (volume and value by commodity, weight by sector, etc.) shown in Table S6-3.

In these tables, a, b and c are the only existing sectors and in each sector it assumes that i number of commodities are subject of the survey. In this example, for simplicity, the “sector” and “sub-sector”, which are the index aggregation levels established for the MSP, are summarized in one, and shown a case based only on the following three classifications: Commodity – Sector – Total manufacturing industry.

In addition, regarding the sector c, it is assumed that its sector index be made with the indirect method instead of the direct method, which is the most remarkable characteristic of the MSP. The reason for this is that even after the MSP has been launched, in some major sectors such as apparel, the indices would be made by the indirect method and expected to be included in the aggregated index of the New MISSI. Table S6-2 and 6-3 explain the method for the aggregated index, which includes such major sectors as calculated through the indirect method ($= I_{mfg,t}$ shown in the last row of Table S6-3).

Table S6-2 Data Items Required for Direct and Indirect Method

Sector		Sector - a (By "Direct" Method)		Sector - b (By "Direct" Method)		Sector - c (By "Indirect" Method)	
Sector Weight		w_a		w_b		w_c	
Volume / Value		Volume	Value	Volume	Value	Volume	Value
Base Year (0)	Commodity-1	$Q_{a1,0}$	$V_{a1,0}$	$Q_{b1,0}$	$V_{b1,0}$		
	Commodity-2	$Q_{a2,0}$	$V_{a2,0}$	$Q_{b2,0}$	$V_{b2,0}$		
	-----	-----	-----	-----	-----		
	Commodity- <i>i</i>	$Q_{ai,0}$	$V_{ai,0}$	$Q_{bi,0}$	$V_{bi,0}$		
	Total Value						$V_{c,0}$
Reference Month (<i>t</i>)	Commodity-1	$Q_{a1,t}$	$V_{a1,t}$	$Q_{b1,t}$	$V_{b1,t}$		
	Commodity-2	$Q_{a2,t}$	$V_{a2,t}$	$Q_{b2,t}$	$V_{b2,t}$		
	-----	-----	-----	-----	-----		
	Commodity- <i>i</i>	$Q_{ai,t}$	$V_{ai,t}$	$Q_{bi,t}$	$V_{bi,t}$		
	Total Value						$V_{c,t}$

Table S6-3 Process of Index Aggregation

Sector	Sector - a (By "Direct" Method)	Sector - b (By "Direct" Method)	Sector - c (By "Indirect" Method)
Absolute Figure of Production, Sales and Inventory by Commodity	(0) $Q_{a1,0}, Q_{a2,0}, \dots, Q_{ai,0}$	(0) $Q_{b1,0}, Q_{b2,0}, \dots, Q_{bi,0}$	
	(t) $Q_{a1,t}, Q_{a2,t}, \dots, Q_{ai,t}$	(t) $Q_{b1,t}, Q_{b2,t}, \dots, Q_{bi,t}$	
Commodity Index	$I_{ai,t} = Q_{ai,t} / Q_{ai,0} \times 100$	$I_{bi,t} = Q_{bi,t} / Q_{bi,0} \times 100$	
Sector Index	$I_{a,t} = I_{a1,t} \times w_{a1} +$ $I_{a2,t} \times w_{a2} + \dots +$ $I_{ai,t} \times w_{ai}$ where, $w_{ai} = \frac{V_{ai,0}}{V_{a1,0} + V_{a2,0} + \dots + V_{ai,0}}$	$I_{b,t} = I_{b1,t} \times w_{b1} +$ $I_{b2,t} \times w_{b2} + \dots +$ $I_{bi,t} \times w_{bi}$ where, $w_{bi} = \frac{V_{bi,0}}{V_{b1,0} + V_{b2,0} + \dots + V_{bi,0}}$	$I_{c,t} = VoPI_{c,t}$ where, $VoPI_{c,t} = VaPI_{c,t} / PPI_{c,t}$ $VaPI_{c,t} = \frac{V_{c,t}}{V_{c,t-1}} \times VaPI_{c,t-1}$
Total Manufacturing Index	$I_{mfg,t} = I_{a,t} \times w_a + I_{b,t} \times w_b + I_{c,t} \times w_c$		

6.2.5 Types and Levels of Weight and Its Relation to Survey Coverage

(1) Weight types by index item

For the aggregation of the MSP industrial indices, different types of weights are applied according to the index items as shown in Table S6-4.

Table S6-4 Weight Types by Index Item

Index item	Weight type
Basic indices on finished products	
Production index	a) Value-added weight b) Production value weight
Sales index	Sales value weight
Inventory index	Inventory value weight
Inventory ratio index	Inventory value weight
Other indices	
Production capacity index	Production value weight
Capacity utilization index	Production value weight

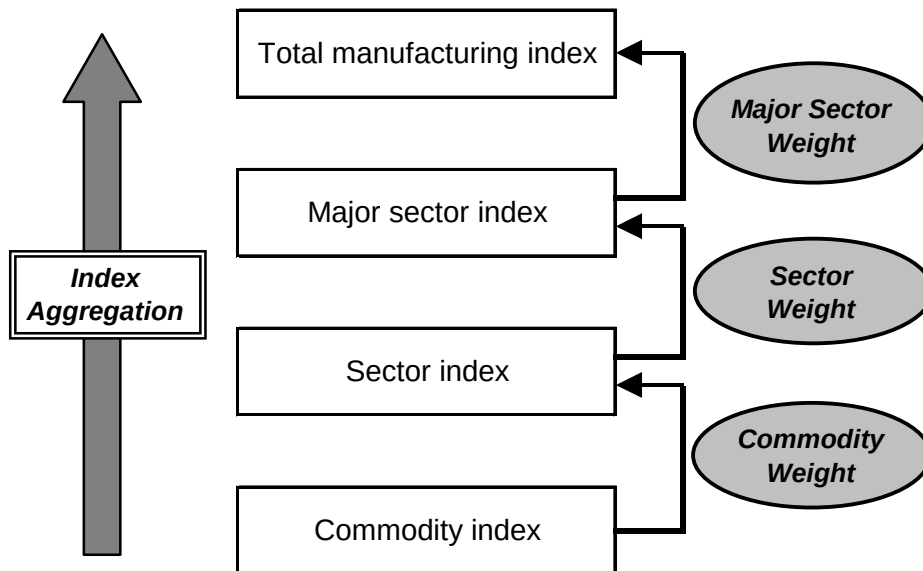
Among the four basic indices, the production index uses either of the two types of weights: value-added and production value. Usually, the so-called “production index” means the production index aggregated with the value-added weight. However in the Philippines, calculation of the value-added weight that corresponds to individual commodities is difficult because of the lack of related data and therefore, the production value weight will be used for the time being.

As mentioned above, the basic value that is needed to calculate the weight by index item like the production value for the production index is called “standard value for weight”. Table S6-4 shows that in the MSP, the following three types of standard values for weight are necessary: production value, sales value and inventory value.

(2) Weight levels

As shown in Table S6-1 above, the MSP industrial indices have three aggregation levels that are “sector”, “major sector” and “total manufacturing industry”. This implies, as shown in Figure S6-6, that three weight levels “commodity weight”, “sector weight” and “major sector weight” are needed for each index item.

Figure S6-6 Weight Level and Index Aggregation



When calculating the weight, the standard values for weight for each of the six index items listed in Table S6-4 have to be prepared. It should be noted that the standard values for weight have to be obtained for each of the three levels indicated in Figure S6-6 --- commodity weight, sector weight and major sector weight. (See the example of the production index shown below.)

[Example]

Standard value for weight for “production index” = Production value

- Standard value for “major sector weight” calculation (production value at major sector level)
- Standard value for “sector weight” calculation (production value at sector level)
- Standard value for “commodity weight” calculation (production value at commodity level)

* Also, for the index items other than the production index, three levels of standard values for weight should be prepared.

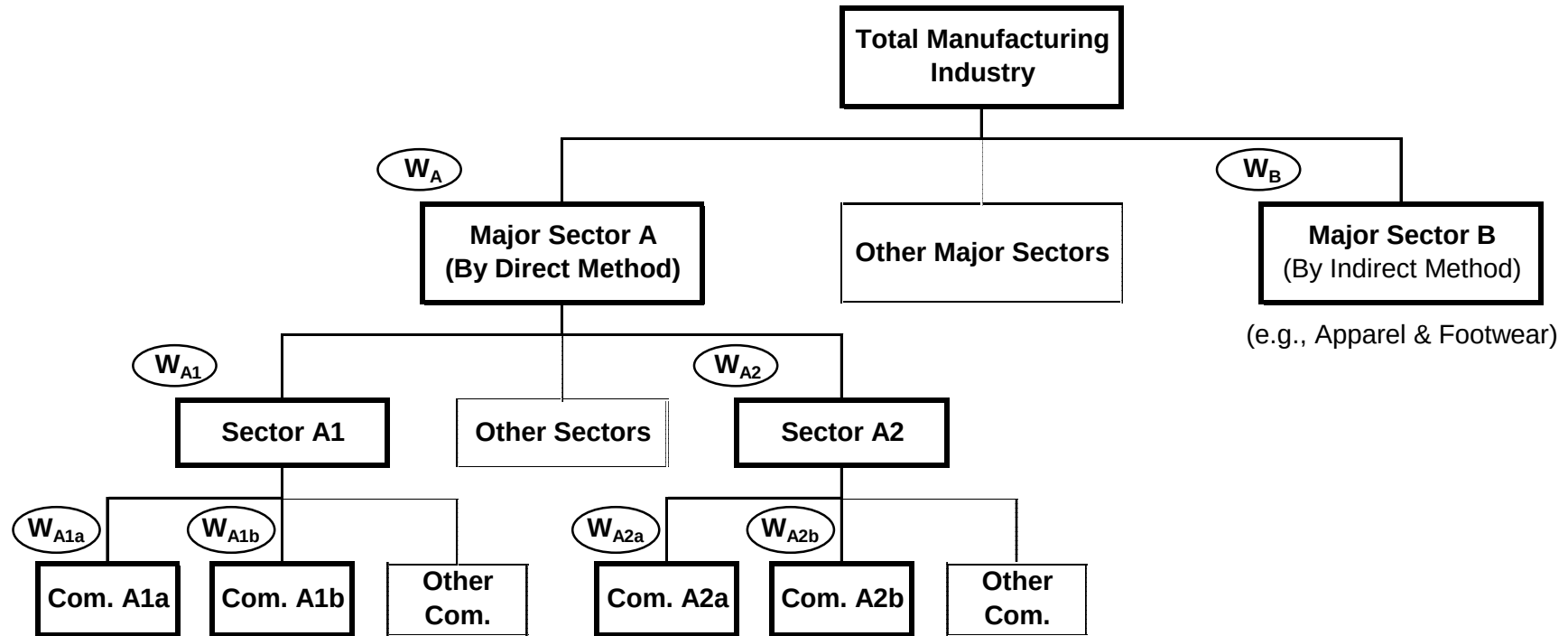
(3) Weight and survey coverage of the MSP

In a certain sector, there are a wide variety of commodities produced, however the MSP restricts its target commodities within major products in each target sector. This means that a sector level index of the MSP is figured out by aggregating the

indices of some particular commodities instead of all belonging ones. This is based on the principle that in order to grasp the general trend of a sector, it is not necessary to cover all the commodities pertaining to it but it will be enough to grasp the representing commodities that satisfy a certain level of coverage. In other words, unrepresentative commodities are negligible for the MSP. The same thing can be said not only between the commodity and the sector, but also between the sector and the major sector as well as the major sector and the total manufacturing industry.

Figure S6-7 shows this principle conceptually. It is essential that the totals of the weights of each target commodity, sector and major sector are 1 (= 100%) respectively, as explained in the footnotes. This is, needless to say, based on the principle of the MSP that the general trend of the manufacturing industry can be expressed by only grasping the representative portion that satisfy a certain level of coverage.

Figure S6-7 Conceptual Chart of Weight and Survey Coverage



Assumption about coverages :

- **Major Sectors A and B** represent **Total Manufacturing Industry**. $W_A + W_B = 1$ in the weight calculation for major sector.
- **Sectors A1 and A2** represent **Major Sector A**. $W_{A1} + W_{A2} = 1$ in the weight calculation for sector.
- **Commodities A1a and A1b** represent **Sector A1**. $W_{A1a} + W_{A1b} = 1$ in the weight calculation for commodity.

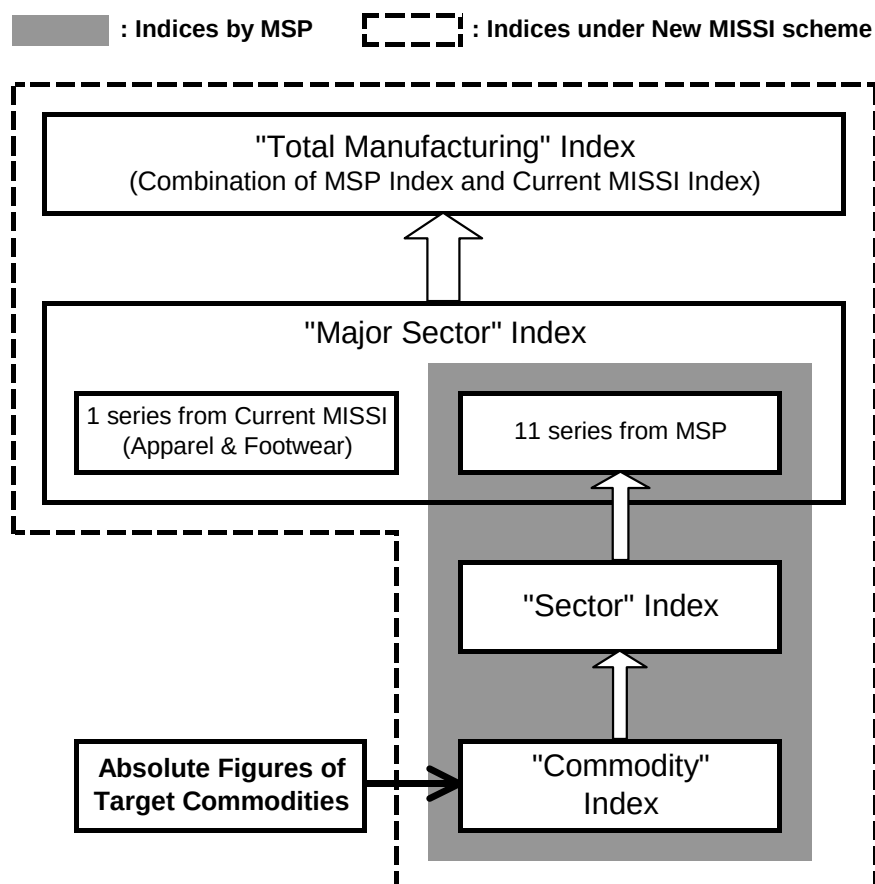
6.3 Practical Method to Compute New MISSI Industrial Indices

6.3.1 Index System under New MISSI Scheme --- Combination of Current MISSI Index and MSP Index

As regards to the computation of the New MISSI industrial indices, it is particularly necessary to take into consideration that the indices are made by combination of the MSP index and the current MISSI index.

As shown in Figure S6-8, the MSP generates its own indices at the commodity and sector levels. Whereas, when it comes up to the major sector level, there are eleven major sectors from the MSP, which are indexed by the direct method, and one major sector (Apparel and Footwear) from the MISSI, which is indexed by the indirect method. Therefore, the total manufacturing index for the New MISSI is calculated by incorporating the eleven major sector indices by the MSP and the one by the current MISSI.

Figure S6-8 Relation of MSP Index and Current MISSI Index under New MISSI Scheme



6.3.2 Adjustment of Base Year and Weight Calculation Year for New MISSI Industrial Indices

As mentioned above, the major sector index and the total manufacturing index under the New MISSI scheme are generated by combination of the MSP index and the current MISSI index. This requires a little complicated adjustment for the base year and the weight calculation year (hereinafter referred to as “weight year”) for the New MISSI industrial indices.

