Chapter 2   Results of Pretest Survey

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2.1   Pre-Qualified Sample Establishments

(1)   The number of pre-qualified sample establishments

As discussed in **1.2.3**, as a result of the primary screening of sample establishments to be surveyed by the pretest survey, a total of 605 establishments, were selected as pre-qualified sample establishments in 22 sectors.   Due to some duplication, i.e., the same establishments selected in two or three sectors, however, the nominal total number of pre-qualified establishments was 640. (See Table 2-1.)

For the sector "181: Manufacture of garments," different forms were prepared for two sub-categories: "181-10: For women, girls and infants" and "181-20: For men and boys."   However, as these forms were designed for the same sector, they were not counted separately, i.e., if an establishment filled out both forms 181-10 and -20, they would be counted as one respondent.

Table 2-1   Number of Pre-Qualified Establishments for Pretest Survey

Questionnaire Number	Title of Questionnaire	Nominal number of pre-qualified samples
First Group		
151–10	Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats	88
155–10	Manufacture of beverages	19
160–10	Manufacture of tobacco products	7
181–10	Manufacture of garments (for women, girls and infants)	199
–20	Manufacture of garments (for men and boys)	
232–10	Manufacture of refined petroleum products	6
242–10	Manufacture of other chemical products	72
262–10	Manufacture of cements	9
271–10	Manufacture of iron and steel	45
321–10	Manufacture of electronic valves and tubes, television and radio transmitters, and apparatus for line telephony and line telegraphy	28
322–10	Manufacture of semi-conductor and other electronic components	29
324–10	Manufacture of television and radio receivers, sound or video recording apparatus, and associated goods	21
341–10	Manufacture of motor vehicles and bodies for motor vehicles	14
343–10	Manufacture of parts and accessories for motor vehicles	27
Second Group		
152–10	Manufacture of dairy products	9
210–10	Manufacture of pulp, paper and paperboard	10
241–10	Manufacture of basic chemicals	10
252–10	Manufacture of plastic products	10
289–10	Manufacture of structural metal products and other fabricated metal products	9
293–10	Manufacture of domestic electric appliances	4
300–10	Manufacture of office, accounting and computing machinery	8
314–10	Manufacture of primary cells and batteries, lighting equipment and electric lamps, and other electrical equipment	10
359–10	Manufacture of motorcycles and bicycles	6
TOTAL		640

(2)   267 MISSI samples among pre-qualified establishments

The pre-qualified establishments include some sample establishments for the current MISSI, totaling 267 (Table 2-2).

Table 2-2 Status of Pre-Qualified Establishments Extracted from MISSI Samples

SECTOR	All MISSI samples selected for pretest	Selected by CSP criteria	Not selected by CSP criteria	1) ATE is less than the cut-off line for CSP	2) Classified in a different PSIC in the master list	3) Classified in a different PSIC in the master list and ATE is less than the cut-off line	4) Plant is not located in NCR or Calabarzon but head office is	5) Economic organization in master list is main office which is out of scope in NSO establishment surveys	6) Possibly duplicated (spelling difference, abbreviation or changed name)	7) Marked 'D' in the master list with remark 'CLOSED' or simply marked for deletion in the master list	8) Duplicated (missed during verification of overlap samples)	9) Transferred elsewhere in Calabarzon or NCR	10) Not found in the master list
TOTAL	267												
First Group	215	80	135	44	32	18	14	3	5	3	2	1	13
151	37	7	30	2	10	7	5	1					5
155	10	5	5	2					3				
160	6	2	4	2					1	1			
181	28	17	11	1	6						2	1	1
232	6	2	4	2			1				1		
242	51	20	31	19	2	2	2			1			5
262	7	3	4				4						
271	25	8	17	7	2	4	2	1					1
321, 323, 324	18	5	13	2	10	1							
322	16	6	10	4	1	3						1	1
341-3, 359	11	5	6	3	1	1							1
Second Group (*)	52												
152	9												
210	10												
241, 252	10												
281, 289	9												
292-4	4												
300 (**)	0												
314-5	10												

(*) For the 2nd group, samples are selected from MISSI samples. Each sector covers at most 10 top establishments among MISSI samples as measured by share in value-added.

(**) Sector 300 is not covered by MISSI, and all the samples for this sector are extracted from the master list of establishment.

Sample establishments in the pretest survey were classified in any of the following categories, a) through d). The 267 sample establishments surveyed by both of the MISSI and the pretest survey are included in b), c) or d).

<Sectors included in the First Group of the pretest survey>

a) Sample establishments selected from NSO's Master List of Establishments using the CSP criteria (cut-off method) for sample screening, which are not covered by the MISSI.

b) Sample establishments selected from NSO's Master List of Establishments using the CSP criteria for sample screening, which are also covered by the MISSI.

c) Sample establishments that were not selected from NSO's Master List of Establishments due to failure to meet the CSP criteria, and then were added to the pretest list because they are MISSI sample establishments.

<Sectors included in the Second Group of the pretest survey>

d) Ten (10) establishments selected from the MISSI samples on account of contribution in terms of value-added, regardless of the CSP criteria. (If less than 10, all the MISSI samples were selected.)

Table 1-2 above also shows the status of the MISSI samples selected as pre-qualified establishments for the pretest survey.

In the First Group, 80 MISSI samples establishments were selected since they met the CSP criteria, accounting for around 30% of total 267. They correspond to category b) above. Also, 135 establishments (50% of total) which did not meet the CSP criteria were added to the pretest samples because of their status as MISSI samples. They corresponds to category c).

In the Second Group, for all sectors, top ten (10) establishments as measured by share in total value-added were selected from MISSI samples, regardless of the CSP criteria, totaling 52 establishments (20% of total). They correspond to category d).

In addition, Table 1-2 classifies 135 sample establishments selected on account of MISSI samples --- category c) above --- according to the reason for not meeting the CSP criteria, which are as follows:

1) ATE is less than the cut-off line for CSP;
2) Classified in a different PSIC in the Master List of establishments;
3) Classified in a different PSIC in the Master List of establishments and ATE is less than the cut-off line for CSP;
4) Plant is not located in NCR or CALABARZON but head office is;
5) Economic organization in the Master List of establishments is main office which is out of scope in NSO's establishment surveys;
6) Possibly duplicated with another sample of pretest survey (spelling difference, abbreviation or changed name);
7) Marked "D" in the Master List of establishments with remark "CLOSED" or simply marked for deletion in the Master List of Establishments;
8) Duplicated (missed during verification of overlap samples);
9) Transferred elsewhere in NCR or CALABARZON; and
10) Not found in the Master List of establishments.

Among these reasons, 1) shows the highest percentage, 33% (44 out of 135), followed by 2) 24% (32), and 3), 4) and 10) show more or less the same percentage. These five reasons account for a combined total of 80%.

Reason 1) indicates that the current MISSI covers establishments with a relatively small number of employees. Coupled with establishments not qualified for reason 3), MISSI samples that failed to meet the ATE cut-off line, total 62 establishments (46% of total). This might mean that the ATE cut-off line used for selecting top rank establishments (value added) in each sector do not always reflect the actual situation, i.e., in some sectors, the scale of employment might not be proportional to the scale of value added. If the MISSI includes relatively small establishments that contribute greatly to value added by a specific sector, sample establishments in the MISSI should be positively taken for the CSP.

On the other hand, reason 2) means that some sample establishments classified in a sector under the MISSI are classified in a different sector in NSO's Master List of establishments. This indicates that NSO's industrial classification lacks consistency and compatibility in some parts. If establishments that were selected for reason 3) are added, MISSI samples not meeting the CSP criteria due to the classification in a different PSIC amount to 50 establishments (37% of total).

Reason 4) justifies exclusion of establishments from the survey, as they are not operated in NCR or CALABARZON area.

Reason 10) seems to reflect the fact that NSO's Master List of establishments is not used as the sampling population for the MISSI. Recently the MISSI has been updating the samples on the basis of commercially available information such as "Top 1,000 Corporations". This might be a reason why MISSI's sample base is deviated from the Master List of Establishments and a number of establishments selected for the MISSI are not registered in the Master List.

2.2 Qualification of Sample Establishments

During the pretest survey, each of the 605 pre-qualified establishments were visited by enumerators to check their qualification as sample establishments, by confirming if they actually make products that are specified in the questionnaires.

Note that the nominal total number of samples establishments to be qualified was 640, because of duplicated classification of some sample in two or three sectors.

(1) Qualification method

Establishments covered under the pretest survey were required to meet the following two criteria. The 640 pre-qualified establishments were further evaluated according to these criteria to select "qualified" sample establishments. (Figure 2-1)

1) Producing the commodities specified in the questionnaires; and
2) Located in NCR or CALABARZON area.

Figure 2-1   Qualification of Sample Establishments for Pretest Survey

"Qualified" sample establishments

Satisfying the criteria of qualification.

"Pre-qualified" sample establishments

640 establishments in nominal total.

Qualification
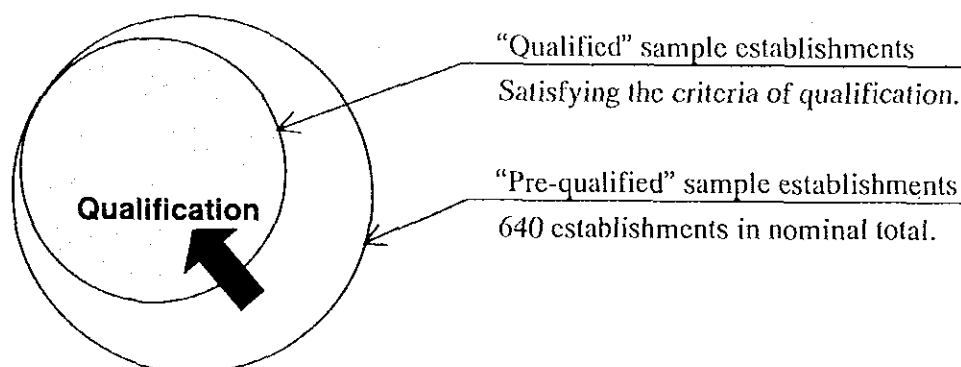
The 640 pre-qualified establishments varied greatly in their nature and status. For instance, some establishments that meet the two criteria 1) and 2) may not operate temporarily due to a strike or other reasons.

To gain the accurate understanding of the current status of the pre-qualified establishments, they were classified into the following eight segments of status for final screening.