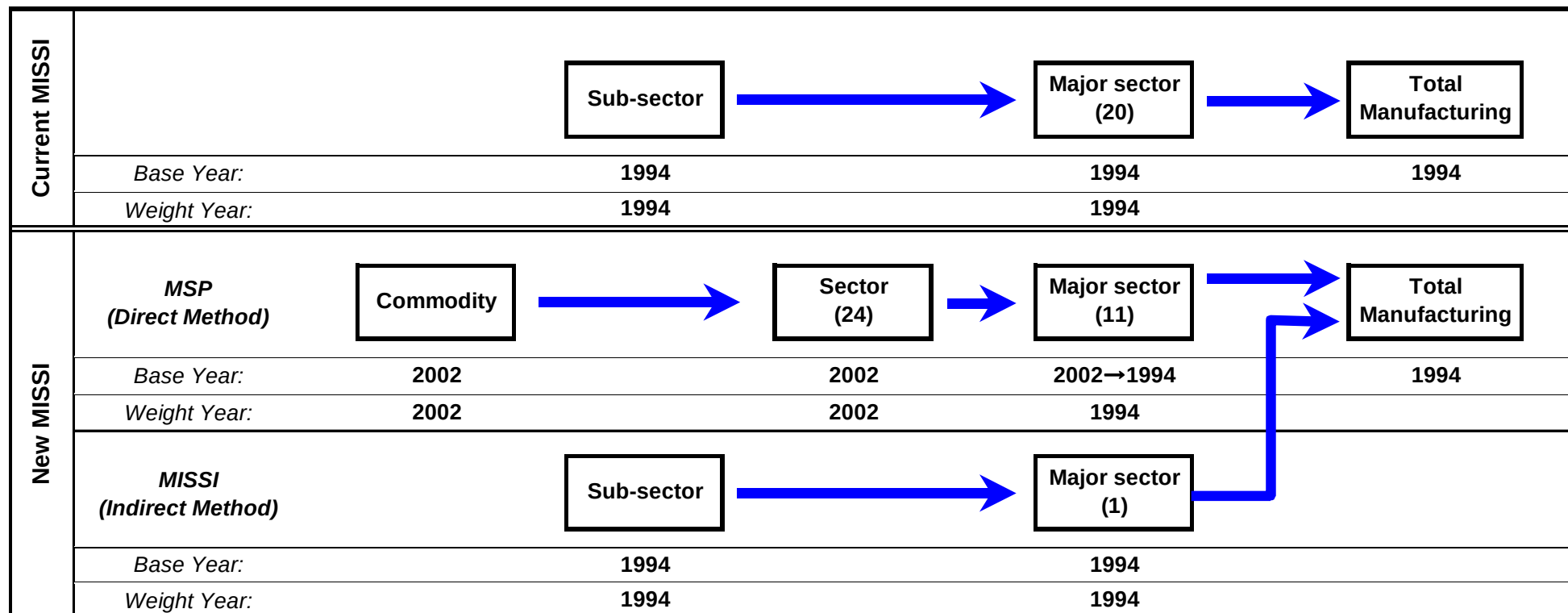
That is as summarized in Figure S6-9. This chart shows the base year and the weight year for each level of New MISSI industrial indices in comparison to the current MISSI.

For the current MISSI, both of the base year and the weight year are set in 1994 for every level of index aggregation.

On the other hand, under the New MISSI, the base year and the weight year for the commodity and sector levels are set in 2002, whereas, for the major sector and total manufacturing levels they need to be set in 1994, as explained later.

Figure S6-9 Basis of Index Computation under New MISSI Scheme

() Number of target sectors



The reason why the base year and the weight year for the commodity and sector levels of the MSP are set in 2002 is simply because the MSP starts in 2002.

Why then, are the base year and the weight year for the major sector and total manufacturing industry levels in 1994? There are two very specific reasons as follows. These reasons are at the same time, important premises for the computation of the New MISSI industrial indices.

1. For the “major sector” and “total manufacturing” indices, the base year should be **1994** which is the official base/reference year established for major economic/industrial statistics, including MISSI, in the Philippines
2. According to the definition of Laspeyres formula, the **base year** and the **weight calculation year** must be agreed with each other.

Reason 1 is to agree with the official base/reference year of the other major statistics in order to secure consistency in the Philippine statistical system, and reason 2 is related to the definition of Laspeyres formula that is applied for index computation.

Based on these premises, for the major sector and total manufacturing indices, the base year should be set in 1994 as an official one and accordingly, the weight year should also be set in 1994.

6.3.3 Procedures to Compute New MISSI Industrial Indices

(1) Technical problem for index computation

If the New MISSI has two different base years --- 1994 and 2002 --- in the process of index computation as shown in Figure S6-9, one technical problem will be raised. That is how the eleven series of MSP major sector indices, which are calculated with the base year 2002 first, can be converted to those with the base year 1994. The MSP major sector indices are originally 2002-based, as they are computed by aggregating the 2002-based sector indices. Accordingly, they need to be converted to 1994-based indices by some means.

In order to solve this problem, the Study Team proposes to use the “base year conversion coefficient”. In the next section, the concrete procedures to compute the

New MISSI industrial indices are explained, including how to make the base year conversion coefficient and necessary weights.

(2) Index computation procedures at each aggregation level

In this section, the index computation procedures at each aggregation level from commodity to total manufacturing industry are shown.

Note that the abbreviations with suffixes used in the formulas in the following explanations are referring to Figure S6-7 (Conceptual Chart of Weight and Survey Coverage).

<Step-1: Computation of Commodity Index>

Base year: 2002 (MSP's starting year)

Index formula: Index for commodity-A1a (I_{A1a}) is computed as follows. Q is volume of commodity obtained by the MSP.

$$I_{A1a,t} = \frac{Q_{A1a,t}}{Q_{A1a,0}} \times 100$$

Weight year: 2002 (in accordance with the base year)

Weight formula: Weight for commodity-A1a (W_{A1a}) is calculated as follows. V is value of commodity obtained by the MSP.

$$W_{A1a} = \frac{V_{A1a,0}}{V_{A1a,0} + V_{A1b,0}}$$

(Standard value for commodity weight calculation)

Officially disseminated statistical data on production, sales and inventory of each MSP's target commodity is not produced in the Philippines. Therefore, there is no method other than self-estimation of the standard value for weight at the commodity level. This estimation is to be done according to the following:

Standard value for weight

at the commodity level = Commodity volume x Commodity unit price --- [x]

$$\frac{\text{Commodity production value}}{\text{Commodity production volume}} = \text{Estimated commodity unit price} \quad \text{--- [y]}$$

↑

The commodity unit price, as indicated in the formula [y], can be estimated by dividing the commodity production value by the commodity production volume. The production value of each commodity reported from each target establishment is evaluated by the producer's price.

The estimated commodity unit price shall be multiplied respectively by production, sales and inventory (formula [x]), in order to obtain the standard value for weight at the commodity level.

It should be noted that in principle, the several types of commodity data used in formula [x] and [y] should be the 12-month total of the base year or the monthly average instead of the monthly data. This is because the base period for the MSP industrial indices is not a particular month but the monthly average of the year established as the base.

Furthermore, the standard value for weight can only be completely prepared once the commodity data for 12 months has been obtained. This means that the commodity weight will not be fixed in one year after starting the MSP. Accordingly, for the year 2002 when the MSP is initiated, the most important issue will be to accumulate reliable commodity data for 12 months by attaining high and stable questionnaire collection rates in each target sector.

(If any of the target commodities are being selected from different sectors and aggregated in a certain category established freely, it is convenient to prepare a standardized weight by commodity, such as a ratio of 1/1,000 or 1/10,000 to the total manufacturing industry.)

<Step-2: Computation of Sector Index>

Base year: 2002 (MSP's starting year)

Index formula: Index for sector-A1 (I_{A1}) is computed as follows.

$$I_{A1,t} = I_{A1a,t} \times W_{A1a} + I_{A1b,t} \times W_{A1b}$$

Weight year: 2002 (in accordance with the base year)

Weight formula: Weight for sector-A1 (W_{A1}) is calculated as follows.

$$W_{A1} = \frac{V_{A1,0}}{V_{A1,0} + V_{A2,0}} = \frac{V_{A1a,0} + V_{A1b,0}}{V_{A1a,0} + V_{A1b,0} + V_{A2a,0} + V_{A2b,0}}$$

(Standard value for sector weight calculation)

There are two ways to prepare the standard value for weight calculation at the sector level: (1) aggregating the commodity value data obtained from the MSP by sector; and (2) using the sector value data for production, sales and inventory from the results of CPBI (former CE) or ASPBI (former ASE).

Whereas, the year for sector weight calculation should be 2002 as mentioned above. However, as the latest results of CPBI and ASPBI are for 1994 and 1997 respectively, the standard value as of 2002 cannot be obtained from CPBI and ASPBI at present.

Consequently, in order to calculate the sector weight as of 2002, the standard value for commodity weight as of 2002 obtained from the MSP shall be aggregated in each target sector. However, if it is found impossible to obtain an appropriate sector weight through this way, the sector weight shall be calculated from the latest CPBI results, namely the results of 1994 Census of Establishments (CE). (In this case, disagreement between the base year of the sector index and the weight year shall be ignored.)

<Step-3: Computation of Major Sector Index>

Base year: 1994 (Official base/reference year for major economic/industrial statistics in the Philippines)

Index formula: The major sector indices are computed according to the following a) and b).

a) The MSP major sector indices, which are computed by the direct method, need to be calculated with the base year 2002 first, and then converted to those with the base year 1994, as mentioned above. This shall be according to the followings.

1) Index for major sector-A with the base year 2002 (I_{A-02}) is computed as follows.

$$I_{A-02,t} = I_{A1,t} \times W_{A1} + I_{A2,t} \times W_{A2}$$

2) Index for major sector-A of which the base year is converted to 1994 (I_{A-94}) is obtained by multiplying the base year conversion coefficient (CC) to I_{A-02} .

$$I_{A-94,t} = I_{A-02,t} \times CC$$

(Base year conversion using the base year conversion coefficient)

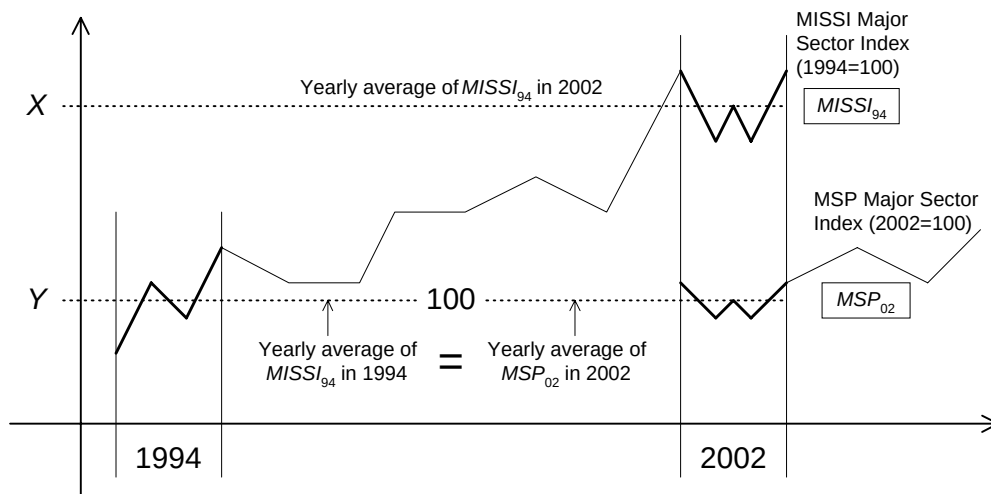
Regarding the base year conversion method using the base year conversion coefficient (CC), see Figure S6-10.

The major sector is a common category between the MSP and the current MISSI. Therefore, for a particular major sector, there will be two index series: one is from the MSP with the base year 2002 (MSP_{02}), and the other is from the MISSI with the base year 1994 ($MISSI_{94}$). These two index series will be overlapped during 2002.

The ratio of the yearly average of $MISSI_{94}$ in 2002 ($= X$) against the yearly average in 1994 ($= Y$) is then calculated. This ratio is the CC . By multiplying the CC to MSP_{02} , an estimated series of 1994-based MSP index (MSP_{94}) can be obtained.

Although this would rather be a simplified method, there would be no option other than this in order to unify the base year in some way.

Figure S6-10 Base Year Conversion of MSP Major Sector Index



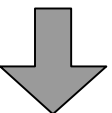
MISSI Major Sector Index (1994=100) : $MISSI_{94}$

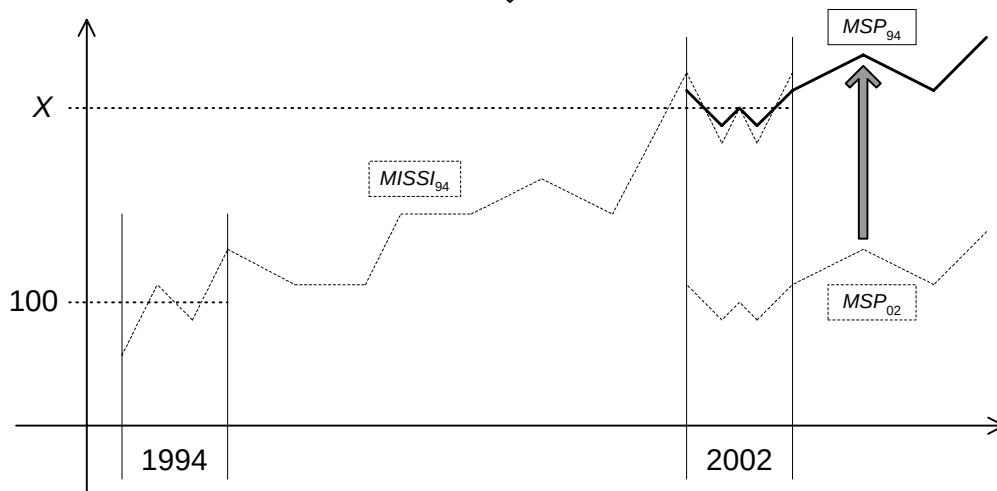
MSP Major Sector Index (2002=100) : MSP_{02}

MSP Major Sector Index after Base Year Conversion (1994=100) : MSP_{94}

Base Year Conversion Coefficient (2002 to 1994) (CC) = $\frac{X}{Y} = \frac{X}{100}$

$$MSP_{94} = MSP_{02} \times CC = MSP_{02} \times \frac{X}{100}$$

After  Conversion



- b) Index for major sector-B, which is corresponding to “Apparel and Footwear” and computed by the direct method, is *VoPI* of 1994-base that is generated by the current MISSI.

$$I_{B-94,t} = VoPI_{B-94,t}$$

Weight year: 1994 (in accordance with the base year)

Weight formula: Weight for major sector-A (W_A) is calculated as follows. V is value of major sector obtained from the results of CPBI.

$$W_A = \frac{V_{A,0}}{V_{A,0} + V_{B,0}}$$

(Standard value for major sector weight calculation)

The major sector, although with some exceptions, basically is based on the 2-digit classification category of PSIC. Therefore, the standard value for weight can be obtained from the results of CPBI published by NSO for production, sales and inventory.

As the calculation year for the major sector weight should be 1994, the standard value shall be obtained from the results of 1994 CE. Thus, the major sector weight will be calculated from the same standard value that is being used in the current MISSI.

Once the results of 2000 CPBI have been disseminated, it will be possible to newly calculate the sector and major sector weights based on them. However, whether or not the weight as of the new base year (1999) is actually introduced to New MISSI shall be determined considering the following points: until when the MISSI will continue adopting the current 1994 weight; and what the next base year for New MISSI will be. Thus, as regards these points, considerations shall start as soon as the dissemination timing for 2000 CPBI is made clear.