Status 1   Those establishments that are qualified according to the above criteria 1) and 2);

2   Those qualified but out of production temporarily due to strike or other reasons;

3   Those qualified but refuse to receive the questionnaire;

4   Those which are not producing the commodities listed in the questionnaire;

5   Those out of production due to bankruptcy or long suspension;

6   Those specialized in recycling or repair rather than manufacturing;

7   Those which are not located in NCR or CALABARZON; and

8   Those duplicated with another sample establishment.

Establishments that are classified in statuses 1-3 were qualified as sample establishments for the pretest survey, while those classified in statuses 4-8 were disqualified. Among qualified establishments, those classified in statuses 1 and 2 were requested to complete and submit the questionnaire during the pretest survey period (January–March 2001), regardless of the actual status of operation, e.g., a plant did not operate in a month due to a temporary shutdown, they were requested to report so. On the other hand, establishments classified in status 3 were continuously asked to take part in the pretest survey throughout the survey period.

(2) Results of qualification
Table 2-3 shows the results of qualification.

Table 2-3   Results of Qualification of Sample Establishments for Pretest Survey

PSIC 3-digit	Sector Name	Qualified Establishment				Disqualified Establishment						TOTAL
		Status-1	2	3		Status-4	5	6	7	8		
151	Meat, fish, fruit etc.	53	3	2	58	18	9	0	1	2	30	88
155	Beverages	8	1	1	10	4	0	2	0	3	9	19
160	Tobacco	5	0	0	5	1	0	0	0	1	2	7
181	Garments	117	7	10	134	18	36	0	5	6	65	199
232	Refined petroleum	6	0	0	6	0	0	0	0	0	0	6
242	Chemical products	34	0	4	38	21	7	0	3	3	34	72
262	Cements	6	1	0	7	0	1	0	1	0	2	9
271	Iron and steel	25	1	4	30	10	5	0	0	0	15	45
321, 323	Electric valves, TV transmitters	9	0	0	9	16	2	1	0	0	19	28
322	Semi-conductors	19	0	1	20	7	0	0	0	2	9	29
324	TV&radio receivers, etc.	8	0	1	9	11	1	0	0	0	12	21
341-2	Motor vehicles	13	0	0	13	0	0	0	0	1	1	14
343	Parts for automobiles	17	2	1	20	5	1	0	0	1	7	27
	TOTAL of 1st 13 SECTORS	320	15	24	359	111	62	3	10	19	205	564
152	Dairy products	3	0	2	5	4	0	0	0	0	4	9
210	Pulp, paper and paperboard	7	0	1	8	1	1	0	0	0	2	10
241	Basic chemicals	8	0	1	9	1	0	0	0	0	1	10
252	Plastic	9	0	0	9	1	0	0	0	0	1	10
281, 289	Structural metal products	7	1	0	8	1	0	0	0	0	1	9
292-4	Domestic electric appliances	1	0	0	1	3	0	0	0	0	3	4
300	Office&computing machinery	5	0	0	5	3	0	0	0	0	3	8
314-5	Cell, Lighting equipment, etc.	7	0	0	7	3	0	0	0	0	3	10
359	Motorcycles & bicycles	5	0	0	5	1	0	0	0	0	1	6
	TOTAL of 2nd 9 SECTORS	52	1	4	57	18	1	0	0	0	19	76
	TOTAL of 22 SECTORS	372	16	28	416	129	63	3	10	19	224	640

The qualified samples totaled 416 establishments, including those classified in statuses 1, 2 and 3, representing 65% of total 640 pre-qualified samples. 372 samples were classified in status 1 and accounted for 58% of total. Note that this figure "372" was used as a denominator to calculate the rate of questionnaire collection for the pretest survey.

28 establishments were unwilling to participate in the pretest survey, accounting for slightly below 7% of the qualified samples (416). In fact, the figure was smaller than expected in light of the fact that the pretest survey was essentially an informal survey conducted by JICA, not the Philippine government.

Every sector had one or more sample establishments qualified. Only one established was qualified for the sector "291-294 (questionnaire number 293-10): Manufacture of domestic electric appliances."

On the other hand, 224 establishments were classified in statuses 4-8 and so disqualified, accounting for 35% of 640 pre-qualified sample establishments. By status category, the highest percentage was classified in status 4 (not producing the commodities in the questionnaire – 58% of all the disqualified samples), totaling 129 establishments, which were identified in all the sectors. Then, 63 established were classified in status 5 (out of production due to bankruptcy or long-term suspension), representing 28%.

Note that 60 out of 267 MISSI samples included in the pre-qualified establishments were classified in status 4. Table 2-4 shows their details and indicates that many sectors contain MISSI samples classified in status 4. Both MISSI and the pretest survey have respectively extracted major establishments of each sector as survey targets using their own sampling method. Therefore, it was expected that most of MISSI samples in the pre-qualified establishments would be qualified for the pretest survey. However, as a result, 60 MISSI samples were classified in status 4.

Table 2-4 Number of MISSI Samples Classified in Statuses 4-8
for Pretest Survey

Sector	Number of MISSI Samples	Status Code of Dis-qualification					
		Total	4	5	6	7	8
TOTAL	267	81	60	12	1	3	5
First Group							
151	37	14	11	2		1	
155	10	4	2		1		1
160	6	1	1				
181	28	4	1	2			1
232	6	0					
242	51	22	15	5		1	1
262	7	1				1	
271	25	7	6	1			
321, 323, 324	18	9	8	1			
322	16	5	3				2
341-3, 359	11	0					
Second Group							
152	9	4	4				
210	10	2	1	1			
241, 252	10	1	1				
281, 289	9	1	1				
292-4	4	3	3				
300	0	0					
314-5	10	3	3				

The MISSI does not involve the screening process, like the qualification in the pretest survey, to exclude establishments that make products not covered by the survey. As a result, there is certainly the case that an establishment that does not make a major commodity listed in the pretest questionnaire is covered by the MISSI. In fact, this is a main reason why a large number of MISSI samples were classified in status 4.

In light of the fact that the selection of commodities for the CSP has not been completed, it is useful to check and identify what products are made by the establishments classified in status 4, including MISSI samples. (Annex 6 summarizes the results of field investigation on the status 4 establishments and their products, which was conducted concurrently with the sample qualification.) If some of these products are considered as major commodities for the Philippine manufacturing industry, they will need to be added to the CSP questionnaire.

Classified in status 6 were only three establishments, two in the sector "155: Manufacture of beverages" and one in the sector "321&323 (questionnaire number 321-10): Manufacture of electronic valves and tubes, television and radio transmitters, and apparatus for line telephony and line telegraphy." However, detailed information on these establishments was not available, such as breakdown of recycling/repair and manufacturing, and their major products. It is necessary to check the current status of these status 6 establishments in order to ensure accurate qualification.

(3) Further breakdown of status 4 establishments

Under the above definition, status 4 refers to establishments which are not producing the commodities specified in the questionnaire. However, field investigation on some establishments classified in status 4 revealed that they could be further divided into sub-categories with distinctive reasons. Under the pretest survey, therefore, status 4 establishments were classified into the following seven categories to identify more specific reasons. Note that reason 6) below is closest to the original definition of the status 4 establishment.

1) The establishment does not belong to the manufacturing industry but specialized in another industry;
2) The establishment is misclassified;
3) The establishment is difficult to be classified to a specific sector due to a variety of products;
4) The establishment is considered to be qualified;
5) There is a lack of information on activities of the establishment;
6) The establishment is exactly producing other commodities than specified in the questionnaire; and
7) The establishment is negligible due to a very small share in the market.

Table 2-5 shows composition of the status 4 establishments according to the above reasons.

Table 2-5   Further Breakdown of Status 4 Establishments for Pretest Survey

Questionnaire Number	Sector Name	Reasons for being "status-4" establishments in Pretest Survey							TOTAL Status-4
		1) Not manufacturing	2) Misclassified	3) Difficult to be classified	4) Considered to be qualified	5) Lack of information	6) Producing other commodities	7) Negligible (small share)	
151-10	Meat, fish, fruit etc.	0	11	0	6	0	0	1	18
155-10	Beverages	0	3	0	0	0	1	0	4
160-10	Tobacco	1	0	0	0	0	0	0	1
181-10/20	Garments	2	12	0	1	3	0	0	18
232-10	Refined petroleum	0	0	0	0	0	0	0	0
242-10	Chemical products	1	3	0	3	3	9	2	21
262-10	Cements	0	0	0	0	0	0	0	0
271-10	Iron and steel	0	9	0	0	1	0	0	10
321-10	Electric valves, TV transmitters	0	11	0	1	4	0	0	16
322-10	Semi-conductors	0	3	0	2	2	0	0	7
324-10	TV&radio receivers, etc.	0	6	0	0	5	0	0	11
341-10	Motor vehicles	0	0	0	0	0	0	0	0
343-10	Parts for automobiles	0	2	0	0	1	0	2	5
TOTAL of 1st 13 SECTORS		4	60	0	13	19	10	5	111
152-10	Dairy products	0	0	0	0	0	3	1	4
210-10	Pulp, paper and paperboard	0	0	0	0	0	1	0	1
241-10	Basic chemicals	0	0	0	0	1	0	0	1
252-10	Plastic	0	0	0	0	1	0	0	1
289-10	Structural metal products	0	1	0	0	0	0	0	1
293-10	Domestic electric appliances	0	1	0	0	1	0	1	3
300-10	Office&computing machinery	0	0	0	0	3	0	0	3
314-10	Cell, Lighting equipment, etc.	0	1	0	0	1	0	1	3
359-10	Motorcycles & bicycles	0	0	0	0	1	0	0	1
TOTAL of 2nd 9 SECTORS		0	3	0	0	8	4	3	18
TOTAL of 22 SECTORS		4	63	0	13	27	14	8	129

Out of 129 establishments classified in status 4, reason 2) "misclassification" showed the highest percentage (49%) and totaled 63 establishments, followed by reason 5) "lack of information on activities of the establishment" (27 establishments, 21%). These two reasons accounted for a combined share of 70%.

The fact that a large number of establishments were classified in status 4 due to reason 2) indicates that pre-qualified establishments selected for the pretest survey had contained many establishments that had been classified in wrong industries. Thus, this involves a problem that is traced back to the pre-qualification stage. In other words, industrial classification of establishments in the Master List of Establishments and the MISSI must be reviewed and checked for its accuracy.

The establishments classified in reason 5) include those which have not provided sufficient information in the qualification stage and were therefore classified in status 4 on a tentative basis. As industrial surveys such as the CSP must expect varying levels of willingness (cooperation) to disclose business information among establishments to be surveyed, it is reasonable to assume a certain percentage of establishments to be classified in status 4 for reason 5), no matter how hard enumerators try. As the establishments classified in reason 5) accounted for around 20% of total for the preset survey, some effective measures to reduce the percentage will be required towards the CSP.

Establishments classified in reason 6) --- the original definition of status 4 --- totaled 14, only 11%. And there was no establishment classified in reason 3) "difficult to be classified in a specific sector."

Finally, reason 4) (accounting for 10% of total) means that these establishments were disqualified due to the misjudgment by some enumerators in the qualification stage. Enumerators should be reminded of careful work because their error directly produces a statistical error.

2.3 Collection of Questionnaire

(1) Collection rate

The collection rates of questionnaire for the pretest survey by sector and month are shown in Table 2-6. As mentioned in **2.2** (2) above, the collection rates are calculated using the total number of establishments classified in status 1 in the qualification process, namely 372, as the denominator.

Table 2-6 Collection Rates of Questionnaire by Sector and Month

Questionnaire Number	Sector Name	Number of Collection				Collection Rate (%)				Ref: Number of Qualified Establishment as "Status-1"
		JAN	FEB	MAR	TOTAL	JAN	FEB	MAR	AVG.	
151-10	Meat, fish, fruit etc.	42	39	36	117	79	74	68	74	53
155-10	Beverages	9	6	5	20	100	75	63	79	8
160-10	Tobacco	5	3	3	11	100	60	60	73	5
181-10/20	Garments	101	95	91	287	86	81	78	82	117
232-10	Refined petroleum	4	4	4	12	67	67	67	67	6
242-10	Chemical products	27	25	22	74	79	74	65	73	34
262-10	Cements	4	4	3	11	67	67	50	61	6
271-10	Iron and steel	19	18	15	52	76	72	60	69	25
321-10	Electric valves, TV transmitters	5	4	4	13	56	44	44	48	9
322-10	Semi-conductors	16	15	13	44	84	79	68	77	19
324-10	TV&radio receivers, etc.	7	7	5	19	88	88	63	79	8
341-10	Motor vehicles	11	10	10	31	85	77	77	79	13
343-10	Parts for automobiles	11	9	9	29	65	53	53	57	17
	1st 13 SECTORS	261	239	220	720	82	75	69	75	320
152-10	Dairy products	2	1	1	4	67	33	33	44	3
210-10	Pulp, paper and paperboard	7	7	6	20	100	100	86	95	7
241-10	Basic chemicals	1	1	1	3	13	13	13	13	8
252-10	Plastic	7	7	6	20	78	78	67	74	9
289-10	Structural metal products	5	5	5	15	71	71	71	71	7
293-10	Domestic electric appliances	0	0	0	0	0	0	0	0	1
300-10	Office&computing machinery	3	3	3	9	60	60	60	60	5
314-10	Cell, Lighting equipment, etc.	3	3	3	9	43	43	43	43	7
359-10	Motorcycles & bicycles	1	1	1	3	20	20	20	20	5
	2nd 9 SECTORS	29	28	26	83	56	54	50	53	52
	22 SECTORS	290	267	246	803	78	72	66	72	372

Note: Basis of the collection rate is the number of "Status 1".

The final average collection rate for the pretest survey period (three months) based on all the sectors, was 72%. (Note that the "final collection rate" means the collection rate as of the end of May 2001, which was set as the deadline for collection of the pretest questionnaires.) This is a fairly high rate of collection for a non-governmental survey conducted in the Philippines by a foreign organization. On a monthly basis, the collection rate was 78% in January, 72% in February and 66% in March. The gradual decline in collection rate does not mean the decline in interest or willingness to cooperation on the respondent side, but simply reflects the fact that enumerators were able to have longer time to collect the questionnaires on an earlier month due to more days available up to the end of May as the collection deadline.

All the sectors showed generally high collection rates, except for the questionnaire "293-10: Manufacture of domestic electric appliances" for which only one sample establishment was qualified and there was no response. For the three-month average, more than 70% of collection rate was reported by 8 out of 13 sectors in the First Group and 3 out of 9 in the Second Group. Thus, half of all the target sectors achieved the 70% or more collection rate.

Comparing the first and Second Groups on the three-month average, the former was significantly higher than the latter, 75% vs. 53% respectively. As the sample establishments in the Second Group were all selected from MISSI samples, the relatively low rate for the Second Group may require attention to find out its cause. A possible explanation on this is that many of MISSI samples may find it burdensome to fill out the pretest questionnaire in addition to the MISSSI questionnaire every month.

(2) Promptness of questionnaire collection
As the CSP is designed to grasp the short-term industrial trend, collection of questionnaire should be made within a sufficiently short period of time, while reaching a specific target collection rate. For the pretest survey, enumerators were required to submit the questionnaires to the headquarters of the JICA study team at the NSO by the fifteenth day of the month following a reference month, after the preliminary field verification by themselves. The target collection rate as of above-mentioned submission date based on the number of questionnaires received by the headquarters was set at 50%.

- Collection of questionnaires by enumerators
   → By the 10th day of the month following each reference month
- Preliminary field verification of collected questionnaires by enumerators
   → By the 15th day of the month following each reference month
- Submission of collected questionnaires to the headquarters of the JICA Study Team at the NSO in NCR (= Completion of questionnaire collection)
   → By the 15th day of the month following each reference month

During the pretest survey, however, the actual collection of questionnaire was not so prompt as expected. As shown in Figure 2-2, the average collection rate based on all the sectors in each of the three reference months was very close to zero on the 15th day of the next month. The target collection rate of 50% was achieved on the 50th day or later after the reference month, i.e., the latter half of the month after the next.
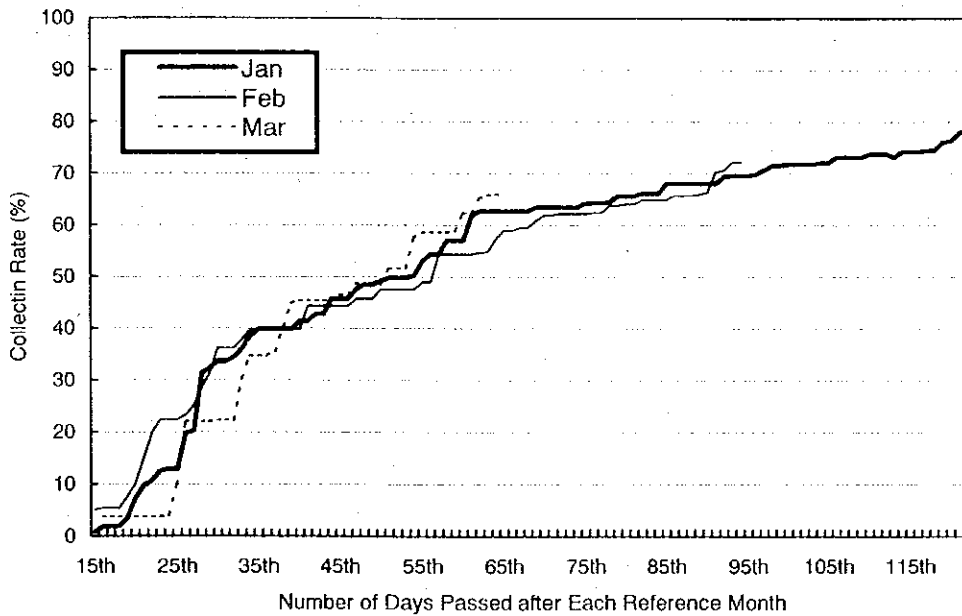
Figure 2-2   Daily Change in Collection Rate

Table 2-7 shows changes in collection rates on the 30th, 45th and 60th days after each reference month, by sector and month.

Table 2-7   Changes in Collection Rates by Sector and Month

[Unit: %]

Sector	Ref. month	As of 30th day after each reference month	As of 45th day after each reference month	As of 60th day after each reference month	Final Rate (as of end of May)
151-10: Meat, fish, etc	JAN	31	46	56	79
	FEB	42	52	62	74
	MAR	40	60	68	68
	Average	**38**	**53**	**62**	**74**
152-10: Dairy products	JAN	0	33	33	67
	FEB	33	33	33	33
	MAR	0	0	0	33
	Average	**11**	**22**	**22**	**44**
155-10: Beverages	JAN	22	44	44	100
	FEB	13	25	50	75
	MAR	0	50	63	63
	Average	**12**	**40**	**52**	**79**
160-10: Tobacco	JAN	40	40	100	100
	FEB	40	40	40	60
	MAR	20	60	60	60
	Average	**33**	**47**	**67**	**73**
181-10/20: Garments	JAN	50	61	69	86
	FEB	45	50	66	81
	MAR	24	52	73	78
	Average	**40**	**54**	**69**	**82**
210-10: Paper products	JAN	38	63	63	100
	FEB	29	71	86	100
	MAR	14	57	71	86
	Average	**27**	**64**	**73**	**95**
232-10: Refined petroleum	JAN	0	0	33	67
	FEB	17	50	67	67
	MAR	50	50	67	67
	Average	**22**	**33**	**56**	**67**
241-10: Basic chemicals	JAN	13	13	13	13
	FEB	13	13	13	13
	MAR	13	13	13	13
	Average	**13**	**13**	**13**	**13**
242-10: Other chemicals	JAN	33	42	56	79
	FEB	31	42	47	74
	MAR	18	41	62	65
	Average	**27**	**42**	**55**	**73**
252-10: Plastic products	JAN	25	38	50	78
	FEB	25	38	50	78
	MAR	22	33	44	67
	Average	**24**	**36**	**48**	**74**
262-10: Cements	JAN	50	50	50	67
	FEB	33	33	50	67
	MAR	17	33	50	50
	Average	**33**	**39**	**50**	**61**
271-10: Iron & Steel	JAN	32	40	52	76
	FEB	32	48	60	72
	MAR	32	48	60	60
	Average	**32**	**45**	**57**	**69**

Table 2-7 Changes in Collection Rates by Sector and Month (continued)

[Unit: %]