<Step-4: Computation of Total Manufacturing Index>

Base year: 1994 (Official base/reference year for major economic/industrial statistics in the Philippines)

Index formula: Index for total manufacturing industry (I_{mfg}) is computed as follows.

$$I_{mfg,t} = I_{A,t} \times W_A + I_{B,t} \times W_B$$

By following the procedures mentioned above, the New MISSI industrial indices at each aggregation level are computed. Under the New MISSI scheme, two base years are used according to the aggregation level: 2002 for the commodity and sector indices, and 1994 for the major sector and total manufacturing indices.

6.3.4 How to Incorporate “Plastic Products” and “Microcircuits”

In New MISSI, “Plastic products” and “Microcircuits” are exceptional categories, which are not corresponding to the “major sector” level but similar to the “sub-sector” level of the current MISSI.

Under the New MISSI scheme, both categories are treated as follows:

- Category “Plastic products” is a sector corresponding to the current MISSI’s sub-sector “Plastic and plastic products” which covers PSIC 243, 252 and 2412.
- Category “Microcircuits” is a sector corresponding to the current MISSI’s sub-sector “Microcircuits” which covers PSIC 322.

Base year for the sector indices of “Plastic products” and “Microcircuits” is 2002. Both indices are computed as follows:

- Index for “Plastic products” is the current MISSI’s *VoPI* for the sub-sector “Plastic and plastic products” of which base year is converted from 1994 to 2002.
- Index for “Microcircuits” is the current MISSI’s *VoPI* for the sub-sector “Microcircuits” of which base year is converted from 1994 to 2002.

The index for “Plastic products” is integrated in the major sector index for “Chemical products,” and the index for “Microcircuits” is integrated in the major sector index for “Electrical machinery.”

Weights of “Plastic products” and “Microcircuits” are treated as sector weights under the New MISSI Scheme. Year for weight calculation is 2002.

Both weights are calculated based on the values obtained by MISSI during 2002. Assuming they were composed of only one target commodity, their sector weights will be calculated together with the other commodity values obtained by the MSP, according to the method mentioned above in <Step-2: Computation of Sector Index> in 6.3.3.

6.3.5 How to Compute the Index for “Drug and Medicines”

In New MISSI, “Drugs and medicines” are treated as a target commodity included in sector “242-3: Chemical products”.

Though this target commodity is listed in the MSP questionnaire, it is indexed not by the direct method but the indirect method, using the nominal value data obtained by MSP and corresponding price index (*PPI* or *WPI*). Namely, as shown below, the same index computation method as *VoPI* of the current MISSI will be applied.

$$\begin{aligned}\text{Real value of “Drugs and medicines” at } t &= \frac{\text{Nominal value at } t}{\text{Price index (2002-base) at } t} \\ \text{Real value index (= volume index) for “Drugs and medicines” at } t &= \frac{\text{Real value at } t}{\text{Real value at base year (2002)}}\end{aligned}$$

6.4 Base Year Revision and Index Linkage

The industrial indices need periodical revisions of its base year. In addition to this, in order to make a long time-series, indices with different base years have to be linked.

It is necessary to understand the relation of the index linkage to the base year conversion, which is mentioned in above 6.3.3. It is explained in 6.4.3 below.

6.4.1 Base Year Revision

(1) Necessity of base year revision

a) Eliminating upward bias

The most essential characteristic of the Lapeyres formula is that it multiplies the volume and the unit price of the base period to convert the volume to the monetary value. By doing this, all the commodities that have been measured in different units can be aggregated without the effect of price change. However, the Lapeyres formula has a tendency towards an upward bias because it uses the fixed unit price at the base period for the aggregation, as mentioned above. If the base period is fixed for a significantly long time, the bias can grow so much that it will be impossible to ignore it. That is why the base period has to properly be moved to a latter point of time.

b) Inspection and revision of target commodities

Due to manpower and budget limitations, it is very difficult or even impossible to take all the products manufactured in the Philippines within a survey of production. Therefore, the MSP takes the major commodities that represent the overall trend of the manufacturing industry as targets.

The main commodities can vary depending on the changes in the industrial structure, technology progress and new product developments. Therefore, it will be necessary to periodically inspect to what extent each commodity explains the general trend and revise the target commodities to be indexed with adequate timing.

In case a significant change is recognized in the structure of the representative commodities in the Philippines, obsolete commodities should be eliminated and those products getting more important should be added. Once the new target commodities has been added, it will be necessary to establish a new base period in order to calculate all the commodities under the same base period.

(2) Guideline for the base year revision

a) 5-year revision cycle

The base year should be revised based on considerations on the change in the economic circumstances and particularly changes in the above-mentioned relative unit price and the composition of main commodities. Although the economic circumstances are always changing, revising the base year requires so much time and manpower that it is difficult to carry it out frequently.

In Japan, the base year revision is carried out in a 5-year cycle. This is based on the idea that a 5-year cycle will not significantly affect the reliability of the industrial indices, and it allows carrying out the revision work within given resources. In case that a new base year is established in 1995, the 1995 based index series starts in 1993. This is because tracing back by two years from the base year is a fixed rule in Japan for reasons such as seasonal adjustments.

The introduction of the same 5-year revision cycle as in Japan is recommended for the New MISSI. However, there might be situations in which the new base year falls on a period of peculiar or irregular economic circumstances such as the Asian currency crisis in the late 1990's. In those cases, certain flexibility will be required so as to consider setting the base year on a comparatively normal year.

b) Monthly average

Since the MSP industrial indices are of a monthly basis, the base period should be monthly based, too. However, it is desirable that the base period is a monthly average of a particular year that is designated as the base, instead of a particular month.

In particular, before introducing the seasonal adjustment system, it will have the advantage of leveling the seasonal changes throughout the year by the monthly average.

c) Time agreeability with other important statistics

In order to maintain compatibility with other related statistics, the base year of the industrial indices of the New MISSI should preferably agree with the base year or the reference year for other main economic/industrial statistics existing in the Philippines. In light of this, it will be important indeed that the first base year revision of the New MISSI shall securely agrees with CPBI's reference year.

6.4.2 General method of index linkage

Fixing the base period for a long period of time is not desirable from the standpoint of avoiding bias accumulation. On the other hand, however, it is also true that there are certain user's needs to analyze the long-term industrial trend through a 10-year or even longer time-series of index. In order to respond to these needs, indices with different base years have to be linked in some way to make a long time-series.

In this part, a method to link two different index series – A with a 1995 base year and B with a 2000 base year – is explained. Of course, these two series have to be indices related to the same commodity, (major) sector, or total manufacturing industry.

(Index series-A --- Base year: 1995)

Aug 1999	Sep	Oct	Nov	Dec	Jan 2000	Feb
.....	105.3	102.9	108.7	106.1		

(Index series-B --- Base year: 2000)

Aug 1999	Sep	Oct	Nov	Dec	Jan 2000	Feb
				97.7	100.5	

Series-A, which is an old series has ended in December 1999 with 106.1, while a new series-B starts in January 2000 with 100.5. However, the index number or the previous month has been calculated too. As shown in this example, to make indices with different base years overlapping in a certain month (in this case it is December 1999) is an important point for the index linkage.

The ratio of series-B to A in December 1999 can be calculated as follows:

$$97.7/106.1 = 0.921 \quad \text{--- [z]}$$

If the obtained ratio [z] --- this is called “link coefficient” --- is multiplied to the whole of series- A, both series will throw out the same number (97.7) for December 1999. Therefore in this month, one index series that strides across a base year revision can then be obtained by linking series-A with B.

(Index series-A after multiplied by the ratio [z])

Aug 1999	Sep	Oct	Nov	Dec	Jan 2000	Feb
.....	97.0	94.8	100.1	97.7		

(Index series-B)

Aug 1999	Sep	Oct	Nov	Dec	Jan 2000	Feb
				97.7	100.5	

In Japan, when the above ratio [z] is being determined, the period by which the new and old series are overlapped is three months. If the overlapping period is set to one month or one year, there is more likelihood of significant errors. Therefore, an intermediate period of three months is adopted.

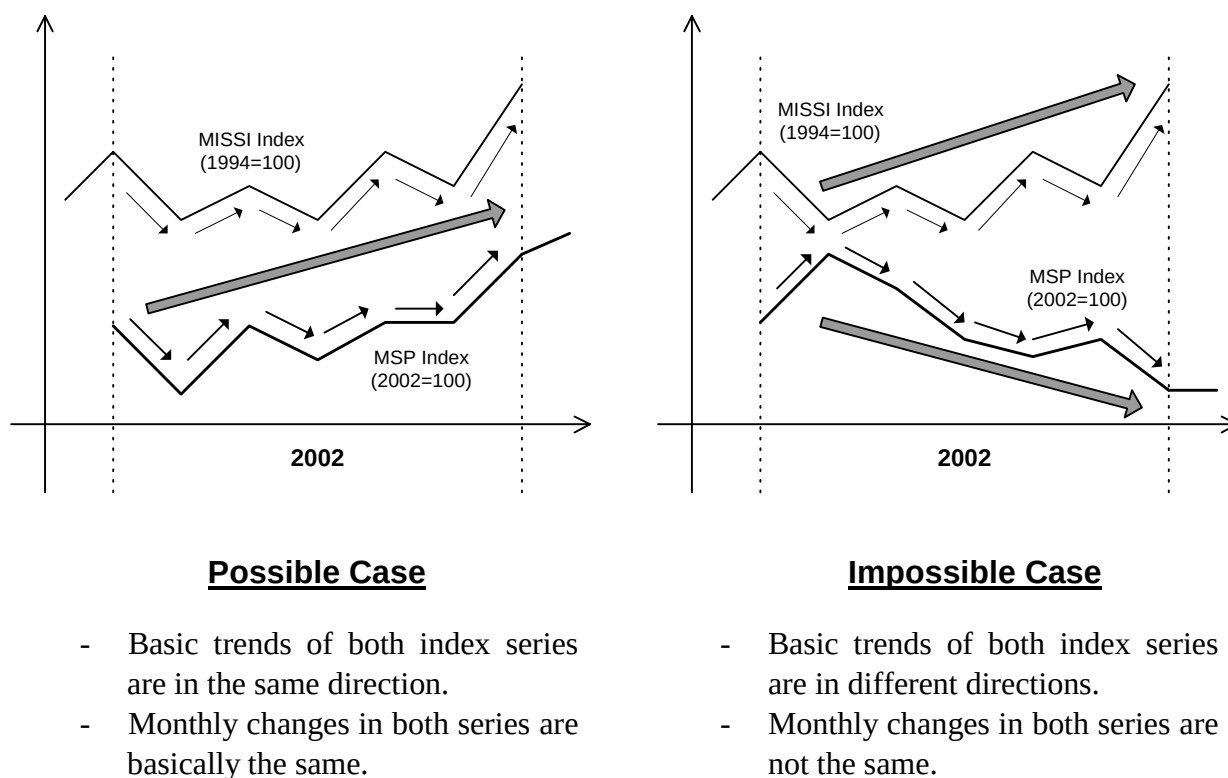
6.4.3 Linkage of MISSI index and MSP index

As explained previously, the major sector level is a common category for both of the MISSI and MSP. Therefore, linkage between the MISSI and MSP indices is considered possible at the major sector and total manufacturing industry level. Since the MISSI index is the series based on the old base year while the MSP index is the series based on the new base year, their linkage can be done through the method explained previously in **6.4.2**.

However, it should be noted that the MISSI and MSP indices differ from each other in the basic parts such as the calculation method (direct versus indirect), the range or number of establishments, or number of (sub-) sectors included in each major sector. Accordingly, the index linkage is considered possible only if the trends of two index series are similar to each other.

Concretely speaking, the changes in both indices during the overlapping 12 months in 2002 should be compared from the viewpoints of basic trend and monthly changes, as shown in Figure S6-11.

Figure S6-11 Comparison of MISSI and MSP Indices in 2002



As a result, if both show a significantly different trend, as illustrated in the “Impossible Case” of Figure S6-11, the linkage should be avoided and the possible causes of the differences should be made clear. Depending on the conclusions on the causes, it might be possible that the MISSI and MSP indices are not linked in some major sectors. On the other hand, if the trends of both indices are basically found to be the same, the linkage should be carried out, and the dissemination of the linked series should be considered as well.

Linking both indices and disseminating it without careful examination would cause unnecessary confusion among the statistic users.

The method for linkage of the MISSI index and the MSP index is basically the same as the base year conversion method that is explained previously in **6.3.3**. This is because the link coefficient used for index linkage is the same as the base year conversion coefficient.

It should be noted that even if the index linkage is found impossible for a particular major sector, the base year conversion of the eleven series of MSP major sector index must be executed in order to compute the total manufacturing index of New MISSI.

The base year conversion is regardless of the monthly changes in index and it pays attention only to the yearly index average in 1994 and 2002. On the other hand, the index linkage is subject to the results of comparison of the MSP index and the MISSI index, and it is the monthly changes in index that are particularly paid attention to, not the yearly average.

6.5 Schedule of Conversion from Current MISSI to New MISSI

The Study Team proposes the schedule of conversion from the current MISSI to the New MISSI as shown in Figure S6-12. Periods are roughly divided as described below and necessary preparatory works should be implemented anticipatively according to each period.

(1) Up to the end of 2002

In this period, the field operation of the MSP pilot survey shall be conducted steadily as well as “preparatory works-1”.

The preparatory works-1 include the following:

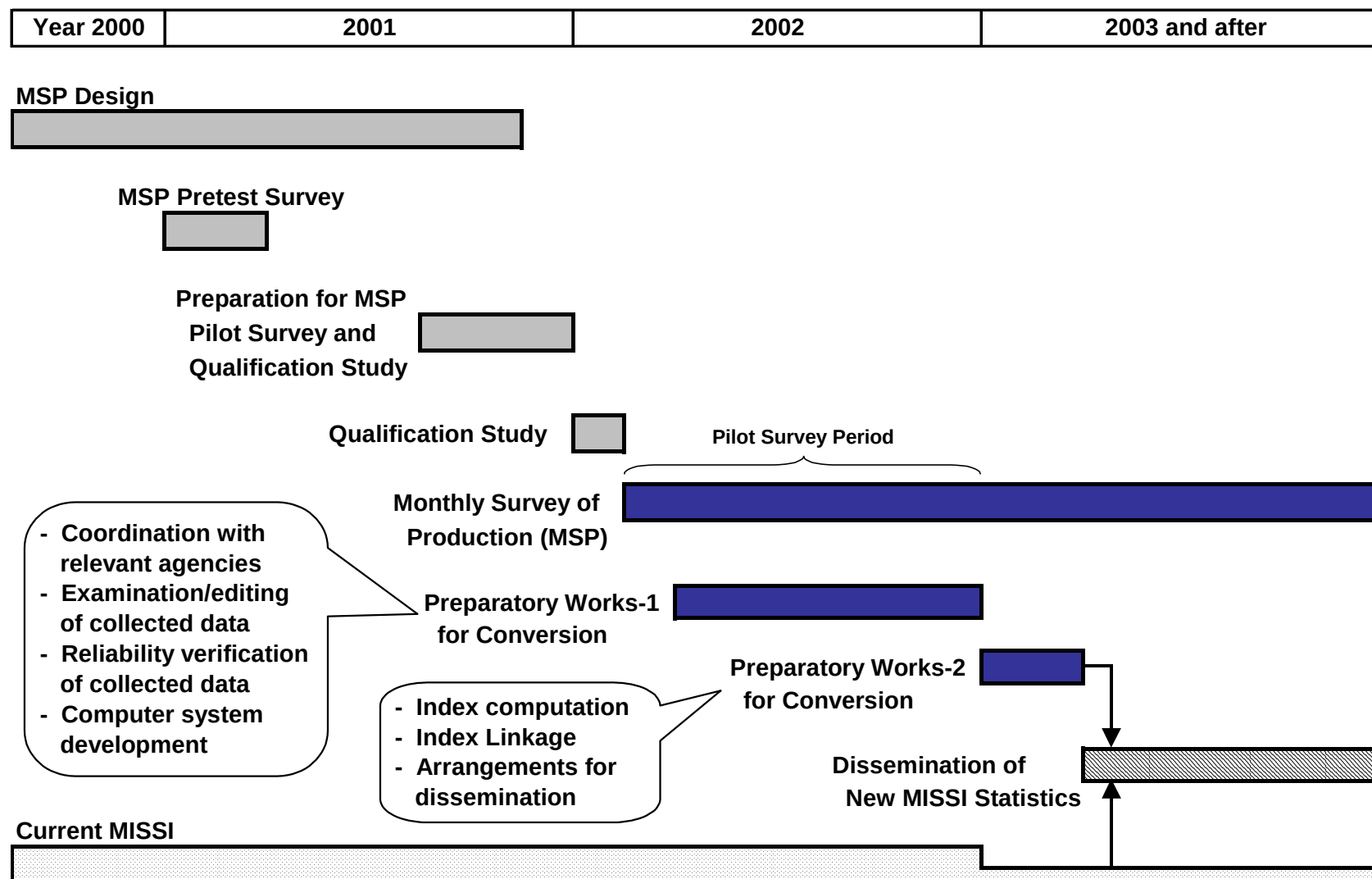
- Coordination with relevant agencies for the start of New MISSI in 2003
- Examination/editing of data collected by MSP pilot survey
- Reliability verification commodity absolute figures obtained by MSP pilot survey
- Computer system development for data processing of the MSP

(2) January to March of 2003

In this period, “preparatory works-2” shall be executed, which include the followings:

- Index computation
- Linkage of the MSP index and the MISSI index for the eleven common major sectors and the total manufacturing industry, as explained in 6.4.3.
- Arrangement for dissemination of the absolute figures and the industrial indices

Figure S6-12 Proposed Schedule of Conversion from Current MISSI to New MISSI



Chapter 7 Regular Operations for New MISSI

Chapter 7 Regular Operations for New MISSI

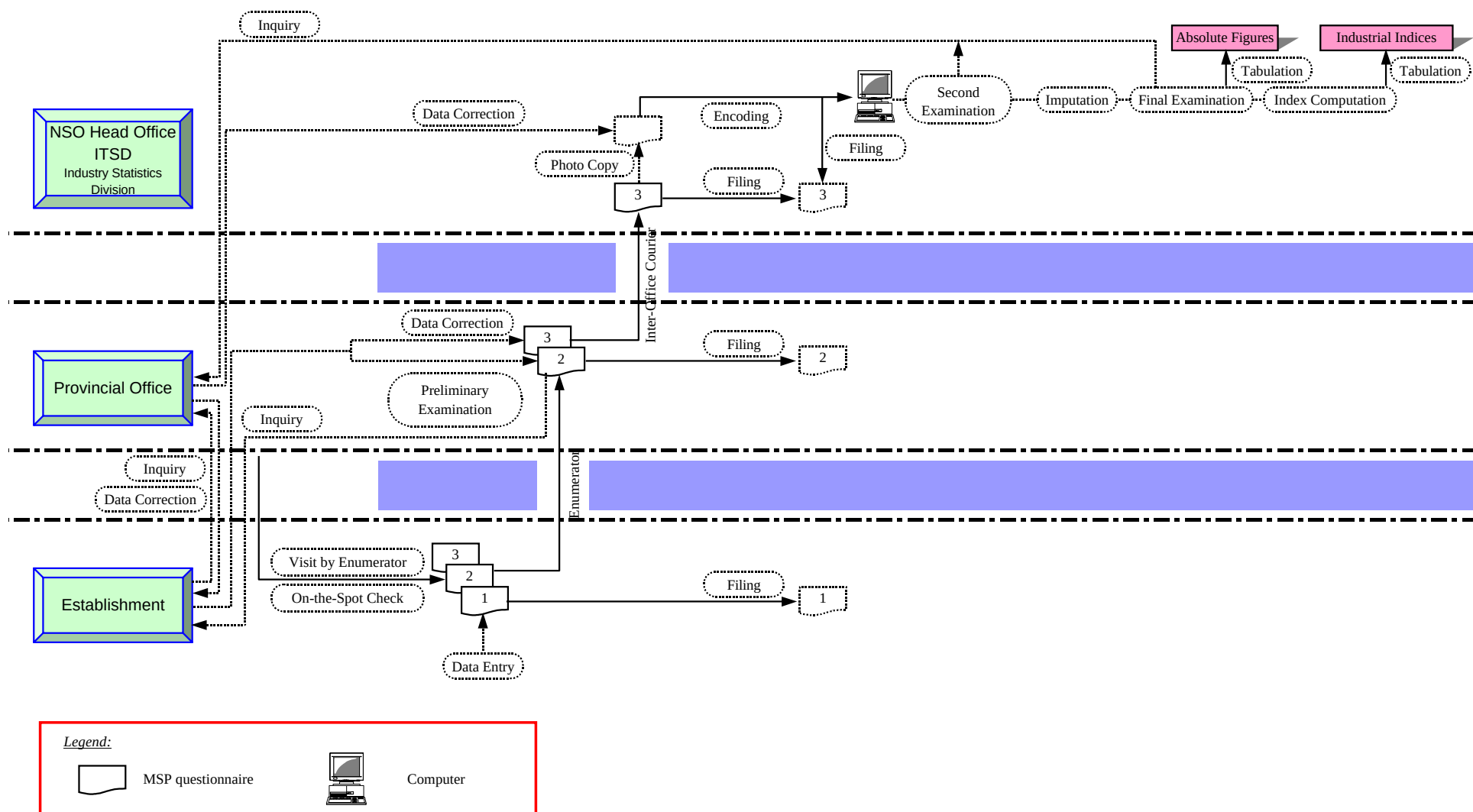
This chapter describes the various operations involved in producing, disseminating and otherwise working with the statistics provided as a result of the MSP, among them absolute figures by commodity and various types of industrial indices. These operations must be implemented by NSO after launching the MSP, on a daily or periodic basis as regular operations.

Additionally, the operations described in this chapter must be applied with respect not only to the MSP, but also with respect to the implementation of the “New MISSI”, which is an amalgamation of the MSP and the current MISSI. Therefore, from this point on, when NSO conducts examinations of the structural configuration, personnel scale and other factors involving the New MISSI, the contents of this chapter must always be considered.

7.1 Operations for Production of New MISSI Statistics

The contents of production operations involving the New MISSI statistics can be accurately understood by confirming the series of data processes, from the collection to the computation of indices, and examining them closely, one by one, in sequential order. Figure S7-1 shows how the MSP questionnaire moves among the three main New MISSI-related organizations, “establishments”, “provincial offices”, and “NSO head office”, and how it is processed. This section describes the operations for producing New MISSI statistics, by following through the processes indicated in Figure S7-1.

Figure S7-1 Operation Flow of MSP



7.1.1 Questionnaire Collection from Establishments

First, at the stage of the establishments noted at the very bottom of Figure S7-1, the MSP questionnaires that have been filled in are collected. In the MSP, each month's questionnaires are provided in triplicate, and after they have been filled in, one sheet is filed at the establishment itself and kept on hand, while the remaining two sheets are collected by the enumerator, and are taken to the NSO provincial offices. When the enumerator collects the questionnaires, he or she must check to make sure that the necessary data has been filled in for each questionnaire item before accepting them.

7.1.2 Operations at NSO Provincial Offices

The questionnaires that have been filled in and collected (two copies made of each) are processed as follows by NSO provincial offices.

(1) Preliminary examination

The following check is carried out as a preliminary examination of the data reported on the collected questionnaires.

a) Finished products section

1) Existence of unreported items

The questionnaires are checked to make sure that figures have been reported for the inventory at the end of the previous month, production, receipt (including purchase and import), internal consumption, domestic sales, export, transfer, inventory at the end of the current month (all data items up to this point are in terms of volume), and the production value for the commodities being manufactured by the establishment.

2) Confirmation of response status relating to commodities being produced

The questionnaires are checked to see whether responses have been provided for the previous month, if they have been provided for the current month, and to see if any responses have erroneously been provided for different commodities.

If it is confirmed as a result of this check that a certain establishment has discontinued production of a certain commodity or has temporarily ceased production of a commodity for some reason, or conversely, if it is confirmed that a certain establishment has initiated production of a new commodity, that information is noted in the "Remarks" column of the questionnaire. This

information is necessary for the second examination conducted subsequently at the NSO head office.

3) Check for balance among items

A check is made to see whether the proper balance exists among the items covered by responses for each commodity, using the formula below.

$$\text{Inventory at end of the previous month} + \text{Production} + \text{Receipt} - \text{Internal consumption} - \text{Domestic sales} - \text{Export} - \text{Transfer} = \text{Inventory at end of the current month}$$

b) Employees section

The questionnaire is checked to make sure the number of employees (= ATE) at the end of the current month has been filled in.

c) Production capacity section

1) Existence of unreported items

If the establishment is producing the finished products corresponding to the commodities targeted in this section (this can be ascertained by looking at the contents of the responses to the finished products section), the questionnaire is checked to see if the monthly production capacity has been entered in this section.

2) The questionnaire is examined to see if the production capacity that has been reported is excessive or too low in relation to the actual production volume noted in the finished products section.

In addition to the above check, the overall questionnaire must be looked over in order to identify any data that obviously contains missing digits, causing figures to be off by one or more digits, and therefore needs to be re-confirmed. Basically, this can be done by comparison of the data with that from the previous month.

(2) Inquiries and corrections

If any problems are discovered in the data during the preliminary examination, an inquiry is made to the establishment that provided the response, by telephone or other means.

Based on the inquiry, if it is judged that there is an error in the response, the relevant establishment is to promptly supply accurate data, and a correction is added to the collected questionnaire. The correction must be made on the two copies of the questionnaire sent to the NSO provincial office, and also to the copy kept by the establishment itself.

(3) Filing of the original questionnaires

Next, one of the two original questionnaires at the NSO provincial office is filed and kept, so that it can serve as an appropriate reference when the examinations are carried out in the following and subsequent months.

(4) Sending of the original questionnaires to the NSO head office

As the last step, the remaining original of the questionnaire is sent to the section in charge (ISD/ITSD) at the NSO head office, by inter-office courier.

If it is judged necessary to shorten the time required to produce New MISSI statistics, submission of the data reported in the questionnaire from the provincial offices may be faxed or e-mailed to the head office. In any case, the original questionnaires must be submitted to the head office.

7.1.3 Operations at the NSO Head Office

The questionnaires submitted from the NSO provincial offices that have undergone the preliminary examination are processed as follows by the ISD/ITSD within the NSO head office.

(1) Copying and filing of the original questionnaires

The original questionnaires are copied, and the originals are filed and kept.

As described later, the data reported on the questionnaires submitted from the provincial offices that have undergone the preliminary examination is first encoded in computers just as it is, and the necessary data examination and correction are then implemented on the computer screen. The filed original questionnaires are kept in the files in order to save the data at the stage when it was encoded.

The copies of the original questionnaires made at this stage are sent immediately to have the data encoded at a later stage.

(2) Data encoding

The data reported on the copies of the questionnaires made earlier is encoded just as it is. No examination or correction is made of the data when it is encoded.

(3) Second examination

The check described below is carried out as a second examination on the data reported on the collected questionnaires. In order to thoroughly examine the data, the same kinds of items are checked as those covered by the preliminary examination at the provincial offices.

It is assumed that this second examination will be carried out not on the questionnaires but on the data encoded earlier, while viewing the data on the computer screen.

a) Finished products section

1) Existence of unreported items

The questionnaires are checked to make sure that figures have been reported for the inventory at the end of the previous month, production, receipt (including purchase and import), internal consumption, domestic sales, export, transfer, inventory at the end of the current month (all data items up to this point are in terms of volume), and the production value for the commodities being manufactured by the establishment.

2) Confirmation of response status relating to production items

The questionnaires are checked to see whether responses have been provided for the previous month, if they have been provided for the current month, and to see if any responses have erroneously been provided for different commodities.

In case that a certain establishment has stopped providing data for the current month for a commodity for which data was provided in the previous month, it is essentially important that the reason be classified as one of those noted below, and that the information be appended to the relevant data already in the computer, using the specified symbols or codes.

1. Production has been discontinued.
2. Production has been temporarily stopped (due to a strike, etc.)
3. Data has not been made available (the establishment has refused to respond, or does not have the data).

For both 1. or 2. above, it is necessary to report the absolute figures for each month for sales and inventory even after production has been stopped, as long as products are being sold from remaining inventory (production itself is at zero). In 1., however, production, sales and inventory have all been terminated at the point when the inventory runs out, so subsequently there will be no responses for the relevant commodities (the columns will be left blank). In 2., on the other hand, even though inventory may have run out, there will be new sales and inventory if production is resumed, so it is necessary to continue reporting the absolute figures (including zeroes) for each month.

In case of 3. above, if an accurate grasp of the data cannot be acquired, this case must be handled by means of imputation or other means even if products are actually being produced and sold.

As 1., 2. and 3. have different statistical nuances respectively, data processing tailored to the respective situation must be carried out when computing the absolute figures and the indices.

3) Check for balance among items

A check is made to see whether the proper balance exists among the items covered by responses for each commodity, using the formula below.

$$\text{Inventory at end of the previous month} + \text{Production} + \text{Receipt} - \text{Internal consumption} - \text{Domestic sales} - \text{Export} - \text{Transfer} = \text{Inventory at end of the current month}$$

4) Check of commodity unit prices

Commodity unit prices can be estimated by dividing the production value by the production volume for each reported commodity.

Two points are checked here: whether or not the unit prices calculated in this way diverge noticeably from those for the same commodity produced at other establishments, and whether or not they diverge noticeably from the unit prices for the previous month at the same establishment.

b) Employees section

The questionnaire is checked to make sure the number of employees (= ATE) at the end of the current month has been filled in. This information is used to check whether or not the number of employees for a given establishment is at a higher level than that of the cut-off line that serves as the standard for target establishment extraction for the MSP.

c) Production capacity section

1) Existence of unreported items

If the establishment is producing the finished products corresponding to the commodities targeted in this section (this can be ascertained by looking at the contents of the responses to the finished products section), the questionnaire is checked to see if the monthly production capacity has been filled in, in this section.

2) The questionnaire is examined to see if the production capacity that has been reported is excessive or too low in relation to the actual production volume noted in the finished products section.

In addition to the above check, the overall questionnaire must be looked over in order to identify any data that obviously contains missing digits, causing figures to be off by one or more digits, and therefore requires to be re-confirmed. Basically, this can be done by comparing the data with that from the previous month.

(4) Inquiries and corrections to the encoded data

If any problems are discovered in the encoded data during the second examination, an inquiry is made to the establishment that provided the response through the person at the provincial office responsible for the questionnaires.

Based on the inquiry, if it is judged that there is an error in the response, the relevant establishment is to promptly supply accurate data, and a correction is made to the encoded data.

(5) Correcting and filing the questionnaire copies

The contents of data corrections that are revealed through the inquiry described in (4) above are reflected in the questionnaire copies used for the data encoding into computers at an earlier stage (for example, the corrections may be added directly to the questionnaire copies, using a red pen). The corrections must be processed the

same way on the original questionnaires, one of which is stored at the NSO provincial office and one at the target establishment.

Copies of the questionnaire on which the corrections have been made are stored in the same file as the original questionnaire stored earlier at (1) above. This is done in order to leave a record that can ultimately be used for comparison purposes, to show how the data was corrected, and to what extent it was corrected. This file is used as reference information for examinations conducted at the NSO head office in the following and subsequent months.