Sector	Ref. month	As of 30th day after each reference month	As of 45th day after each reference month	As of 60th day after each reference month	Final Rate (as of end of May)
289-10: Metal products	JAN	14	43	57	71
	FEB	29	29	29	71
	MAR	14	43	71	71
	Average	19	38	52	71
293-10: Electric Appliances	JAN	0	0	0	0
	FEB	0	0	0	0
	MAR	0	0	0	0
	Average	0	0	0	0
300-10: Office Machinery	JAN	0	40	40	60
	FEB	20	20	20	60
	MAR	0	20	60	60
	Average	7	27	40	60
314-10: Lighting Equipment	JAN	29	29	43	43
	FEB	43	43	43	43
	MAR	14	14	43	43
	Average	29	29	43	43
321-10:Electronic valves, etc	JAN	33	33	33	56
	FEB	11	11	22	44
	MAR	22	33	44	44
	Average	22	26	33	48
322-10: Semi-conductors	JAN	16	32	68	84
	FEB	42	53	58	79
	MAR	16	58	58	68
	Average	25	47	61	77
324-10: TV & radio	JAN	25	63	63	88
	FEB	50	63	63	88
	MAR	13	25	50	63
	Average	29	50	58	79
341-10: Motor vehicles	JAN	31	31	69	85
	FEB	38	54	54	77
	MAR	15	46	77	77
	Average	28	44	67	79
343-10: Vehicle parts	JAN	13	38	38	65
	FEB	31	31	31	53
	MAR	6	35	53	53
	Average	17	35	41	57
359-10: Motorcycles	JAN	20	20	20	20
	FEB	0	0	0	20
	MAR	0	20	20	20
	Average	7	13	13	20
AVERAGE of 22 SECTORS	JAN	34	46	57	78
	FEB	36	44	54	72
	MAR	22	47	62	66
	Average	31	46	58	72

Clearly, collection needs to be made more promptly and additional efforts are required to achieve the target collection rate as planned. From Figure 7-2, a certain (not very distinctive) pattern can be read. The collection rate grows at a faster pace between the 20th and 40th days after each reference month, which slows down thereafter. This may suggest that many establishments are ready to fill out the questionnaire around the 20th day after a reference month as they can obtain sufficient information on their production activities. Assuming that this is the case, the collection rate can be raised efficiently by making intensive efforts to collect questionnaires during the period from the 20th day to the 40th day after each reference month. (Needless to say, enumerators are required to remind establishments of filling out the questionnaire in advance, prior to the 20th day.)

Table 2-8 compares the promptness of questionnaire collection and the level of final collection rate by sector. It can be read from the table that the sectors that achieve a relatively high collection rate at an early point of time record a relatively high final collection rate. This tendency confirms the need for concentrated efforts to raise the collection rate as high as possible between the 20th and 40th days after each reference month. After the period, less and less establishments seem to feel obliged to submit the questionnaire, as evidenced by a clear drop in collection rate after around the 40th day.

Table 2-8 Promptness of Questionnaire Collection and Level of Final Collection Rate

Sector	Did the collection rate exceed 50% before:			Is the final collection rate more than:			
	60th day?	45th day?	30th day?	50%?	60%?	70%?	80%?
151-10: Meat, fish, etc	▒	▒		▒	▒	▒	
152-10: Dairy products							
155-10: Beverages	▒			▒	▒	▒	
160-10: Tobacco	▒			▒	▒	▒	
181-10/20: Garments	▒	▒		▒	▒	▒	▒
210-10: Paper products	▒	▒		▒		▒	▒
232-10: Refined petroleum	▒			▒	▒		
241-10: Basic chemicals							
242-10: Other chemicals	▒			▒	▒	▒	
252-10: Plastic products				▒	▒	▒	
262-10: Cements	▒			▒	▒		
271-10: Iron & Steel	▒			▒	▒		
289-10: Metal products	▒			▒	▒	▒	
293-10: Electric Appliances							
300-10: Office Machinery				▒	▒		
314-10: Lighting Equipment							
321-10:Electronic valves, etc							
322-10: Semi-conductors	▒			▒	▒	▒	
324-10: TV & radio	▒	▒		▒	▒	▒	
341-10: Motor vehicles	▒	▒		▒	▒	▒	
343-10: Vehicle parts				▒			
359-10: Motorcycles							
AVERAGE of 22 SECTORS	▒			▒	▒	▒	

Based on the average collection rate through Jan - Mar 2001.

Another area of concern is the collection process that is divided into two stages with some time lag in between. First of all, enumerators collect questionnaires from sample establishments and then submit them to the headquarters at the NSO, after they perform the preliminary field verification on data entries in each questionnaire. The preliminary field verification includes inquiries to respondents when incorrect entries are found. This task takes some time and constitutes a lag that may significantly increase the time required before submission of questionnaires to the headquarters. Thus, even if questionnaires are promptly collected from establishments, the

headquarters will receive them much later if the field verification by enumerators takes lots of time.

Table 2-9 shows the average number of days required by enumerators to collect the January questionnaire that was distributed at the end of January 2001 and the average number of days required between questionnaire collection from establishments and submission to the headquarters. The former is 39 days on the basis of all the target sectors, with relatively large variation among sectors, and the latter is 10 days for all the sectors in the three months. This means that around 50 days on average are required from distribution of questionnaire to submission to the headquarters. Clearly, this period exceeds the above-mentioned target collection period (20th-40th days after each reference month). Accordingly, efforts should be made to reduce the period required for collection by enumerators to 20-30 days and that for the preliminary field verification to 5-10 days.

Table 2-9   Number of Days Required for Questionnaire Collection

Questionnaire Number	Sector Name	Average Number of Days Required						Ref.: Number of Collection		
		From JANUARY 31st to Collection of JANUARY Questionnaire	From Collection to Reception					JAN	FEB	MAR
			JAN	FEB	MAR	AGV.				
151-10	Meat, fish, fruit etc.	35	9	11	13	11		42	39	36
155-10	Beverages	55	8	20	14	14		9	6	5
160-10	Tobacco	25	19	17	8	14		5	3	3
181-10/20	Garments	35	9	10	8	9		101	95	91
232-10	Refined petroleum	55	22	7	8	12		4	4	4
242-10	Chemical products	40	7	7	7	7		27	25	22
262-10	Cements	30	6	7	7	6		4	4	3
271-10	Iron and steel	42	9	7	8	8		19	18	15
321-10	Electric valves, TV transmitters	33	7	4	15	8		5	4	4
322-10	Semi-conductors	45	9	7	6	7		16	15	13
324-10	TV&radio receivers, etc.	38	10	4	3	6		7	7	5
341-10	Motor vehicles	40	13	11	14	13		11	10	10
343-10	Parts for automobiles	43	19	9	16	15		11	9	9
	1st 13 SECTORS	40	11	9	10	10		261	239	220
152-10	Dairy products	41	11	15	58	28		2	1	1
210-10	Pulp, paper and paperboard	42	8	14	14	12		7	7	6
241-10	Basic chemicals	22	5	3	5	4		1	1	1
252-10	Plastic	57	5	5	5	5		7	7	6
289-10	Structural metal products	45	11	6	7	8		5	5	5
293-10	Domestic electric appliances	-	-	-	-	-		0	0	0
300-10	Office&computing machinery	53	11	8	7	9		3	3	3
314-10	Cell, Lighting equipment, etc.	23	11	7	12	10		3	3	3
359-10	Motorcycles & bicycles	22	5	1	1	2		1	1	1
	2nd 9 SECTORS	38	8	7	14	10		29	28	26
	22 SECTORS	39	10	8	12	10		290	267	246

Note: Pretest questionnaires for January, February and March were distributed to sample establishments at the end of January 2001.
"Collection" means the day when a questionnaire is collected by an enumerator from a sample establishment.
"Reception" means the day when a questionnaire is received at the Pretest Headquarters Office at the NSO.

As discussed earlier, prompt collection of questionnaires is a critical factor for the successful establishment of the monthly work cycle for the CSP in the Philippines. To ensure promptness of the collection process, additional investigation should be made to check if most establishments could obtain information required to fill out the questionnaire after the lapse of 20 or more days after each reference month, including interview surveys of selected sample establishments.

(3) Consecutive respondents

To ensure CSP's statistical reliability as the monthly industrial survey, it is imperative to collect information from the same sample establishments continuously as well as to maintain a high rate of questionnaire collection every month.

Table 2-10 shows the percentage share of "consecutive respondents", by sector, which responded to the questionnaire for three reference months of the pretest survey. The average consecutive response ratio based on all the sectors reached 66%.

It should be noted, however, that some establishments submitted the questionnaires on the three reference months at a time in April or May. Technically they are not considered as consecutive respondents but are included in the above 66% figure, though their percentage is very small.

Table 2-10   Establishment That Responded to Three Reference Months

Questionnaire Number	Sector Name	Number of Consecutive Respondents	Number of Qualified Establishments as "Status-1"	Consecutive Response Ratio (%)
151-10	Meat, fish, fruit etc.	36	53	68
155-10	Beverages	5	8	63
160-10	Tobacco	3	5	60
181-10/20	Garments	89	117	76
232-10	Refined petroleum	4	6	67
242-10	Chemical products	22	34	65
262-10	Cements	3	6	50
271-10	Iron and steel	15	25	60
321-10	Electric valves, TV transmitters	4	9	44
322-10	Semi-conductors	13	19	68
324-10	TV&radio receivers, etc.	5	8	63
341-10	Motor vehicles	10	13	77
343-10	Parts for automobiles	9	17	53
	1st 13 SECTORS	218	320	68
152-10	Dairy products	1	3	33
210-10	Pulp, paper and paperboard	6	7	86
241-10	Basic chemicals	1	8	13
252-10	Plastic	6	9	67
289-10	Structural metal products	5	7	71
293-10	Domestic electric appliances	0	1	0
300-10	Office&computing machinery	3	5	60
314-10	Cell, Lighting equipment, etc.	3	7	43
359-10	Motorcycles & bicycles	1	5	20
	2nd 9 SECTORS	26	52	50
	22 SECTORS	244	372	66

Note: Consecutive respondent means an establishment which responded to the questionnaire for three reference months of the pretest survey.
Consecutive Response Ratio is the ratio of the number of consecutive respondents to the number of status-1 establishments.

(4) Number of reminder to expedite response

Table 2-11 summarizes the number of reminder made by enumerators to expedite response from each sample establishment during the pretest survey period, by sector and month. It varied greatly with sectors, but the maximum number of reminder ranged between 15 and 25, with the average number being around 5. For all the sectors, both the maximum and average number of reminder declined month by month. This is probably because the respondents became aware of importance of the pretest survey itself and acquainted with the manner to fill out the questionnaire form.

As mentioned earlier, some establishments were not willing to cooperate with the industrial surveys like CSP for various reasons. It depends much on efforts by enumerators who have to contact such establishments repeatedly and explain the survey's intent and purpose patiently in an attempt to persuade them to participate. In fact, the 72% collection rate for the pretest survey, much higher than expected, indicates that the enumerators successfully made efforts to obtain cooperation of such establishments.

Table 2-11   Number of Reminder to Expedite Response

Questionnaire Number	Sector Name	Number of Reminder to Collect One Questionnaire						Ref.: Number of Collection		
		Maximum Number			Average Number					
		JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR
151-10	Meat, fish, fruit etc.	16	13	11	4.7	4.4	6.2	42	39	36
155-10	Beverages	15	10	4	6.4	5.2	3.5	9	6	5
160-10	Tobacco	5	8	5	3.2	4.3	3.5	5	3	3
181-10/20	Garments	25	18	15	4.6	5.7	4.5	101	95	91
232-10	Refined petroleum	12	5	12	6.0	4.0	5.8	4	4	4
242-10	Chemical products	20	15	9	6.9	6.1	3.4	27	25	22
262-10	Cements	4	6	10	3.3	4.0	6.7	4	4	3
271-10	Iron and steel	16	8	6	5.5	4.5	4.2	19	18	15
321-10	Electric valves, TV transmitters	15	10	4	4.8	6.3	3.0	5	4	4
322-10	Semi-conductors	15	15	15	7.7	5.8	4.7	16	15	13
324-10	TV&radio receivers, etc.	14	5	8	4.6	4.0	6.0	7	7	5
341-10	Motor vehicles	25	20	10	5.5	6.0	3.3	11	10	10
343-10	Parts for automobiles	12	10	5	4.2	4.5	3.0	11	9	9
	1st 13 SECTORS	25	20	15	5.2	5.0	4.4	261	239	220
152-10	Dairy products	15	10	10	12.5	10.0	10.0	2	1	1
210-10	Pulp, paper and paperboard	12	10	8	5.7	6.1	5.8	7	7	6
241-10	Basic chemicals	3	2	1	3.0	2.0	1.0	1	1	1
252-10	Plastic	12	10	5	7.3	5.1	4.7	7	7	6
289-10	Structural metal products	10	10	7	5.6	4.8	4.0	5	5	5
293-10	Domestic electric appliances	-	-	-	-	-	-	0	0	0
300-10	Office&computing machinery	12	7	7	5.7	3.7	4.3	3	3	3
314-10	Cell, Lighting equipment, etc.	7	5	4	3.7	3.3	3.3	3	3	3
359-10	Motorcycles & bicycles	2	8	3	2.0	8.0	3.0	1	1	1
	2nd 9 SECTORS	15	10	10	5.7	5.4	4.5	29	28	26
	22 SECTORS	25	20	15	5.4	5.2	4.5	290	267	246

2.4 Opinions of Enumerators for Pretest Survey

Between late February and early March 2001, the JICA study team visited four (4) NSO's local offices with members of NSO's counterpart team and staff of the PSA-ASSIST to which execution of the pretest was commissioned, in order to interview the enumerators who conducted the field operation of the pretest survey. (Note: The PSA-ASSIST executed the pretest in cooperation of the NSO, which maintained local offices in NCR and CALABARZON.) The local offices visited and the dates of visit are as follows:

- Parañaque District Office   February 23, 2001
- Cavite Provincial Office   March 1, 2001
- Rizal Provincial Office   March 2, 2001
- Laguna Provincial Office   March 6, 2001

Opinions of the enumerators at the four local offices on the execution of the pretest survey can be roughly classified into the following six categories as follows (their opinions are summarized in each box, followed by the JICA study team's comment):

(1) Prompt collection of questionnaire

> - The enumerator is required to perform the preliminary field verification on each questionnaire collected from the sample establishment. As the verification takes considerable time including follow-up inquiries to the establishments, it is difficult to satisfy two objectives of accuracy and promptness.
> - To fill out the questionnaire form of the pretest survey completely, the establishment needs to have more accurate and detailed data than those required by the MISSI. Together with various definitions on survey items that are often confusing to understand, it is difficult to expect that the form can be collected earlier than that for the MISSI. Frankly, it is very difficult to achieve the target collection rate of 50% on the 15th day after each reference month.

<Comment by the JICA study team>

At Laguna Provincial Office, there was a complaint that most sample establishments were located remote from the NSO office, with poor transport access, and it was difficult for enumerators to visit them frequently. To encourage prompt

collection, the JICA study team accepted collection by e-mail or facsimile on a tentative basis. As a result, few responses were made by e-mail, but there was a greater number of response by facsimile contributing to reducing the time required for questionnaire submission to the headquarters.

Despite these efforts, however, the collection rate on the 15th day of the month following each reference month remained near zero, and effective measures should be devised in consideration of actual field conditions.

As discussed in **2.3** (2), it seems that enumerators may be able to obtain the best results if they concentrate efforts between the 20th and 40th days after the reference month. In this case, the target collection rates should be moved up, say over 50% on the 30th day (at the end of the month following the reference month) and over 70% on the 40th day.

(2) Industrial classification of sample establishments

- When visiting the sample establishments to distribute the questionnaires given by the PSA-ASSIST, some of them were found being misclassified. For instance, an establishment was classified in "271-10: Manufacture of iron and steel" according to the questionnaire, but actually it largely produced microwave ovens, toasters, and gas stoves. Obviously, it could not be classified in the ironworks.

<Comment by the JICA study team>

This seems to be a question of incorrect industrial classification on an establishment in the Master List of Establishments that was used to obtain the pretest samples, rather than the problem of the sampling method used for the pretest survey.

Under the current circumstances, it is probably inevitable in the qualification stage to find some establishments that are incorrectly classified. The important thing is, in addition to distribution of suitable questionnaire forms to these establishments, to correct the CSP's list of sample establishments and NSO's Master List accordingly. These lists should be updated concurrently to maintain their consistency.

(3) Classification and name of commodities listed in the questionnaire

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- Commodities specified in the questionnaire do not always agree with the actual condition, since some establishments do not produce the commodities in the questionnaire.

- The name of a commodity listed in the questionnaire does not follow the changes in the manufacturing industry. For instance, the questionnaire "324-10: Manufacture of television and radio receivers, sound or video recording apparatus, and associated goods" lists product names with a single function, such as "radio", "cassette player" and "CD player". However, some establishments make hybrid products such as a radio/cassette player and a car stereo combined with radio and CD player, and they are confused as to which columns they should enter production volumes.

- The questionnaire "300-10: Manufacture of office, accounting and computing machinery" includes "external hard drives". It is hard to image that floppy disk drives should be included here. Also, it is confusing as to whether or not the built-in (embedded) disk drives should be classified in this category.

- For the sector "181: Manufacture of garments", two questionnaire forms are prepared; "-10: for women, girls and infants" and "-20: for men and boys." Using the two forms makes confuses in respondents who are not sure which form they should enter data on such unisex clothing as T-shirt.

- Unit of measurement for some commodities seems to be inappropriate or unsuitable for survey purposes. For instance, the questionnaire "242-10: Manufacture of other chemical products" uses "ton" as the unit of measurement for "drugs and medicines". But, clearly it is not practical as the industry usually uses SPU (standard packaging unit).

<Comment by the JICA study team>

There can be a case that a sample establishments does not produce commodities listed in the questionnaire, if it only makes minor products in a manufacturing sector of the Philippines. In this case, this establishment should be disqualified prior to the survey and is excluded from the collection process. It should be noted that the qualification process is implemented in order to accomplish such exclusion.

On the other hand, the comments on industrial classification and name seem to be appropriate and should be addressed by making necessary corrections prior to the inauguration of the CSP.

(4) Form of questionnaire for the pretest survey

- The pretest questionnaire form consists of two sheets in duplicate and the respondent fills out the form by putting a carbon paper between the two sheets. One sheet is retained by the respondent and the other is collected by the enumerator. Once the enumerator submits the collected sheet to the PSA-ASSIST, he/she cannot often keep a copy for its own use because many local offices do not have a copy machine, and therefore he/she cannot refer to the original form when the PSA-ASSIST makes an inquiry about it, e.g., confirmation of data entry. It is desirable to distribute additional blank forms to the enumerators so that they can transcribe data entries on the original forms.
- The pretest questionnaire form does not require the sample establishment to report its name as well as the name of respondent and his/her signature. It might be necessary for the survey form of the future CSP to include such information, as many establishments may wish to avoid penalty for noncompliance by using the filled-out form as the evidence.

<Comment by the JICA study team>

Certainly the enumerators should keep original forms of questionnaire for reference purpose and so an appropriate solution has to be created. For example, use of the triplicate form may be convenient for the enumerators but cumbersome for the respondents who have to use two carbon papers and fill out the form with care. A considerable and reasonable solution at the moment may be to distribute blank forms to the enumerators to hand-copy the original forms.

Modification of the questionnaire form, including the entry of the name of establishment/respondent, should be discussed from practical points of view.

(5) Organization for the execution of field operation

- At present, the enumerators at local offices have to concurrently handle many surveys such as MISSI, industrial census, QSPBI, trade statistics, and the pretest. Therefore, they must receive various kinds of trainings for different surveys.
- As the CSP starts, enumerators are reportedly required to acquire advanced knowledge and follow complicated work procedures. Clearly, this is not a simple task that can be handled by enumerators who are also responsible for other surveys. A sufficient number of full-time enumerators should be dedicated to the CSP, according to the number of questionnaire distributed.
- To assign full-time enumerators who are dedicated to the CSP, budgetary allocation will be required.

<Comment by the JICA study team>

The organization and budget for the CSP should be considered for NSO's entire organization, including the central and local offices.

(6) Other issues related to field operation

- Some establishments wanted to submit the filled-out forms for two or three reference months at a time. It was difficult to respond, especially if they are large-scale establishments that have significant impacts on the survey results.
- When a collected questionnaire contains no data in "production volume" column and only entry in "purchased/received volume," it is difficult to tell whether or not it is an inappropriate entry.

<Comment by the JICA study team>

To eliminate or minimize undue variation of the monthly industrial statistics, it is essentially important that sample establishments report the data every month. Even if an establishment is unable to make monthly report due to its accounting cycle or for other special reasons, for instance, the enumerator should request the data based on estimates, which can later be replaced with actual data to reflect in the revised statistics.

An establishment that reports "purchased/received" column only, keeping the "production" column blank, may be a factory which commits entire production to sub-contractors and receives delivery of finished products. Enumerators should check if this is the case, and if so, ask the establishment to specify so in "Remarks" column and enter "- (hyphen)" in "Production" column. There must be some other ambiguities and questions related to field operation, and they should be clarified case by case and reflected in the questionnaire entry manual for respondents.