(6) Imputation of unreported figures

In some cases, the target establishment is unable to provide part or all of the required data items pertaining to production commodities. For example, there are likely to be establishments at which the absolute figures for the inventory volume are not known until at least six months after the reference month. Also, unexpected situation can cause significant delays in the responses to the questionnaires for only that month. In cases like these, it is necessary to impute the unreported figures in order to complement the rest of the data.

The main methods for imputing these figures are as described below.

a) Applying the figures from the previous month

In this method, the figures from the previous month are used as the relevant imputed data.

b) Applying the figures from the same month of the previous year

In this method, the figures from the same month of the previous year are used as the relevant imputed data.

c) Applying the growth rate

In this method, the imputed figure for the current month is obtained by multiplying the previous month's figure for the commodity by the average growth rate to the previous month based on the other establishments that have submitted responses concerning the same commodity.

(7) Tabulation of absolute figures and final examination

When the operations up to this point have been completed, tables are produced that shows the aggregate results for the absolute figures for each commodity. These tables are used in the final examination of the absolute figures that serve as the base data to calculate the MSP industrial indices. The following items are required in the tabulation contents.

- a) Comparison table to the previous month relating to the aggregate results for each commodity

The data is checked to see if the aggregate results for the relevant commodities diverge significantly from those of the previous month.

- b) Comparison table to the same month in the previous year relating to the aggregate results for each commodity

The data is checked to see if the aggregate results for the relevant commodities diverge significantly from those of the same month in the previous year.

- c) Table showing detailed absolute figures by establishment and commodity

As a rule, in order to assure the continuity in a time-series of both the absolute figures and the indices for each commodity, the absolute figures and the indices are calculated each month based on the response data provided by common establishments. As a result, when the final examination of the absolute figures is carried out, confirmation is required to ascertain whether the data that has to be collected has actually been obtained from the establishments, and, if it has not been obtained, whether it has been complemented by the imputation of unreported figures. The table showing the detailed absolute figures by establishment and commodity is used for the check conducted for this purpose.

Through the final examination conducted based on above-mentioned tables, the absolute figures that serve as the fundamental MSP statistics are determined. If any problematic figures are discovered during the final examination, the situation is reviewed to determine whether the previous second examination and the imputation of unreported figures were conducted properly, and then the necessary corrections must be added to the encoded data.

(8) Index computation

When the absolute figures have been determined, the indices are computed.

As proposed in Chapter 9, index items provided by the MSP consist of the six types relating to final products, as listed below.

- Production index
- Sales index
- Inventory index
- Inventory ratio index
- Production capacity index
- Capacity utilization index

(9) Tabulation of indices

Tables are produced that show the results of index computation. These tables are used for analysis involving the results of index computation, and may also be used in part as a format for dissemination. Basically, items like those below are required in the tabulation contents.

- Changes in a time-series and comparisons with the previous month/same month of the previous year for the “commodity index” relating to the six items
- Changes in a time-series and comparisons with the previous month/same month of the previous year for the “sector index” relating to the six items
- Changes in a time-series and comparisons with the previous month/same month of the previous year for the “major sector index” relating to the six items
- Changes in a time-series and comparisons with the previous month/same month of the previous year for the “total manufacturing index” relating to the six items
- Contribution degrees of the major sector index, sector index and commodity index to the growth rate of the total manufacturing index
- Contribution degrees of the commodity index to the growth rate of the major sector index and sector index

7.2 Operations for Dissemination of New MISSI Statistics

The Study Team proposes that the New MISSI statistics (absolute figures by commodity and the various industrial indices) be disseminated to the public following the guidelines noted below.

7.2.1 Preliminary Report, Revised Report and Annual Revision Report

New MISSI statistics are disseminated at three levels, based on the degree to which they have been determined: the preliminary report, the revised report, and the annual revision report.

(1) Preliminary report (monthly report)

As economic indicators that sensitively express the short-term industrial trends, there is a strong call for the New MISSI statistics to be made available rapidly. To accomplish this, the computed results must be presented promptly within a short period of time from a reference month. This is done in the “preliminary report” provided each month.

However, at the stage when the preliminary report is disseminated, there can be a case that all the necessary data has not yet been collected from a certain number of establishments, and it is therefore unavoidable that imputation be used to complement the calculated results.

Users of statistics who want to ascertain the business situation in the immediate area may find it certainly useful if the preliminary report includes objective comments --- these need not be analyses, but rather can be simply a summary of the facts indicated by the industrial indices --- that are related to the domestic manufacturing industry in view of trends in the various index items.

(2) Revised report (monthly report)

NSO continues to collect data from those establishments that were unable to provide it at the stage when the figures for the preliminary report were computed, and after a given period following the dissemination of the preliminary report, issues a “revised report” concerning the same reference month as that covered in the preliminary report. As a rule, the revised report is issued in the month following the preliminary report. The information that must be provided in the preliminary report and the revised report is basically the same, so the preliminary report for a given reference month may be combined with the revised report for the previous month.

At the stage when the revised report is published, the necessary data must have been collected from all of the establishments except for those from which the absolute figures cannot be collected for special reasons.

Dissemination of New MISSI statistics by monthly reports can be done only twice for each reference month, in the form of one preliminary report and one revised report. Cause must be avoided in which collection of the necessary absolute figures drags on over a period of several months, so that revised reports have to be updated and disseminated repeatedly. This is because repeated correction of the revised report adversely affects user confidence in the New MISSI statistics, and can lead to users no longer making use of the statistics. In that sense, the data used in New MISSI statistics must be acquired within a short period of time, and it goes without saying that, at the point when the revised report is created, a questionnaire collection rate of close to 100% is expected.

(3) Annual revision report (annual report)

The annual revision report is the vehicle through which the completely revised figures for New MISSI statistics for one year, January through December, are disseminated. Consequently, the annual revision report is issued only once a year.

In specific terms, around March of a given year, the absolute figures for January through December of the preceding year are completely refurbished, and the absolute figures and industrial indices for those twelve months are re-calculated. The results of the annual revision are then disseminated in the form of the annual revision report.

For instance, at the stage when the monthly revised report is issued, it is likely that the data required for New MISSI statistics has not been received from a small number of establishments, and the disseminated data has been complemented using imputed figures. In such cases, all the data for the actual figures that must be substituted for the imputed figures is collected from target establishments, and is reflected in the re-calculation of New MISSI statistics for the past year. This is the annual revision.

The operations carried out in the process of the annual revision are described in 7.3.1 later in this report.

The annual revision report is used to provide computed results for the final, highly accurate and reliable New MISSI statistics. As the absolute figures for a given year are disseminated around March of the following year, it is outstanding as an annual report in terms of promptness. For this reason, it can contribute significantly to the accuracy and reliability of relevant statistics such as the national income statistics.

(4) Items of monthly dissemination from New MISSI

The Study Team proposes the items of monthly dissemination by the above-mentioned preliminary report and revised report, as described below.

1. Absolute figures of target commodities

Preliminary Report	Revised Report
1) Production	1) Production
2) Sales	2) Sales
3) Inventory	3) Inventory

2. Industrial indices

a. For “commodity” and “sector” levels

Preliminary Report	Revised Report
---	1) Production index 2) Sales index 3) Inventory index 4) Inventory ratio index

b. For “major sector” and “total manufacturing industry” levels

Preliminary Report	Revised Report
1) Production index 2) Sales index 3) Inventory index 4) Inventory ratio index	1) Production index 2) Sales index 3) Inventory index 4) Inventory ratio index 5) Production capacity index 6) Capacity utilization index

Note: The production capacity index and capacity utilization index are disseminated only by major sector and for the total manufacturing industry, since the number of target sectors for these two indices is limited.

The composition of targets under the New MISSI scheme is as follows:

- Commodity: 156
- Sector: 24

- Major sector: 12
- Total manufacturing industry: 1

Assuming that all the targets at each level shown above could be disseminated, the numbers of disseminated data would be as follows:

- Commodity (absolute figure): 156 commodities x 3 items = 468
- Commodity (index): 156 commodities x 4 items = 624
- Sector (index): 24 sectors x 4 items = 96
- Major sector (index): 12 major sectors x 6 items = 72
- Total manufacturing industry (index): 1 x 6 items = 6

(5) Monthly and yearly operations for dissemination

Figure S7-2 summarizes the operations for production and dissemination of the preliminary report, revised report and annual revision report, dividing them into monthly operations and yearly operations. This figure shows a proposal from the Study Team with target deadlines for completion of each operation.

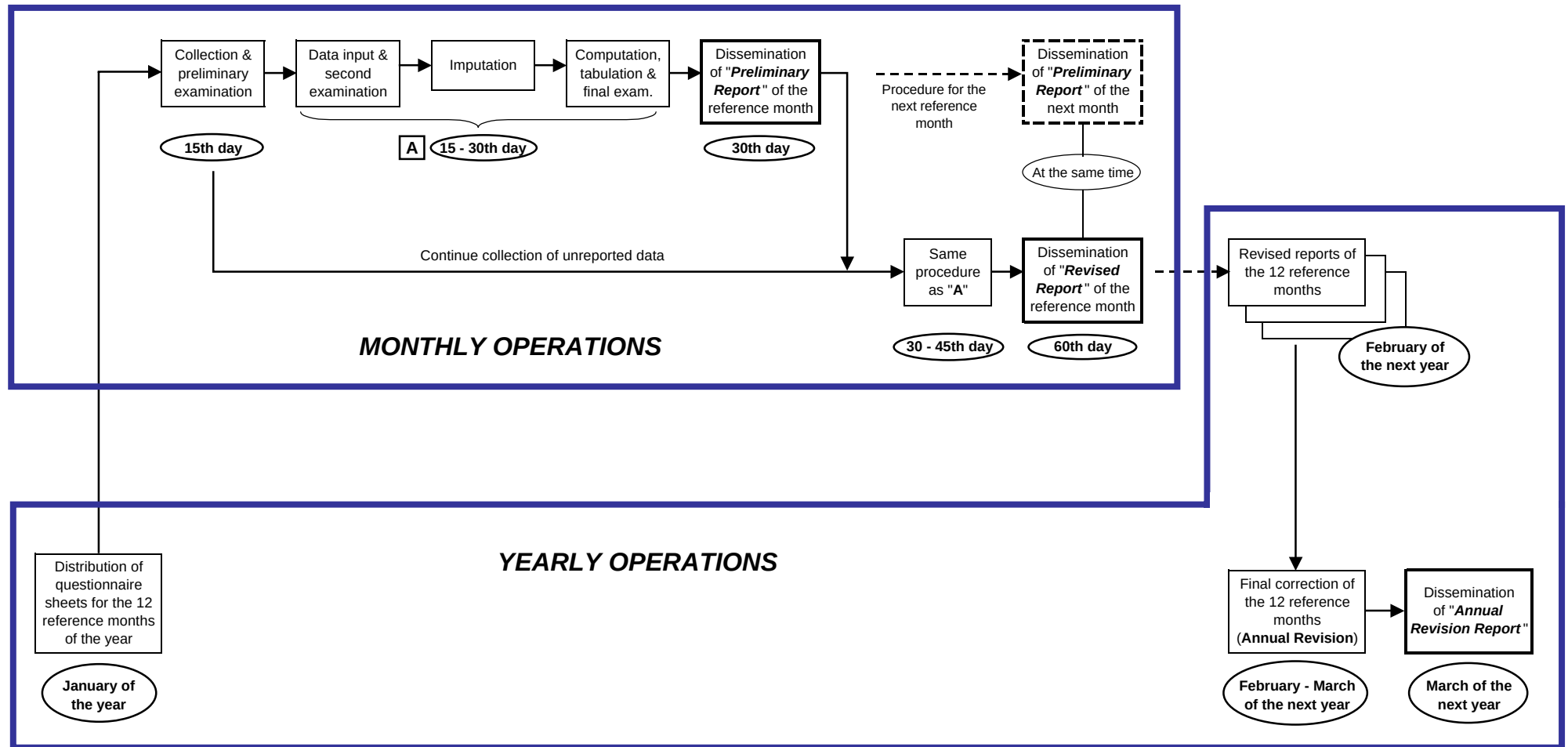
With regard to the monthly operations, first of all, the data collection from target establishments should be finished by the 15th day after the end of a reference month for producing the preliminary figures on the reference month. After that, the following procedure including data encoding, examination, imputation, index computation and tabulation should be implemented within two weeks, and finally the “preliminary report” should be disseminated on the 30th day.

On the other hand, data that has not yet been obtained by the 15th day should be continuously collected and integrated into the calculation of the revised figures. The calculation starts on the 30th day when the dissemination of the preliminary report of the reference month has finished, and the calculation results should be disseminated the 60th day in form of the “revised report”. The dissemination of the revised report is at the same time as the preliminary report of the next reference month.

Secondly, in the yearly operations, the questionnaire sheets for the 12 reference months in a given year are distributed to each target establishment in every January. The annual revision should be started in February of the next year when the necessary figures related to the 12 reference months within the year have been completely gathered. In March, the results of annual revision are disseminated in the form of the “annual revision report”.

In New MISSI operations, above-mentioned work cycles should be repeated without delay.

Figure S7-2 Proposed Monthly and Yearly Operations for New MISSI



Note : "15th day" in this figure, for example, means the 15th day after the end of a reference month.

7.2.2 Criteria for Dissemination of Absolute Figures and Indices

This section describes the criteria that must be met in order to disseminate two items that make up New MISSI statistics, namely the absolute figures and the industrial indices.

(1) Criteria for dissemination of the absolute figures by commodity

a) Stable data collection ratio

The first criterion is recovering the necessary data on an ongoing basis from the target establishments producing a given commodity. In order to confirm this, it is necessary to know which establishments are producing the relevant commodity domestically in the Philippines, and this information can be obtained from the results of the Qualification Study of Manufacturing Establishments, which confirms the commodities being produced by each establishment. Based on this information, if a list of establishments producing the relevant commodity is put together, it is possible to check the data collection ratio for each commodity by referring to the list.

b) Verification by knowledgeable persons of the aggregate results

When the criterion noted in a) above has been satisfied, the absolute figures for a given commodity are actually aggregated. Verification is then carried out by persons with the necessary knowledge to judge whether the aggregate results indicate the appropriate levels of domestic production, sales and inventory of the relevant commodity in the Philippines. The following types of people are candidates who are knowledgeable in this area.

- Representatives of enterprises involved in the production of the relevant commodity. (For example, the marketing supervisor or the production plant manager.)
- Representatives who are knowledgeable in the production in the industrial sector to which the relevant commodity belongs. (For example, the chief of the secretariat of a trade organization.)
- Supervisors in governmental organizations such as the NSCB or BOI, who watch the trends involving individual industrial sectors or individual commodities.
- Sector specialists in ISD/ITSD of NSO.

When this group of people come together in the conference, it is hoped that the participants will bring with them information that will serve as reference material when decisions are being made (for example, production volume data created independently by the trade organization), and they will verify the appropriateness of the absolute figures provided through the MSP based on the objective materials.

This conference is also meaningful in that it assures an opportunity for the exchange of information between the NSO and various related organizations. Consequently, it must be held not just once, but at periodic intervals, such as once during each of the four business quarters.

c) The number of domestic production establishments

Regardless of whether the absolute figures for a given commodity are judged based on a) and b) above to be sufficiently reliable, if there are only one or two domestic establishments in the Philippines producing that particular commodity, the absolute figures cannot be disseminated without permission by the establishments. The reason is that, in this case, disseminating the absolute figures reveals the actual volume data for a specific establishment, which conflicts with New MISSI's principle of concealing the data of individual establishments.

The absolute figures by commodity that are verified as satisfactory through a), b) and c) above may be published in the preliminary report, revised report and annual revision report described earlier.