2.5 Analysis on Data Entries to Pretest Questionnaire

2.5.1 Major Entry Errors

One of the major objectives of the pretest survey was to evaluate how accurately respondents understand the intent of each question item contained in the questionnaire form by measuring the degree of correctness of each response.

Among all the survey items, the "finished products" section requires special attention in analyzing the level of understanding of respondents because it contains a large number of question items to which a variety of data should be provided (Table 2-12). In comparison, the "raw material" and "production capacity" sections contain a single item for each: "inventory at the end of the month" and "monthly production capacity". The more questions the respondent has to answer, the more likely he/she makes an entry error, because he/she may feel difficulty in understanding a definition given in an item or interrelations between different survey items. For this reason, entry errors observed in the "finished products" section are analyzed here in an attempt to find a common cause or pattern.

Table 7-12   Question Items in "Finished Products" Section
of the Pretest Questionnaire

(A) Production in volume	
(B) Purchased/received in volume	
(X) Internal consumption in volume	
(C) Domestic sales in volume	
(D) Export in volume	(C), (D) and (E) = Shipment
(E) Others in volume	
(F) Inventory at the end of month in volume	
(G) Production in value (1,000 pesos)	

Note: Item (X) is asked in the questionnaires for selected sectors.

(1) Classification of entry errors

Entry errors in the pretest survey form are roughly classified into two types. The first type is characterized by the lack of response to a question item that should inevitably be responded by all establishments that are engaged in production activity. The second type is the entry of data that are significantly deviated from the previous month data or the overall average figures. Hereinafter, the former is referred to as "missing of indispensable items" and the latter "entering of abnormal figures".

First of all, errors classified as the "missing of indispensable items" are categorized as shown in Figure 2-3. In other words, establishments qualified as the pretest samples (i.e., those that produce commodities listed in the respective questionnaire) are expected to meet the following requirements in their entry on individual:

1) Entry should be made in at least item (A) or (B).
2) Entry should be made in at least any of items (X), (C), (D) or (E).
3) Entry should always be made in item (F).   (Including "zero" entry)
4) If entry should made in item (A), entry is made in item (G).

Any questionnaire form that has been filled out by a respondent but fails to meet any of the above requirements should be considered to contain an entry error. By determining frequency of entry errors in each question item, a preliminary indication on how well the respondent understood the meaning of each item in the "finished products" section can be obtained.

At the same time, attention should be drawn to the fact that the "missing of indispensable items" is somewhat affected by the willingness of the respondent to disclose business information. For instance, a sample establishment may have an internal policy not to disclose the value of production and it then intentionally fails to meet the requirement in 4) above. In effect, the establishment rejects to give information. This should be distinguished from the entry error that is the subject of analysis here.

Figure 2-3 Check Points for "Missing of Indispensable Items"

Finished Products			VOLUME							VALUE
Code	Commodity Name	Unit	Production	Purchased/ Received	Internal Consumption	Shipment			Inventory at the end of month	Production (1000 pesos)
						Domestic Sales	Export	Others		
			(A)	(B)	(X)	(C)	(D)	(E)	(F)	(G)

Regarding a commodity which is produced by a qualified establishment ---

←——————————→
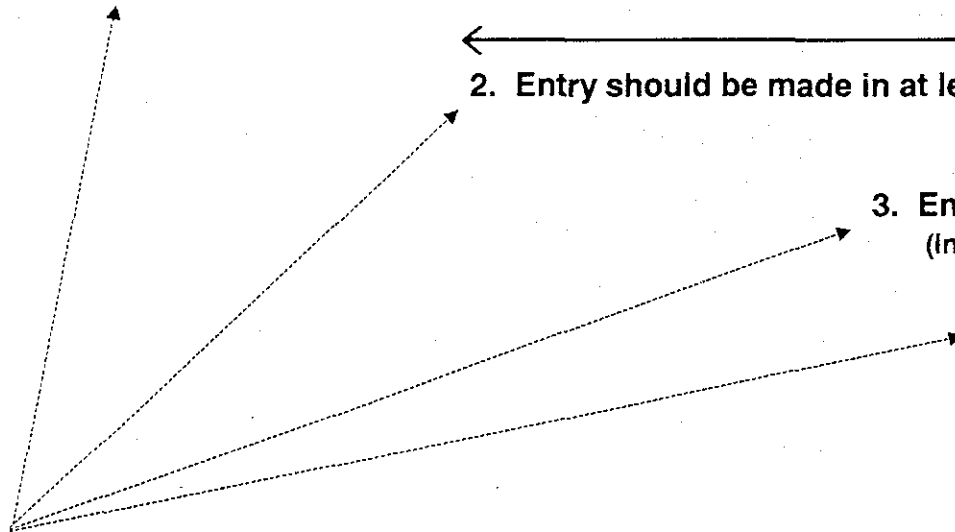1. **Data entry should be made in at least item (A) or (B).**
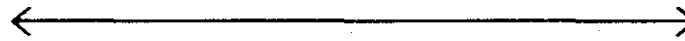
←————————————————→
2. **Entry should be made in at least any of item (X), (C), (D) or (E).**

←———→
3. **Entry should always be made in item (F)**
(Including "zero" entry.)

←———→
4. **Entry should be made in item (G) if entry is made in item (A).**
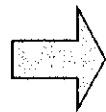
By calculating the filling status in above 1-4, how much the respondents understood the definition of each question item can be examined.

Secondly, the "entering of abnormal figures" takes either of the following identifiable patterns.

1) Data entered for an item is significantly deviated from that reported in the previous month.

2) Substituting the actual figures reported by the respondent for the following formula (volume basis) results in a significant difference between the two sides.

   Product inventory at the end of the current month

   = Inventory at the end of the previous term

   + Production volume in the current month

   + Purchased/received volume in the current month

   − (Internal consumption in the current month + Domestic sales in the current month + Export in the current month + Other shipment in the current month)

3) Comparing the commodity unit prices obtained by dividing "production in value" by "production in volume" as reported by different establishments reveals that the unit price for an establishment is significantly deviated from the overall average.

By determining frequency distribution of these three error types, a preliminary indication on how well the respondent understood data consistency for the same question item between different points of time (months) and data consistency between different items at the same point of time can be obtained.

For error type 1), however, a large difference in production volume (say a 50% decrease over the previous month) does not warrant an entry error because such difference can happen due to a seasonal variation or other extraordinary factor. Therefore, careful evaluation should be made to determine whether a difference constitutes a significant deviation by taking into account factors related to local conditions peculiar to the Philippines or characteristics of a commodity. Also, final confirmation with the respondent should be made to check if an entry error has actually occurred.

(2) Analysis of entry errors

Table 2-13 shows frequency of entry errors classified as the "missing of indispensable items" by sector, as observed during the pretest survey period.

Table 2-13　Frequency of "Missing of Indispensable Items"

[Unit: %]

Questionnaire Number	Sector Name	Missing of Indispensable Items			
		1) (A), (B)	2) (X), (C), (D), (E)	3) (F)	4) (G)
151-10	Meat, fish, fruit etc.	1	0	7	3
155-10	Beverages	0	0	4	0
160-10	Tobacco	0	0	0	0
181-10/20	Garments	1	0	6	3
232-10	Refined petroleum	19	0	16	16
242-10	Chemical products	9	0	9	12
262-10	Cements	0	0	0	0
271-10	Iron and steel	9	0	16	10
321-10	Electric valves, TV transmitters	7	0	0	19
322-10	Semi-conductors	6	0	12	2
324-10	TV&radio receivers, etc.	25	0	2	22
341-10	Motor vehicles	8	0	8	9
343-10	Parts for automobiles	0	0	0	0
	1st 13 SECTORS	7	0	6	7
152-10	Dairy products	0	0	0	22
210-10	Pulp, paper and paperboard	0	0	0	0
241-10	Basic chemicals	0	0	0	0
252-10	Plastic	0	0	8	8
289-10	Structural metal products	0	0	0	0
293-10	Domestic electric appliances	---	---	---	---
300-10	Office&computing machinery	0	0	0	0
314-10	Cell, Lighting equipment, etc.	0	0	0	0
359-10	Motorcycles & bicycles	0	0	0	0
	2nd 9 SECTORS	0	0	1	4
	22 SECTORS	4	0	4	6

Notes: 1) There was no data entry in item (A) and (B).

2) There was no data entry in item (X), (C), (D) and (E).

3) There was no data entry in item (F).

4) There was no data entry in item (G) while there was an entry in (A).

From this table, it is revealed that entry errors classified as the "missing of indispensable items" are relatively small in number, though there are some variations among sectors. On the overall average for all the sectors (excepting the sector "293-10" for which no response was made), the error type 4) (entry was made in "production in volume" but no entry in "production in value") occurred most frequently, yet the percentage was only 6%. No entry in all of "internal consumption", "domestic sales", "export" and "other shipment" was observed. This indicates that most respondents have understood the intent of each question.

Then, Table 2-14 shows frequency of entry errors classified as the "entering of abnormal figures" by sector, as observed during the pretest survey period.

Table 2-14 Frequency of "Entering of Abnormal Figures"

[Unit: %]

Questionnaire Number	Sector Name	Entering of Abnormal Figures		
		1) Prevelous Month	2) Balance Formula	3) Unit Price
151-10	Meat, fish, fruit etc.	6	9	16
155-10	Beverages	0	15	8
160-10	Tobacco	22	56	58
181-10/20	Garments	6	8	13
232-10	Refined petroleum	6	28	5
242-10	Chemical products	6	18	16
262-10	Cements	33	10	24
271-10	Iron and steel	5	5	14
321-10	Electric valves, TV transmitters	8	39	26
322-10	Semi-conductors	3	14	14
324-10	TV&radio receivers, etc.	5	8	5
341-10	Motor vehicles	32	19	23
343-10	Parts for automobiles	1	2	8
	1st 13 SECTORS	10	18	18
152-10	Dairy products	0	0	0
210-10	Pulp, paper and paperboard	8	19	19
241-10	Basic chemicals	0	67	0
252-10	Plastic	4	17	13
289-10	Structural metal products	0	29	13
293-10	Domestic electric appliances	---	---	---
300-10	Office&computing machinery	22	11	22
314-10	Cell, Lighting equipment, etc.	22	11	33
359-10	Motorcycles & bicycles	0	34	0
	2nd 9 SECTORS	7	24	13
	22 SECTORS	9	20	16

Notes: 1) A reported figure on a finished product is deviated by +/- 50% from that of the previous month.