(2) Criteria for dissemination of indices

The indices are obtained by processing the absolute figures by commodity, so they can be computed without any problem for commodities for which the absolute figures can be disseminated.

The indices, unlike the absolute figures that indicate absolute quantitative levels relating to the production, sales, inventory and other parameters of a specific commodity, indicate relative levels at a given point, and shifts in those levels. For this reason, a decision is likely to be made to compute the indices for reference purposes, even though the absolute figures cannot be disseminated for a given commodity. Specifically, if there are ten domestic establishments in the Philippines producing a certain commodity, and data can only be obtained from half of them, it is probably not possible to produce credible absolute figures. If the other five

establishments that have supplied data comprise a leading presence in the industry, however, there is a possibility that trends in production activities can be ascertained from the indices. If it is judged that this possibility exists, dissemination of the indices as a reference series is examined. At that point, the possibility of including the reference series into calculation of the aggregated indices is also examined.

However, no uniformly objective criteria exist for judging whether to disseminate the indices as an official series, or to disseminate them as a reference series. Decisions will ultimately have to be made on a case-by-case basis. Consequently, the situation needs to be examined by the group of people described in (1) b) above.

7.2.3 Media for Dissemination

(1) Printed materials for dissemination and NSO's official Web site

It is hoped that the preliminary report, revised report, and annual revision report of New MISSI statistics will be sold as printed materials (booklets) at appropriate prices. At the same time, however, producing large volumes of printed materials every month and distributing them nationwide would be problematic in realistic terms given budgetary and other concerns. For this reason, like the current MISSI, these reports need to be disseminated through NSO's official Web site.

From the standpoint of keeping the operations involved in disseminating New MISSI statistics as simple as possible, it would probably be appropriate to disseminate the revised reports concerning a given reference month at the same timing that the preliminary reports for the following reference month are disseminated.

(2) "Monthly Bulletin" of NSO

The NSO publishes a "Monthly Bulletin" that is a compilation of various monthly statistics created by NSO itself. The preliminary and revised reports of New MISSI statistics, in addition to being disseminated as media in their own right, should also be published in the "Monthly Bulletin" in order to reach a broader range of users.

(3) Newspapers, economic magazines, and periodic publications by economic organizations

From the standpoint of supplying New MISSI statistics on a broad scale, one proposal is to have New MISSI statistics published in the statistics sections of

newspapers, economic magazines, and periodic publications by economic organizations issued in the Philippines.

Because readers of those media can be assumed to have a higher level of interest because of their economic orientation, disseminating New MISSI statistics through these organs can be an effective way of meeting user needs.

7.3 Annual Operations for Data Revision/Adjustment

7.3.1 Works for Annual Revision

As described in **7.2.1**, the annual revision involves the complete revision of the absolute figures for January through December of a given year, and re-calculation of the absolute figures and industrial indices for those twelve months, by integrating the data collected after disseminating the monthly revised reports for each reference month. The following section outlines specific works that must be carried out in order for this to be accomplished.

- (1) Additions and exclusions of the target establishments included in computation of New MISSI statistics
 - 1) If an establishment proves to have been left out of the survey targets even though it is producing the commodity being surveyed, and the number of employees (ATE) is above the cut-off line, the absolute figures for that establishment for the past twelve months are added to those being computed in New MISSI statistics when the annual revision is carried out.
 - 2) If the number of employees (ATE) for a given target establishment dropped below the cut-off line at a certain point of time, the annual revision serves as an opportunity to exclude the absolute figures for the relevant establishment subsequent to that point from the figures computed for New MISSI statistics. However, when an establishment is excluded, another establishment must not be added as a replacement. Target establishments are not replaced in the MSP. Care must always be taken in that establishments are selected as targets based on whether the number of employees is above or below the cut-off line.
 - 3) If a new establishment has entered the market and begins producing the commodity being surveyed, and its number of employees (ATE) is above the cut-off line, that establishment is added to those being computed in the statistics

starting from the month in which the establishment entered the market when the annual revision is carried out.

(2) Replacement of imputed figures with actual figures at the revised report stage

If the absolute figures could not be obtained from an establishment when the monthly revised report was compiled, and imputed figures were used to complement the available figures, all of the actual absolute figures are obtained at the stage when the annual revision is carried out, and are used to replace the imputed figures.

(3) Aside from above cases, the data adjustment required for securing index continuity, which is explained in the following **7.3.2**, is carried out.

7.3.2 Gap Adjustment for Index Continuity

(1) Time-series gap

In the commodity and volume based survey of production, discontinuity in a time-series of absolute figure on a commodity can arise due to addition or exclusion of target commodities or change in survey scale/coverage. This is so-called “time-series gap”.

For the computation of individual index (= commodity index), adjustment of the time-series gap is required in order to secure the index continuity. This is so-called “gap adjustment”.

In the following parts, causes of time-series gap and methods of gap adjustment are described. It is suggested that the gap adjustment for the MSP indices be carried basically out once a year, as one of the works of the above-mentioned annual revision, which produces the final completed statistics for the past year’s worth of the MSP.

(2) Causes of time-series gap

Causes of time-series gap include the following.

1) Change in survey scale/coverage

In the commodity and volume based survey of production, to improve its efficiency, there are cases in which small establishments that do not greatly affect the overall trends are excluded by the cut-off. For example, if the cut-off line has changed to 20 or more employees while the past survey covered establishments with

10 or more employees, the figures for the establishments employing 10 to 19 fall off and so a time-series gap arises.

2) Recovery of omitted establishments

If establishments to be covered are omitted for some reason and these are discovered and recovered, this causes a time-series gap. However, it should be noted that if a new establishment starts operation, that must be taken as a market expansion, not a time-series gap.

3) Change of commodity definition

Changes in definitions and scopes of target commodities and rearrangement of commodity classifications cause time-series gaps. A complicated example is as follows. Different commodities are produced through several processing stages. In the past, only those sold or transferred to users as finished products were treated as production. However, the definition was changed to treat the commodities produced at each stage separately, and therefore the products for internal consumption at each stage are now counted as production. This case also causes a time-series gap.

4) Change of survey items

For example, only the production volume was surveyed and substituted for computation of the sales index in the past. However, the survey is now changed to cover the sales volume as well. Or, in the past, the survey item for sales included those to the same company's other plants. But it is now divided into sales and others. These cases cause time-series gaps.

5) Change of production and sales structure

Commodities produced by a factory and then consumed at another place within the same factory premises are basically treated as internal-consumption. However, if the factory becomes an independent company, the products should be treated as sales. Or, in case that a commodity is sold by an independent sales company, its inventory is treated as distribution stocks. However, if this sales company is merged with the production company, its inventory should be the manufacturer's stocks. These are examples of time-series gaps due to the change of production and sales structure.

(3) Gap adjustment --- Preparation of link coefficient

Gap adjustment can be conducted in two ways. One is to revise the past figures and the other is to revise the future figures. The time-series of absolute figures can reflect the actual state of production activity better than ever due to the revision that causes the time-series gaps. Therefore, the absolute figures are usually published without any adjustments even after the revision. (However, caution about gaps should be made.) On the other hand, in case of the industrial indices, the usual practice is to make gap-less commodity indices based on the adjustment by multiplying the figures after revision by link coefficients, and then make the gap-less aggregated indices.

There are several methods to prepare the link coefficients as mentioned below. The explanations assume that the revision is carried out in January.

1) Implementation of multiple surveys

$$\text{Link coefficient (L)} = \frac{\text{Old figures (Dec)}}{\text{New figures (Dec)}} \text{ or } \frac{\text{Old figures (Jan)}}{\text{New figures (Jan)}}$$
$$\text{Figures for commodity indices} = \text{New figures} \times L$$

Under this method, either the survey in December based on definitions after revision or that in January based on definitions before revision must be conducted along with the main survey. There is a case that the overlapping period for calculation of the link coefficient is three months.

2) Estimation based on similar surveys

If statistics prepared by industry organizations or those derived from administrative records cover the relevant individual commodities, these are used.

$$\text{Link coefficient} = \frac{\text{Old figures (Dec)}}{\text{New figures (Jan)}} \times \frac{\text{Similar statistics (Jan)}}{\text{Similar statistics (Dec)}}$$

This includes such cases as production volume estimated from production value. However, it is required to carefully and fully examine whether the similar statistics have continuity and whether the proportionality (coverage) between the two is equivalent.

3) Estimation based on gap-less items

If an individual commodity is made up of several sub-commodities and the gaps have occurred in some of them, these are excluded in calculating the link coefficient. This is also applied for the case in which the gaps have occurred with some of the survey items. The method in these cases is the same as 2) mentioned above.

On the other hand, if commodities that were surveyed as two different ones are combined into one, they are sometimes linked as follows. Suppose commodities A and B are combined into (A + B). Their component ratios before the combination are treated as link coefficients, and the absolute figure after the combination is multiplied by these coefficients.

$$\text{Link coefficient of commodity A } (L_A) = \frac{A_{12}}{A_{12} + B_{12}}$$

$$\begin{array}{l} \text{Figures of commodity A} \\ \text{for commodity index} \end{array} = (A + B)_t \times L_A$$

$$\text{Link coefficient of commodity B } (L_B) = \frac{B_{12}}{A_{12} + B_{12}}$$

$$\begin{array}{l} \text{Figures of commodity B} \\ \text{for commodity index} \end{array} = (A + B)_t \times L_B$$

In addition, if re-classification changes commodities A and B into A' and B', the sum of A and B and that of A' and B' are continuous, but they are not continuous on the individual basis. In this case, the following method is sometimes applied.

$$\text{Link coefficient of commodity A } (L_A) = \frac{(A' + B')_1}{(A + B)_{12}} \times \frac{A_{12}}{A'_1}$$

$$\begin{array}{l} \text{Figures of commodity A} \\ \text{for commodity index} \end{array} = A'_t \times L_A$$

$$\text{Link coefficient of commodity B } (L_B) = \frac{(A' + B')_1}{(A + B)_{12}} \times \frac{B_{12}}{B'_1}$$

$$\begin{array}{l} \text{Figures of commodity B} \\ \text{for commodity index} \end{array} = B'_t \times L_B$$

4) Recovery of omitted establishments and cut-off

(i) Recovery of omitted establishments

$$\text{Link coefficient} = \frac{\text{Published figures (Jan)} - \text{Recovered figures (Jan)}}{\text{Published figures (Jan)}}$$

(ii) Cut-off

$$\text{Link coefficient} = \frac{\text{Published figures (Dec)}}{\text{Published figures (Dec)} - \text{Cut-off figures (Dec)}}$$

(iii) Combination of (i) and (ii)

$$\text{Link coefficient} = \frac{\text{Published figures (Jan)} - \text{Recovered figures (Jan)}}{\text{Published figures (Dec)} - \text{Cut-off figures (Dec)}} \times \frac{\text{Published figures (Dec)}}{\text{Published figures (Jan)}}$$

Although recovery of omissions and cut-off are usually carried out from the beginning of the year in January to obtain full annual figures, there are cases in which the omissions for December are known. If December figures are known in advance, the following methods of (iv) and (v) are sometimes used.

(iv) If recovered figures in December can be used

$$\text{Link coefficient} = \frac{\text{Published figures (Dec)}}{\text{Published figures (Dec)} + \text{Recovered figures (Dec)}}$$

(v) If cut-off is carried out at the same time

$$\text{Link coefficient} = \frac{\text{Published figures (Dec)}}{\text{Published figures (Dec)} + \text{Recovered figures (Dec)} - \text{Cut-off figures (Dec)}}$$

7.4 Operations Concurrent With Base Year Revision

The operations described below must be carried out concurrently with the base year revision of New MISSI industrial indices, which, as is suggested in Chapter 6, should basically be carried out at 5-year intervals.

(1) Reviewing target commodities (commodities listed in the questionnaires)

The production configuration of a country is constantly changing, and along with those changes, the types of representative products being manufactured domestically change as well. Thus, it is a given that the commodities targeted for the MSP must be periodically reviewed and updated as changes take place in the principal product configuration.

Changes in the principal domestic products can be inferred based on such cases as a commodity for which responses were previously submitted by a large number of establishments recently being reported by fewer establishments, and the opposite cases. If a commodity comes along which is an entirely new principal product debuting on the market, which has not been listed previously on the questionnaires, an understanding of the commodity must be acquired through information collection activities such as ongoing interviews and surveys conducted with establishments and industrial organizations.

(2) Re-calculating the cut-off line and re-selecting target establishments

The cut-off line by sector that serves as a criterion for selecting MSP target establishments moves vertically in response to changes in the value-added scales of the various sectors, or changes in the numbers of principal establishments and employees. For this reason, the cut-off line must periodically be re-calculated based on the most recent CPBI or ASPBI results, and new target establishments chosen based on the result of the re-calculation. If the master list comprising of a register of target establishments is updated every year, target establishments can be selected by using the master list, based on the new cut-off line.

Because re-calculating the cut-off line and re-selecting target establishments are operations that take a considerable amount of time and effort, basically they are done at 5-year intervals, along with the base year revision. The operation of reviewing the establishments targeted for the MSP, however, leaving the cut-off line as it is, must be

carried out as an annual operation, together with the annual revision, as described earlier in **7.3.1**.

(3) Weight re-calculation

The Laspeyres formula requires the weight at the same point of time as the base year. To accomplish this, the weight is re-calculated along with the base year revision.

Chapter 6 describes how to calculate the weight.

Chapter 8 Issues in Implementing the New MISSI

Chapter 8 Issues in Implementing the New MISSI

A detailed design for the MSP was proposed in Chapter 5 of this report. Chapters 6 and 7 put forth proposals for the development of indices and the survey management to be used assuming that the new MISSI, which combines the sectors in which the MSP is used and those continuing to use the current MISSI, is implemented, based on the criterion of whether or not these are appropriate for volume surveys by commodity.

This chapter presents issues that must be addressed if the NSO implements the new MISSI in the future as a government-designated survey.

8.1 MSP Pilot Survey

In 2002, the NSO will implement the MSP pilot survey based on the detailed MSP design proposal created in cooperation with the Study Team and outlined in this report. The pilot survey will cover 24 sectors in the manufacturing industry, and will target establishments all over the country that have been confirmed by the Qualification Study of Manufacturing Establishments (QSME) to be producing the targeted commodities. The division of the NSO in charge of the MISSI will conduct the pilot survey along with the current MISSI. The objectives are as follows: 1) to verify survey tools, and 2) to verify and compile commodity production data.

The parallel implementation of the MSP pilot survey and the MISSI in 2002 will no doubt be a budgetary burden for the NSO. It cannot be for more than one year. It is recommended to start the New MISSI which combines the MISSI and the MSP in 2003, when the pilot survey has been completed. The MISSI is a designated survey and, therefore, examination and approval by the Technical Committee are required for any changes to the survey methods, types of disseminated data and indices, and standards for the indices.

Figure S6-1 and S6-2 have already shown the schematic outline proposed for the new MISSI, combining the MSP and the MISSI. All of the sectors possible will be shifted to the volume survey by commodity, while indices of those sectors inappropriate to that survey will continue to be generated by the indirect method of the current MISSI.

Sector indices based on the direct method and those based on the indirect method will be integrated to compute the total manufacturing indices.

8.2 New MISSI

8.2.1 Survey Items

The dissemination target for the current MISSI is 45 days, but in actuality approximately 60 days are required. In order to implement the dissemination period in conformance with the guideline proposed in Chapter 7 and assure timely dissemination, it is absolutely necessary to review the survey items and narrow the focus of the items. In the new MISSI, almost all of the sectors will be shifted to the MSP, but sectors for which the commodities and sector configurations are not suited to being surveyed by commodity will continue to be surveyed using the MISSI method. The objective is to compute the VoPI of the sectors using the indirect method. However, there is no need to use the questionnaire of the current MISSI for these sectors as well.