2) Reported figures for each survey items are inconsistent with each other according to the balance formula. (Reported month-end inventory volume is deviated from the estimated figure derived by the balance formula by +/- 50%.)

3) Abnormal unit prices.

Overall, entry errors classified as the "entering of abnormal figures" were observed more frequently than those classified as the "missing of indispensable items." On the overall average for all the sectors (excepting the sector "293-10"), the error type 1) (significant deviation from the previous month) accounted for only 9%. (Note that the deviation check was performed on "production in volume" which is the most basic question item.) On the other hand, other two error types (data inconsistency among relevant items and a significant deviation of the commodity unit price for a specific establishment) showed relatively high frequencies of occurrence, 20% and 16% respectively. This indicates that some respondents failed to understand the exact meaning of the questions in terms of data consistency.

The above analysis suggests the need for devising effective measures to reduce entry errors classified as the "entering of abnormal figures" prior to the implementation of the pilot survey. Such measures should then be reflected in the data entry manual for respondents and trainings for enumerators.

(3) Examination of questionnaire after collection and correction of entry error

Each questionnaire collected from a sample establishment during the pretest survey was checked for data accuracy through the following two-stage examination.
1) Preliminary field verification by the enumerator
2) Final examination at the JICA study team headquarters

In above 2), doubtful data was identified by applying the criteria related to the "missing of indispensable items" and the "entering of abnormal figures." Then their accuracy was checked with the responding establishment in question. As an entry error was confirmed, the respective item was corrected accordingly.

It should be noted, however, that the follow-up inquiry on doubtful data to concerned establishments was limited to the following eight sectors, partly because collection of questionnaire was continued until the end of May 2001, leaving little time for data examination for some sectors, and partly because examination took longer time than expected due to a limited number of examination staff as well as the lack of practice/experience. The eight sectors were given of priority in the follow-up inquiry in consideration of relatively high collection rates.
- 151-10: Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats

- 155-10: Manufacture of beverages
- 160-10: manufacture of tobacco products
- 232-10: Manufacture of refined petroleum products
- 262-10: Manufacture of cements
- 271-10: Manufacture of iron and steel
- 324-10: Manufacture of television and radio receivers, sound or video recording apparatus, and associated goods
- 341-10: Manufacture of motor vehicles and bodies for motor vehicles

For these eight sectors, the percentage of entry errors found after the follow-up inquiry and data correction was compared with that before the follow-up inquiry, and the difference was small. Thus, under the pretest survey, the follow-up inquiry to establishments did not lead to a significant reduction of entry errors, partly because a number of establishments refused to recheck their entries or did not respond to the follow-up inquiry due to the absence of a person who filled out the questionnaire or other reasons.

The data entry errors indicated in Tables 2-13 and 2-14 were calculated after the examination process for the eight sectors, including follow-up inquiry and correction. It should be noted, however, that examination carried out during the pretest survey was not sufficient in terms of time and staff allocated, while follow-up inquiries did not work effectively to improve accuracy. For the pilot test, therefore, the examination process should be considered as one of the most important areas to be improved and should be designed elaborately.

2.5.2 Section and Item Response Rates

This section analyzes the response rate for individual section of the pretest questionnaire and that for items in the "Finished Products" section.

Analysis of the section and item response rates helps us to determine the relative response rates among sections and items comparable to others. Thus, a section or an item that shows a relatively low response rate indicates that it may be difficult for the respondent to give data or information for some technical or confidential reasons, i.e., he/she cannot respond or refuses to respond.

(1) Section Response Rate

The section response rate measures the number of valid responses for each of "Finished Products, "Raw Materials" and "Production Capacity" sections, as percentage of total responses (i.e., the number of questionnaires collected with at least one data entry in any item in each section.)

Table 2-15 summarizes section response rates by sector and month. First of all, the "Finished Products" section shows generally high response rates for most sectors, with little variation over the three-month period. The average response rate for three months and all the sectors (expecting the questionnaire "293-10" for which no response has been collected) is impressively high at 95%. On the other hand, the "Raw Materials" section shows relatively large variations of response rates both on a sector and monthly basis. The overall average rate is 47%, much lower than that for the "Finished Products" section. Finally, the "Production Capacity" section shows an intermediate level of response rate, 69% on the overall average, while section response rates vary relatively largely among the sectors and over the months.

Table 2-15　Section Response Rate in Pretest Survey

[Unit: %]

Questionnaire Number	Sector Name	Finished Products				Raw Materials				Production Capacity			
		Jan	Feb	Mar	AVG	Jan	Feb	Mar	AVG	Jan	Feb	Mar	AVG
151-10	Meat, fish, fruit etc.	98	100	100	99	64	64	81	70	62	64	56	61
155-10	Beverages	100	83	100	94	88	83	100	90	88	83	83	85
160-10	Tobacco	100	100	100	100	100	100	100	100	100	67	100	89
181-10/20	Garments	92	98	98	96	44	47	43	45	71	78	83	77
232-10	Refined petroleum	100	100	100	100	67	50	75	64	67	75	75	72
242-10	Chemical products	93	88	86	89	44	52	32	43	85	68	32	62
262-10	Cements	100	100	100	100	75	75	100	83	75	75	100	83
271-10	Iron and steel	82	67	81	77	47	50	50	49	65	50	44	53
321-10	Electric valves, TV transmitters	80	100	100	93	40	25	33	33	40	50	33	41
322-10	Semi-conductors	82	100	92	91	41	40	38	40	53	60	46	53
324-10	TV&radio receivers, etc.	100	100	100	100	43	43	60	49	57	57	80	65
341-10	Motor vehicles	90	100	100	97	90	80	70	80	90	80	60	77
343-10	Parts for automobiles	100	100	100	100	64	78	86	76	91	100	100	97
	1st 13 SECTORS	93	95	96	95	52	54	57	54	71	71	64	69
152-10	Dairy products	100	100	100	100	67	67	33	56	0	100	0	33
210-10	Pulp, paper and paperboard	88	100	100	96	29	43	29	34	63	29	57	50
241-10	Basic chemicals	100	100	100	100	0	0	0	0	100	100	100	100
252-10	Plastic	100	100	100	100	57	57	83	66	86	86	100	91
289-10	Structural metal products	80	80	80	80	29	29	0	19	60	60	60	60
293-10	Domestic electric appliances	---	---	---	---	---	---	---	---	---	---	---	---
300-10	Office&computing machinery	100	100	100	100	33	67	33	44	0	33	0	11
314-10	Cell, Lighting equipment, etc.	100	100	100	100	33	33	33	33	100	100	100	100
359-10	Motorcycles & bicycles	100	100	100	100	40	60	40	47	100	100	100	100
	2nd 9 SECTORS	93	96	96	95	40	46	35	40	66	64	69	66
	22 SECTORS	93	95	96	95	46	52	44	47	71	71	65	69

The results of the analysis shown in Table 2-15 give several valuable suggestions for the future design of the CSP questionnaire. First of all, as the "Finished Products" and "Production Capacity" sections shows high response rates, they should be included in the pilot test for their likelihood of high response on a continuous basis.

In contrast, the relatively low response rate for the "Raw Materials" section suggests that the section may not be suitable, at least in its present form, for inclusion in the pilot survey. This is because the commodities selected for this section may not be appropriate (not applicable for many respondents) or there may be another reason on the establishment side to reject disclosure of information.

(2) Item Response Rate

The item response rate represents the number of responses in each item of the section, as percentage share in the total amount of commodity data entered in the "Finished Products" section (to count a response on a commodity as one unit [= one record]).

Table 2-16 shows item response rates for the pretest survey by sector (three-month average).

Table 2-16　Item Response Rate in Pretest Survey

[Unit: %]

Questionnaire Number	Sector Name	Question Items in "Finished Products" Section							Value
		In Terms of Volume							Value
		(A)	(B)	(X)	(C)	(D)	(E)	(F)	(G)
		Production	Purchased/ Received	Internal Consumption	Domestic Sales	Export	Others (Shipment)	Month-end Inventory	Production
151-10	Meat, fish, fruit etc.	92	45	22	94	33	22	92	97
155-10	Beverages	100	46		78	14	41	96	100
160-10	Tobacco	100	13		78	38	47	100	100
181-10/20	Garments	94	26		27	70	26	85	91
232-10	Refined petroleum	84	36	41	75	8	8	84	84
242-10	Chemical products	84	31	13	90	24	13	91	88
262-10	Cements	100	50	85	75	43	49	100	93
271-10	Iron and steel	81	27	14	66	14	19	84	90
321-10	Electric valves, TV transmitters	82	78		48	55	29	82	92
322-10	Semi-conductors	58	58		27	59	58	91	95
324-10	TV&radio receivers, etc.	75	20		78	46	38	100	75
341-10	Motor vehicles	80	19		84	12	13	94	80
343-10	Parts for automobiles	39	16		39	24	8	39	39
	1st 13 SECTORS	82	36	35	66	34	29	88	86
152-10	Dairy products	100	11	44	67	11	44	100	78
210-10	Pulp, paper and paperboard	100	13		91	17	13	77	98
241-10	Basic chemicals	100	0	67	0	0	0	100	67
252-10	Plastic	96	38	13	75	13	0	88	79
289-10	Structural metal products	76	33		71	51	39	84	80
293-10	Domestic electric appliances	---	---		---	---	---	---	---
300-10	Office&computing machinery	100	33		67	89	33	100	100
314-10	Cell, Lighting equipment, etc.	100	11		56	67	33	100	100
359-10	Motorcycles & bicycles	67	67		67	0	0	67	100
	2nd 9 SECTORS	92	26	41	62	31	20	90	88
	22 SECTORS	86	32	37	64	33	25	88	87

Note:　The item "(X) Internal consumption" was selectively included for the sectors of which production structure likely requires the internal consumption.

The average response rate for the all sectors (expecting the questionnaire "293-10") is fairly high at nearly 90% for three items; (A) production volume; (F) inventory volume; and (G) production value. Then, item (C) "domestic sales" shows 64%. On the other hand, the other four items show relatively lower response rates ranging between late-20% and late-30%.

For the item response rate, there are a few important points that require attention. First of all, item "(X) Internal consumption" was selectively included for the pretest survey, i.e., it was asked for pre-selected sectors only and was dropped from the sectors of which production structure does not likely require the internal consumption. In fact, the item (X) was included in the questionnaires for eight sectors and was responded by at least one establishment in each sector, indicating that the item (X) was actually necessary for these eight sectors.