Table S8-1 shows a comparison of items surveyed in the MSP and the current MISSI. Among the items surveyed in the current MISSI, the minimum items that need to be maintained in the questionnaires for the sectors in which the indirect method is to be applied under the new MISSI are marked.

There are concerns that labor-related data involve drastic fluctuations and cannot be adequately covered using annual surveys alone, and opposition may be raised to excluding this data. Many establishments comment, however, that monthly fluctuations are low and that this item is the easiest of all to which to respond. Quarterly survey data and data provided by other government departments need to be studied to see if they are not enough to monitor labor market, and the relevant entities persuaded.

In the current QSPBI of the NSO, if any of the establishments targeted in the manufacturing sector overlap those covered by the MISSI, those establishments are not surveyed; instead the MISSI results are used. That has been possible because the two share survey items, however, the survey items will be changed under the new MISSI, making it difficult to use those results. The budget for implementing the QSPBI is also affected, and adjustments are required.

Table S8-1 Question Items of Current MISSI and MSP

Current MISSI		MSP
I Total Employment		I Finished Products
A Working Owners and Unpaid Workers	○	101 (A) Beginning Inventory
B Paid Officials and Workers	○	(B) Production
II Total Compensation		(C) Purchased/Imported/Received
A Total Wages and Salaries		(D) Internal Consumption
B Employer's Contribution to SSS, GSIS, Medicare & Others		(E) Domestic Sales
III Sales, Production and Inventory by Major Product		(F) Export
1 Product Name		(G) Transfer
A Net Sales		(H) Ending Inventory
B Production		(I) Production Value
C Inventory of Finished Products		102 Ditto
2 Product Name		103 Ditto
A Net Sales		104 Ditto
B Production		
C Inventory of Finished Products		
3 Product Name		II Number of Employees
A Net Sales		III Monthly Production Capacity
B Production		
C Inventory of Finished Products		
4 Product Name		
A Net Sales		
B Production		
C Inventory of Finished Products		
5 Product Name		
A Net Sales		
B Production		
C Inventory of Finished Products		
6 All Other Products		
A Net Sales	○	
B Production	○	
C Inventory of Finished Products	○	
IV A Total Net Sales/Revenue		
B Other Income		
V Inventory of Raw Materials		
VI Capacity Utilization	○	

○ Items required for new MISSI

8.2.2 Target Sectors

After the sectors covered by the new MISSI were selected on the basis of value added, five sectors were added as a result of the sector study as important sectors of the Philippines. It was proposed in Figure S6-1 that, of the 20 current MISSI major sectors, the eight major sectors listed below should not be included in the new MISSI because of a policy of excluding sectors that have a relatively low degree of importance in terms of assuring timely dissemination of the survey results. Discussion is required with government organizations, and related private organizations, and it is necessary to explain that the aims of the MSP are different from those of other establishment surveys to monitor sector structure, and to persuade them to that point of view.

NSCB, which is responsible for the SNA, agrees to the New MISSI scheme on the premise that these eight major sectors are covered by QSPBI. This is a matter related to the budget for QSPBI, like change of the survey items described in 8.2.1.

- D. Textiles
- F. Wood
- G. Furniture
- I. Publishing
- J. Leather
- K. Rubber
- Q. Machinery, excluding electrical
- T. Miscellaneous

8.2.3 Sectors to Continue with MISSI Approach

In order to produce sector indices with a high level of reliability for sectors for which the MISSI approach (indirect method) is to be continued under the new MISSI, it is suggested that the following improvements be made.

(1) Review of PPS commodities

When computing the VoPI using the indirect method, the PPI continues to be used as the VaPI deflator, as at present. In order to obtain a PPI with a higher level of reliability, the survey commodities of the sector targeted by the PPS should conform to those actually being produced by the establishments targeted by the MISSI.

(2) Review of the selection method of sample establishments targeted by the MISSI

Target establishments for the MSP are selected not by sampling, but rather complete enumeration above the ATE cut-off line. In order to assure conformity, the target establishments need to be reviewed in sectors in which the MISSI approach will continue to be used. A complete enumeration must be used with an ATE cut-off line based on value added, and with no replacement rules.

8.2.4 Usage of Production Volume Data from Other Departments

From the standpoint of assuring the timely dissemination of data and indices, it is important that the production volume data from external sources be put to active use. In particular, if monthly production volume data is available for certain commodities from other government bureaus, those sectors should be excluded from the MSP, thus lightening the burden on both the NSO and the establishments. In addition to data on petroleum products from Department of Energy, this possibility exists for sugar, tobacco and other products as well.

Among private industrial organizations, also, there are instances in which production volume data is compiled and disseminated, but this is limited to data from member companies and normally registration is optional, making it difficult to use this data as is. Cooperation from industrial groups is indispensable, however, when it comes to verifying data obtained through the MSP.

8.2.5 Index Verification

(1) Verification of the New MISSI indices and the current MISSI indices

a) Necessity for comparison

The New MISSI indices and the current MISSI indices overlap for 12-month period of the year 2002 at two levels: “major sector” and “total manufacturing industry”. It would be beneficial, in regard with this period, to look at the degree to which the New MISSI indices and the current MISSI indices are divergent at these two levels, and analyze the reasons for the divergence, in order to evaluate the appropriateness of the New MISSI indices. Also, when linking over the indices from the current MISSI to New MISSI, it is necessary to make a careful study ahead of time to see whether or not the changes in both sorts of indices are moving in the same direction.

Thus, a comparison study on the “total manufacturing index” and the “major sector index” for each of the current MISSI and New MISSI is called for.

b) Contents of comparison

The comparison of the current MISSI indices and New MISSI indices should be carried out with respect to the following points:

1) Comparison of common “major sector indices”

In the New MISSI scheme there will be 11 major sectors common with the current MISSI, so a comparison should be made of 11 index series related to each of the common major sectors.

If the comparison result shows that the two sorts of indices are significantly different for a given major sector, the two must be studied to examine which reflects the actual circumstances more accurately, and to find out what is causing the difference in the directions of the two. And the validity of index linkage in the relevant major sector should also be considered prudently.

2) Comparison of the “total manufacturing index”

The “total manufacturing index” for each of the current MISSI and New MISSI should be compared. Respective “total manufacturing index” expresses an overall trend in the manufacturing industry of the Philippines but is composed of different numbers of major sectors. Namely, New MISSI is basically configured of 12 major sectors (including Apparel & Footwear), while the current MISSI is configured of 20.

If the comparison result of the two, which have different calculation bases respectively, does not reveal a significant divergence between them, it is assumed that the overall trend in the manufacturing industry of the Philippines could be grasped only with the 12 sectors covered under New MISSI. If the two diverge significantly, analysis needs to be conducted to find out why.

c) Trial calculation of the total manufacturing index using only the major sectors targeted by the MSP

When the comparison of the total manufacturing index described in 2) above is carried out, a trial calculation of total manufacturing index only based on the 11

major sectors that the MSP is planning to cover could be made, for a comparison with the current MISSI and New MISSI.

Unlike the current MISSI, indices for the MSP are basically created only by the direct method, so it is important to evaluate the index performance within the MSP by itself. Comparing the total manufacturing index computed only based on the MSP major sectors to the total manufacturing indices of the other two could be one way to do this.

However, the total manufacturing index consisting only of the MSP will not be disseminated but used only for internal studies.

(2) Verification of the New MISSI indices by chain index

a) Purpose of verification by chain index

As proposed in Chapter 6, the industrial indices of New MISSI are of the volume indices based on the Laspeyres formula. In this method, a certain period of time is set as the base period, and aggregated indices are calculated by weighted average using a weight at the base period that is fixed for a given period of time (specifically, for the period until the next revision of the base period). Whereas, it has been pointed out that if commodities of which price decreases and volume increases drastically are included in the index aggregation by this formula, an upward bias will possibility arise in its calculated result.

One method of compensating for this characteristic of the Laspeyres formula is to create a chain index. When calculating a volume index of a certain period of time, the chain index takes the volume from the previous period as the base. In specific terms, a ratio of the volume of the current period to that of the previous period is obtained first and then the ratio is multiplied by the index from the previous period to get the figure of chain index for the current period. This requires, at the same time, that weights based on the price and volume from one period earlier be recalculated every period, in accordance with the shifts of the base period. Thus, the chain index constantly reflects changes in the industrial structure in the weight, making it possible to avoid or reduce the bias produced by a fixed weight.

On the other hand, to compute the chain index, a weight must be created for each new base period, and in actuality this is difficult to repeat as a monthly operation.

Consequently, for instance, a feasible way in practical terms is to compute the chain index as a trial, while using the Laspeyres as an official index formula, by a 5-year cycle in accordance with revisions of the base period, and then compare the result with that from the Laspeyres index.

At any rate, the purposes of verification using the chain index are to periodically determine if there is any bias in the New MISSI indices or not, and to objectively evaluate the accuracy of the New MISSI indices.

b) Formula for the chain index

The Laspeyres volume index based on a fixed weight is expressed by formula [1] below.

$$Q_t^L = \sum_{i=1}^n W_{i,0} \times \left(\frac{q_{i,t}}{q_{i,0}} \times 100 \right) \quad \text{--- [1]}$$

Q: Aggregated index, W: Weight, q: Volume,
 0: Base period, t: Current period,
 i: Selected commodities ($i = 1, 2, 3, \dots, n$)

In formula [1], $\frac{q_{i,t}}{q_{i,0}} \times 100$ is the commodity index. $W_{i,0}$ is the weight fixed at

the base period, and, as shown below, this is calculated from the commodity volume ($q_{i,0}$) and the commodity unit price ($p_{i,0}$) at the base period.

$$W_{i,0} = \frac{p_{i,0} q_{i,0}}{\sum_{i=1}^n p_{i,0} q_{i,0}}$$

The formula for the chain index, on the other hand, varies depending on the base formula used for it. For example, if the base formula is the Paasche formula, the chain index formula will be the Paasche type. Since the MSP industrial indices are based on the Laspeyres formula, the chain index that should be computed is the Laspeyres type, and its formula is as shown in [2] below.

$$Q_t^{LC} = \left(\sum_{i=1}^n W_{i,t-1} \times \left(\frac{q_{i,t}}{q_{i,t-1}} \right) \right) \times Q_{t-1}^{LC} \quad \text{--- [2]}$$

In formula [2], $W_{i,t-1}$ is the weight at the previous period to the current period to be indexed, and is expressed through the following formula.

$$W_{i,t-1} = \frac{p_{i,t-1}q_{i,t-1}}{\sum_{i=1}^n p_{i,t-1}q_{i,t-1}}$$

The specific procedure for calculating formula [2] is as noted below:

- 1) The ratio of the volume of the current period to the previous period ($\frac{q_{i,t}}{q_{i,t-1}}$) is computed for individual commodities.
- 2) The weights ($W_{i,t-1}$) are computed for each period. (It can be presumed, however, that computing the weights on a monthly basis will require vast amounts of time and effort, so in cases where such frequent computation is judged to be difficult, the weight may be re-calculated on a yearly basis.)
- 3) The ratio to the previous period is weight-averaged using the weight from one period earlier.
- 4) The results of weighted averages of each period are consecutively multiplied to compute the chain index.

c) Verification of New MISSI industrial indices

Trial computation of the chain index is carried out at 3 levels: the sector index, the major sector index, and the total manufacturing index of New MISSI. At each level, changes in the chain index and the New MISSI indices are compared for a given period of time by making charts for comparison, and the degree to which they diverge is determined.

If the New MISSI indices are found to diverge remarkably from the chain index, there is a possibility that commodities that have fluctuations in prices and volumes are causing a significant upward bias, so those commodities need to be identified.

The verification results are accumulated to serve as reference information for re-calculation of the weight in accordance with the next revision of the base period.

8.2.6 Seasonal Adjustment of Index

(1) Necessity for seasonal adjustment

Generally, fluctuations in various types of economic and industrial statistics include the seasonal factor occurring repeatedly during the course of a year. Because the New MISSI industrial indices are monthly-based time series, their fluctuations naturally include the seasonal factor. For instance, as Christmas draws near, heightening of demand for ornamental lights and other related products increases their production volumes. That phenomenon has been verified in the Philippines as well.

When the industrial indices are analyzed, it is convenient to use a “seasonally adjusted series” that is obtained by subtracting the seasonal factor from the original index series, which is usually called an “original series”. It is because the fluctuation that occurs repeatedly every year is eliminated from the start in the seasonally adjusted series, so it can be used just as it is in an analysis that focuses specifically on fluctuations due to factors other than the seasonal factor. For this reason, the process of eliminating the seasonal factor from the original series of index, that is the seasonal adjustment, is necessary.

(2) How to execute the seasonal adjustment

The seasonal adjustment is generally done as outlined below.

- 1) An original series for a given period in the past is prepared.
- 2) Using the selected method, the seasonal factor for a 12-month period is computed from the original series prepared in advance.
- 3) The identified seasonal factor is eliminated from the original series newly computed each month to figure out the seasonally adjusted series.

The seasonal factor computed in 2) above is a monthly coefficient used to convert the original series to the seasonally adjusted series for each month. This is obtained from the results of past original series and, ideally, it should be identified from the original series of at least the most recent 5 years. Also, because the seasonal factor needs to be constantly updated, the computation period must be extended by one year once one year's (= 12 months') worth of an original series has been compiled, and the seasonal factor must be re-calculated based on the most recent figures.

There are several methods to compute the seasonal factor, but recently the X-12-ARIMA developed by the U.S. Census Bureau is enjoying wide use. This method can be run using a dedicated software package that can be downloaded from the U.S. Census Bureau Web site (<http://www.census.gov/>).

Annex-1 MSP Questionnaires



Monthly Survey of Production

Processed Meat, Fish, Fruits and Vegetables

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
 Telephone No : _____

Statistical Researcher : _____
 Telephone No : _____

Reference Month:

Year:

0203-01	NSCB APPROVAL No. NSO- Expires 31 March 2003
This inquiry is authorized by COMMONWEALTH ACT 591 and all information collected is CONFIDENTIAL and cannot be used for purposes of taxation, investigation or regulation. Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address: For any question, please call up Tel. No.:	

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dressed/packed poultry	Includes: dressed and fresh (packed) chicken, gallantina, duck, geese, turkey	101	Ton									
Dressed/packed red meat	Includes: fresh (packed) and frozen meat, pork, dressed tripe except poultry	102	Ton									
Preserved/prepared poultry and poultry products	Includes: chicken ham, canned chicken	103	Ton									
Preserved/prepared red meat and red meat products	Includes: hotdog, cooked ham, bacon, chorizo, corned beef, sausages, other canned or processed meat	104	Ton									
Canned/packed fish and	Includes: canned/packed tuna, sardines, squid, shrimp, mackerel, bonito, herring, shell, other crustaceans and mollusks	105	Ton									
Canned/packed fruits	Includes: processed/canned banana, pineapple, mango, etc., preserved fruits, fruit cocktail, fruit jelly	106	Ton									
Fruit and vegetable sauces	Includes: tomato sauce, spaghetti sauce, ketchup, tomato paste and soy sauce	107	Ton									
Flour of potato		108	Ton									

II. Number of Employees		
(14)	Code	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Coconut and Vegetable Oil (Crude and Refined)

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

Reference Month: Year:

NSCB APPROVAL No. NSO-0203-06

Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Crude coconut oil		101	Ton									
Copra cake/pellets	Includes: copra cake, meals and pellets	102	Ton									
Acid oil		103	Ton									
Refined coconut and other vegetable oil	Includes: refined coconut and vegetable oil (including corn oil) and margarine Excludes: acid oil	104	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Dairy Products

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

0203-02NSCB APPROVAL No. NSO-
Expires 31 March 2003

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investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:

For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Condensed milk	Includes: condensed whole milk, condensed filled milk, condensed recombined or reconstituted milk	101	1,000 liters									
Evaporated milk	Includes: evaporated filled milk, recombined & reconstituted filled milk	102	1,000 liters									
Powdered milk (including infants' milk)	Includes: powdered whole milk, powdered skimmed milk, instant filled & full cream milk, follow-up milk, routine infants milk & infants formula	103	Ton									
Ice cream	Includes: ice cream and sherbet, ice drop, ice candy and other flavored ices	104	1,000 liters									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Animal Feeds and Grain Milling

FOR NSO USE ONLY			
YEAR	MO	FN	QN

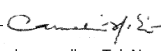
Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

Reference Month: Year:

0203-03NSCB APPROVAL No. NSO-
Expires 31 March 2003

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investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:



For any question, please call up Tel. No.:

Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Chicken starter		101	Ton									
Chicken growing mash		102	Ton									
Broiler starter		103	Ton									
Hog starter		104	Ton									
Hog starter mash		105	Ton									
Hog grower		106	Ton									
Baby pig starter		107	Ton									
Flour of wheat	Flour milling except cassava flour milling	108	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Beverage

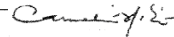
FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

NSCB APPROVAL No. NSO-0203-04
Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
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cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days after
the end of the reference month to the following
address:


For any question, please call up 1-800-...

Reference Month: Year:

I. Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Malt liquor (beer)	Includes: malt liquors such as beer, ale, porter and stout	101	1,000 liters									
Carbonated drinks		102	1,000 liters									
Bottled water	Includes: production, i.e. bottling at the source, of spring or mineral water	103	1,000 liters									
Powder flavored drinks	With or without natural fruit juice	104	Ton									
Liquid flavored drinks	With or without natural fruit juice	105	1,000 liters									
Pure fruit juices and concentrates		106	1,000 liters									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Milled and Refined Sugar

FOR NSO USE ONLY			
YEAR	MO	FN	QN

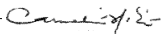
Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-05

Expires 31 March 2003

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Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Refined sugar	Includes: granulated refined sugar, refined sugar in cubes or tablets	101	Ton									
Raw cane sugar and centrifugal sugar		102	Ton									
Molasses		103	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Sugar	301	Ton	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Tobacco Products

FOR NSO USE ONLY			
YEAR	YR	MO	FN

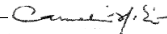
Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

Reference Month: Year:

NSCB APPROVAL No. NSO-0203-07
Expires 31 March 2003

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investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:



For any question, please call up Tel. No.:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(12)
Cigarette	Includes: cigarettes (Salem, Philip Morris, Marlboro, etc)	101	Carton									
Cigar	Includes: cigars, chewing/smoking tobacco	102	1,000 Sticks									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Cigarettes	301	Carton	
Cigars	302	1000 sticks	

NOTE: Assumed operation - 8 hours/day

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Paper and Paper Products

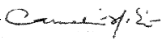
FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-08
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Packaging paper and board	Includes: kraft paper, manila paper, corrugating medium, boxboard, linerboard, cardboard	101	Ton									
Newsprint		102	Ton									
Printing or writing paper (excluding newsprint)	Includes: bond paper, book paper, mimeo paper, adding machine paper	103	Ton									
Sanitary/tissue paper		104	Ton									
Specialty paper and other types	Includes: wax paper, coated paper, crepe paper, crumpled paper, embossed and perforated paper, abaca paper, cigarette paper, carbon paper	105	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Packaging paper and board	301	Ton	
Newsprint	302	Ton	
Printing or writing paper	303	Ton	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Basic chemicals

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____

Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-10
Expires 31 March 2003

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investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:



For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Industrial gases	Includes: oxygen, acetylene, nitrogen and hydrogen (compressed & liquefied)	101	Cubic meter									
Organic acids and organic compounds	Includes: branched alkyl benzene, fatty acid and fatty alcohols	102	Ton									
Polystyrene (PS)		103	Ton									
Polyethylene (PE)		104	Ton									
Polyvinyl chloride (PVC)		105	Ton									
Polypropylene (PP)		106	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Polysterene (PS)	301	Ton	
Polyethylene (PE)	302	Ton	
Polyvinyl chloride (PVC)	303	Ton	
Polypropylene (PP)	304	Ton	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Chemical products

YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____

Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-11
Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
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cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:

For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(12)
Fertilizers and nitrogen compounds	Includes: mixed or composite fertilizers (perfect gro or 14-14-14, 18-46-0, 16-20-0, ammosol or 21-0-0), ammonium nitrate and ammonium sulfate	101	Ton									
Soap and detergents	Includes: toilet soap (including medicated) and laundry soap (detergent bars and detergent powder)	102	Ton									
Other toilet preparations	Includes: glycerin (crude or refined), skin lotions, shampoo and body powder (baby powder)	103	Ton									
Paint		104	Ton									
V A L U E (I N P E S O S)												
Drugs and medicines	Includes: antibiotics (penicillin, sulfonamides, tetracyclines, streptomycin, chloromphenicols and other antibiotics combinations), vitamins (vitamin A, D, and E, vitamin B and B complex, vitamin C, multivitamin w/ or w/o minerals, iron preparations, pre and post natal vitamins, vitamin drops, vitamin powder, appetite stimulants and other nutritional preparations) and analgesic and antipyretics	105	Pesos									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Refined Petroleum Products

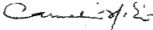
FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-09
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:


For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Gasoline	Regular		101	1,000 liters								
	High octane		102	1,000 liters								
Lubricants			103	1,000 liters								
Heavy fuel oils		Includes: heavy fuel oil-A, B and C	104	1,000 liters								
Kerosene			105	1,000 liters								
Naphtha			106	1,000 liters								
Liquefied petroleum gas (LPG)		Composed of propane, propylene, butane or butylenes	107	Ton								
Asphalt		Includes: straight asphalt, blown asphalt and others	108	Ton								
Paraffin wax			109	Ton								

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Gasoline	301	1,000 liters	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Glass products

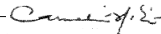
FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-12
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Flat glass	Includes : float glass	101	Ton									
Glass container	Includes: glass bottles	102	Gross									
Tempered glass		103	Ton									
Figured glass		104	Ton									
Fluorescent glass		105	1,000 pieces									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Cement

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-13

Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Portland cement	Includes: white cement	101	Ton									
Pozzolan cement		102	Ton									
Clinker		103	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Cement	301	Ton	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Basic Iron and Steel

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-14
Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
information collected is **CONFIDENTIAL** and
cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:

For any question, please call up Tel. No.:

Reference Month:Year:

Finished Products				V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity		Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
									Domestic	Export			
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Long products	Wire rods	Includes: ordinary wire rods, special wire rods	101	Ton									
	Steel bars	Includes: heavy, medium, light	102	Ton									
	Window section bars /angle bars/ channel bars		103	Ton									
Flat products	Pipes (GI / Welded)	Includes: steel pipes and tubes	104	Ton									
	Tin plates		105	Ton									
	Galvanized sheets (GI)		106	Ton									
	Prepainted sheets (PPGI)		107	Ton									
	Hot rolled coils	Includes : steel coils, including bars in coils	108	Ton									
	Cold rolled coils		109	Ton									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Non - ferrous Metals

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-15
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)	
Target Commodity		Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
									Domestic	Export			
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Refined precious metals	Gold		101	Ounce									
	Silver		102	Ounce									
Aluminum foil		Includes: non-ferrous rolling, drawing and extrusion	103	Kilo gram									
Aluminum sheets		Includes: flat sheets and coiled sheets	104	Kilo gram									
Washers, fasteners		Includes: non-ferrous rolling, drawing and extrusion	105	Kilo gram									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Fabricated Metal Products

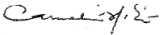
FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-16
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E								Sales		Transfer	Ending Inventory	VALUE OF PRODUCTION (In Pesos) (13)
Target Commodity (1)	Description of Commodity (2)	Code (3)	Unit of Measure (4)	Beginning Inventory (5)	Production (6)	Purchased/ Imported/Received (7)	Internal Consumption (8)	Domestic (9)	Export (10)						
Pre-fabricated modular structures	Includes: structural steel products and metal components of bridges, smoke stacks and buildings	101	Piece												
Reservoir tank	Includes: reservoirs, tanks and similar containers of types normally installed as fixtures for storage or manufacturing use, of metal	102	Piece												
Doors and their frames		103	Piece												
Window frame		104	Piece												
Crown		105	1,000 pieces												
Metal cap		106	1,000 pieces												
Drum		107	Piece												
Tin can		108	Piece												
Wire strands		109	Ton												
Barbed wire		110	Ton												

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Domestic Electric Appliances

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

Reference Month: Year:

0203-17

NSCB APPROVAL No. NSO-

Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
information collected is **CONFIDENTIAL** and
cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:

For any question, please call up Tel. No.:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Domestic	Export	(11)	(12)	(13)
Electric fan		101	Unit									
Stove		102	Unit									
Cooking Range		103	Unit									
Freezer		104	Unit									
Refrigerator		105	Unit									
Washing machine		106	Unit									
Air conditioning machine	For home/business	107	Unit									
	For motor vehicles	108	Unit									
Microwave oven		109	Unit									
Flat iron		110	Unit									
Rice cooker		111	Unit									
Toaster		112	Unit									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

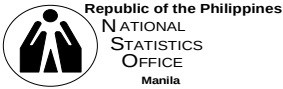
III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Refrigerators	301	Unit	
Washing machines	302	Unit	
Air conditioning units	303	Unit	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Office, Accounting and Computing Machinery

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

NSCB APPROVAL No. NSO-0203-18
Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:



For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Personal computer	Includes: notebook type, desktop type	101	Unit									
Display monitors (including CRT monitors)	Includes: Monitors for personal computers	102	Unit									
Projector		103	Unit									
Printer	Includes: Printers for personal computers	104	Unit									
Scanner	Includes: scanners for personal computers	105	Piece									
Calculator		106	Piece									
Hard disc drive		107	1,000 pieces									
Floppy disc drive		108	1,000 pieces									
Compact disc drive		109	1,000 pieces									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Hard disk drive	301	Unit	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Batteries and Lighting Equipment

FOR NSO USE ONLY			
YEAR	MO	FN	QN

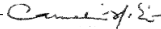
Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-19

Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
information collected is **CONFIDENTIAL** and
cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:



For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dry cell battery	Includes: round type carbon zinc batteries, flat type carbon zinc batteries, silver oxide batteries, alkaline manganese dioxide batteries and lithium batteries	101	1,000 Pieces									
Lead-acid storage battery	Includes: batteries for automobiles and motorcycles, and small-sized sealed lead acid batteries	102	Pieces									
Incandescent lamp	Includes: incandescent lamp for general lighting, for motor vehicles, tungsten halogen lamps, subminiature lamps and others	103	1,000 Pieces									
Fluorescent lamp	Includes: straight type, circular type, and fluorescent lamp for LCD back light	104	1,000 Pieces									
Decorative lamp	Includes: christmas lights and other decorative lamps and lights	105	1,000 Pieces									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Electronic Valves, TV and Radio Transmitters and Line Telephony

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____

Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-20

Expires 31 March 2003

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Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

Reference Year: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Television picture tube	For color televisions, computers and related equipments	101	Piece									
Microwave tube		102	Piece									
Receiver /amplifier valve and tube		103	Piece									
Radio/television transmitter	Includes: radio/television broadcasting equipment, and radio communication equipment (fixed and mobile)	104	Unit									
Television camera		105	Unit									
Telephone set	Includes: standard type and cordless type	106	Unit									
Cellular phone		107	Unit									
Fax machine		108	Unit									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name
Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
TV and Radio Receivers, and Sound or Video Recording Apparatus

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____
Telephone No : _____
Statistical Researcher: _____
Telephone No : _____

NSCB APPROVAL No. NSO-0203-21
Expires 31 March 2003

This inquiry is authorized by
COMMONWEALTH ACT 591 and all
information collected is **CONFIDENTIAL** and
cannot be used for purposes of taxation,
investigation or regulation.

Please return this form properly
accomplished not later than ten (10) days
after the end of the reference month to the
following address:

For any question, please call up Tel. No.:

Reference Month: Year:

Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Color television set	Includes: color television receivers and liquid crystal television receivers	101	Unit									
Audio component	Any combination of radio, cassette and CD player	102	Unit									
Car audio		103	Unit									
Radio	Radio receivers	104	Unit									
Karaoke	Karaoke music players	105	Unit									
Video cassette tape recorder (VCR)		106	Unit									
Video cassette tape player (VCP)		107	Unit									
Video compact disc (VCD) player		108	Unit									
Digital virtual disc (DVD) player		109	Unit									
Answering machine		110	Unit									
Cassette tape player		111	Unit									
Digital audio disc (CD) player		112	Unit									
Tape/disc (blank)		113	1,000 pieces									
Microphone		114	1,000 pieces									
Headphone/earphone		115	1,000 pieces									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Color television set	301	Unit	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Motor Vehicles and Bodies for Motor Vehicles

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

NSCB APPROVAL No. NSO-0203-22

Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

Reference Month:Year:

Finished Products			V O L U M E									VALUE OF PRODUCTION (In Pesos)	
Target Commodity		Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer		Ending Inventory
									Domestic	Export			
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Passenger car		Includes: private cars and taxi cab whether manual or automatic transmission	101	Unit									
Utility vehicle	Passenger /owner type jeepney		102	Unit									
	Other utility vehicle		103	Unit									
Truck	Light truck (3-6 tons)	Includes: light and medium trucks for transport of goods	104	Unit									
	Other truck (over 6 tons)	Includes: heavy trucks for transport of goods	105	Unit									
Bus		Includes: passenger buses	106	Unit									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Passenger cars/utility vehicles, excluding jeepney	301	Unit	

Note: Assumed operation - 8 hours/day

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Parts and Accessories for Motor Vehicles

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person:	
Telephone No :	
Statistical Researcher:	
Telephone No :	

NSCB APPROVAL No. NSO-0203-23

Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

Reference Month:Year:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Domestic	Export	(11)	(12)	(13)
Brake	Includes: brakes for all types of motor vehicles	101	Unit									
Gear box	Includes: gear boxes for all vehicles	102	Unit									
Radiator	Includes: radiator and caps for motor vehicles	103	Unit									
Wheel rim	Includes: wheel center discs and center caps	104	Unit									
Chassis	Includes: chassis for all vehicles except chassis fitted with engines	105	Unit									
Axle	Includes: axles for all types of motor vehicles	106	Unit									
Wire harness		107	Unit									
Transmission		108	Unit									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: Tel No:

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!



Monthly Survey of Production
Motorcycles

FOR NSO USE ONLY			
YEAR	MO	FN	QN

Contact Person: _____ Telephone No : _____
Statistical Researcher: _____ Telephone No : _____

NSCB APPROVAL No. NSO-0203-24

Expires 31 March 2003

This inquiry is authorized by **COMMONWEALTH ACT 591** and all information collected is **CONFIDENTIAL** and cannot be used for purposes of taxation, investigation or regulation.

Please return this form properly accomplished not later than ten (10) days after the end of the reference month to the following address:

For any question, please call up Tel. No.:

Reference Month: Year:

I. Finished Products			V O L U M E								VALUE OF PRODUCTION (In Pesos)	
Target Commodity	Description of Commodity	Code	Unit of Measure	Beginning Inventory	Production	Purchased/ Imported/Received	Internal Consumption	Sales		Transfer	Ending Inventory	
								Domestic	Export			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Motorcycles	Includes: motorcycles and motor scooters	101	Unit									

II. Number of Employees		
	Code	
(14)	(15)	(16)
Total Number of Employees	201	

III. Monthly Production Capacity			
Specification	Code	Unit of Measure	Volume
(17)	(18)	(19)	(20)
Motorcycles	301	Unit	

Note: Assumed operation - 3 shifts (24 hours/day)

Remarks

I hereby certify that the above information is substantially accurate.

Signature of official over printed name

Date: _____ Tel No: _____

THANK YOU VERY MUCH FOR YOUR COOPERATION!!!