Secondly, no response was made to some items in the following sectors, though their percentage is very small:
1) Items "(B) Purchased/received", "(C) Domestic sales," "(D) Export" and "(E) Others" in "241-10: Manufacture of basic chemicals".
2) Item "(E) Others" in "252-10: Manufacture of plastic products".
3) Items "(D) Export" and "(E) Others" in "359-10: Manufacture of motorcycles and bicycles".

It is then important to analyze as to whether these response patterns reflect the production activities of the respective sectors accurately. For instance, 1) indicates no response to the three items related to shipment for the basic chemical industry, while the response in "(X) Internal consumption" is relatively high at 67%. Zero response reflects the actual situation if the basic chemical industry consumes most of its products internally, without shipping them to the domestic and export markets. A similar examination is necessary for 2) and 3).

2.5.3 Analysis on Commodity-Based Response Rate

This section analyzes the response rate for individual commodity included in the "Finished Products" section. The pretest survey selected commodities that can be considered as major products of the country's manufacturing industry, on the basis of value added for PSIC (1994) 5-digit industries. These commodities were then printed

in the respective form of questionnaire. Thus, analysis of response rate for individual commodity provides important information that enables us to check appropriateness of commodity selection.

(1) Frequency distribution of commodities by the number of months responded during the pretest survey

The pretest survey was conducted between January through March 2001, called reference months, and therefore obtained three responses at maximum for each commodity. Table 2-17 shows frequency distribution of each commodity according to the number of months for which response was made, i.e., 0 - 3.

Table 2-17 Frequency Distribution of Commodities by Number of Data Entry during Three Reference Months

Questionnaire Number	Sector Name	Number of Data Entry during the 3 Reference Months									
		Nothing		1 month		2 months		3 months		TOTAL	
		Number of Commodity	%	Number of Commodity	%	Number of Commodity	%	Number of Commodity	%	Number of Commodity	%
151-10	Meat, fish, fruit etc.	1	9	1	9	5	45	4	36	11	100
155-10	Beverages	8	73	0	0	0	0	3	27	11	100
160-10	Tobacco	0	0	1	50	0	0	1	50	2	100
181-10	Garments (for women)	0	0	0	0	0	0	8	100	8	100
-20	------------ (for men)	0	0	0	0	0	0	6	100	6	100
232-10	Refined petroleum	1	10	0	0	1	10	8	80	10	100
242-10	Chemical products	0	0	0	0	0	0	4	100	4	100
262-10	Cements	1	25	0	0	0	0	3	75	4	100
271-10	Iron and steel	1	11	0	0	0	0	8	89	9	100
321-10	Electric valves, TV transmitters	5	63	0	0	1	13	2	25	8	100
322-10	Semi-conductors	0	0	0	0	0	0	10	100	10	100
324-10	TV&radio receivers, etc.	4	31	0	0	2	15	7	54	13	100
341-10	Motor vehicles	0	0	0	0	0	0	6	100	6	100
343-10	Parts for automobiles	0	0	1	17	2	33	3	50	6	100
	TOTAL of 1st 13 SECTORS	21	19	3	3	11	10	73	68	108	100
152-10	Dairy products	2	40	2	40	0	0	1	20	5	100
210-10	Pulp, paper and paperboard	0	0	0	0	0	0	6	100	6	100
241-10	Basic chemicals	3	60	0	0	0	0	2	40	5	100
252-10	Plastic	1	25	0	0	0	0	3	75	4	100
289-10	Structural metal products	3	30	3	30	1	10	3	30	10	100
293-10	Domestic electric appliances	---	---	---	---	---	---	---	---	---	---
300-10	Office&computing machinery	7	78	0	0	0	0	2	22	9	100
314-10	Cell, Lighting equipment, etc.	4	67	0	0	0	0	2	33	6	100
359-10	Motorcycles & bicycles	1	50	0	0	0	0	1	50	2	100
	TOTAL of 2nd 9 SECTORS	21	45	5	11	1	2	20	43	47	100
	TOTAL of 22 SECTORS	42	27	8	5	12	8	93	60	155	100

The table indicates that frequency distribution of commodities by month varies among sectors. They are roughly divided into two groups, those with no data entry and those with response every month. For all the sectors (expecting the questionnaire "293-10" for which no response was collected), commodities with no response account for 27% of total and those with response every month 60%. On the other hand, those with some response (namely once or twice during the reference months) accounted for less than 10% respectively.

Dividing the sectors into the First and Second Groups, the First Group shows higher frequency of response. Commodities for which response was made at least once (one month) accounted for 81% of total in the First Group (i.e., 68% + 10% + 3%), whereas the percentage share is much lower for the Second Group at 56% (i.e., 43% + 2% + 11%).

For the pilot test survey, the commodities for which response was made at least once during the pretest survey period should be included in the questionnaire on a continuous basis. On the other hand, commodities with no response should be subject to follow-up studies in order to identify a cause for non-response and may be dropped from the future survey, or corrective measures should made to encourage response, such as to change the commodity name.

(2) Commodities with no data entry during the pretest survey period
    During the pretest survey period, no data entry has been made for the following commodities, together with their respective sectors.

151-10: Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats
  - 107: Smoked / dried fish and other aquatic animals

152-10: Manufacture of dairy products
  - 103: Powdered milk (including infants milk)
  - 104: Pasteurized milk

155-10: Manufacture of beverages
- 104: Flavored drinks
- 105: Flavored drinks with natural fruit juice
- 106: Powdered / instant coffee
- 107: Canned / packed tea leaves
- 108: Flavored drinks
- 109: Flavored drinks with natural fruit juice
- 110: Pure fruit juices
- 111: Coffee / tea

160-10: Manufacture of tobacco products
(Nothing)

181-10: Manufacture of garments (for women, girls and infants)
(Nothing)

181-20: Manufacture of garments (for men and boys)
(Nothing)

210-10: Manufacture of pulp, paper and paperboard
(Nothing)

232-10: Manufacture of refined petroleum products
- 109: Paraffin Wax

241-10: Manufacture of basic chemicals
- 101: Industrial gases
- 102: Organic acids and organic compounds
- 103: Activated carbon

242-10: Manufacture of other chemical products
(Nothing)

252-10: Manufacture of plastic products
- 103: Plastic pipes

262-10: Manufacture of cements

- 103: Other types of cement

271-10: Manufacture of iron and steel

- 108: Hot rolled coils

289-10: Manufacture of structural metal products and other fabricated metal products

- 102: Reservoir tanks
- 104: Windows and their frames
- 107: Drums

293-10: Manufacture of domestic electric appliances

(No questionnaire collected)

300-10: Manufacture of office, accounting and computing machinery

- 101: Personal computers
- 103: Projectors
- 104: Printers
- 105: Scanners
- 106: Calculators
- 108: Floppy disks
- 109: Compact discs

314-10: Manufacture of primary cells and batteries, lighting equipment and electric lamps, and other electrical equipment

- 102: Lead-acid storage batteries
- 103: Parts of electric accumulators
- 105: Fluorescent lamps
- 106: Decorative lamps (including Christmas lights)

321-10: Manufacture of electronic valves and tubes, television and radio transmitters, and apparatus for line telephony and line telegraphy

- 102: Microwave tubes
- 103: Receiver / amplifier valves and tubes
- 105: Television camera
- 107: Cellular phones

- 108: Fax machines

322-10: Manufacture of semi-conductor and other electronic components
(Nothing)

324-10: Manufacture of television and radio receivers, sound or video recording apparatus, and associated goods
- 108: Answering machines
- 109: Cassette Players
- 110: Compact disc (CD) players
- 111: Pre-recorded tapes / discs

341-10: Manufacture of motor vehicles and bodies for motor vehicles
(Nothing)

343-10: Manufacture of parts and accessories for motor vehicles
(Nothing)

359-10: Manufacture of motorcycles and bicycles
- 102: Bicycles

2.6   Comments and Suggestions on Preset Questionnaire

During the pretest survey, "Comment Sheet to the Questionnaire of the Pretest Survey" was distributed to all the sample establishments (totaling 605 including the disqualified ones), to write comments on the questionnaire including any deficiencies and suggestions for future improvement.

(1)   Question items in the comment sheet
   Figure 2-4 shows the sample form of comment sheet.   In the comment sheet, the following questions were asked.
- **COMMENT-1**: Are there any survey commodities for your sector that are missing from the questionnaire?
  - → If any, the name of commodity is specified, together with unit of measurement.   In particular, for a finished product, main raw materials should be specified.

- **COMMENT-2**: Are there any commodities that you suggest to delete from the questionnaire?

    → A commodity to be removed should be specified by entering its classification code in a specified column.

- **COMMENT-3**: Are there any inappropriate units for measurement in the questionnaire?

    → This should be specified by entering the respective commodity's code and an appropriate unit of measurement, as suggested by the respondent, in a specified column.

- **COMMENT-4**: Are there any survey items defined in *"Instruction for Filling Out the Questionnaire"*, whose definition is unclear or misleading?

    → Applicable items should be ticked.

- **COMMENT-5**: Other suggestions/comments to the questionnaire

    → The respondent is free to write any comment in a specified column.

Figure 2-4 Comment Sheet to Questionnaire of Pretest Survey

In order to generate reliable Industrial Production Statistics on a commodity and volume basis, the survey aims to cover the major commodities in terms of value added and also key commodities which well represent the trend of performance of each manufacturing sector.

This sheet is to invite your comments on the design of the questionnaire.

Establishment ID : ☐☐☐☐☐☐☐ (To be filled in by the enumerator.)

COMMENT-1: Are there survey items necessary to accomplish the objective of the survey for your sector that are missing from the questionnaire? Please specify them below.

1. Finished Products

Name of finished product to be added	Unit for measurement	Name of main raw material(s) for the product
1)		
2)		
3)		

2. Raw Materials

Name of raw material to be added	Unit for measurement
1)	
2)	
3)	

3. Production Capacity

Definition to be added for the production capacity	Unit for measurement
1)	
2)	
3)	

COMMENT-2: Are there any items that you suggest to delete from the questionnaire? Please specify them below.

Commodity Code (3-digit as shown in the questionnaire)

1. Finished Products _____
2. Raw Materials _____
3. Production Capacity _____

COMMENT-3: Are there any inappropriate units for measurement in the questionnaire?

		Commodity Code (3-digit)	Appropriate Measuring Unit of volume
1. Finished Products	1)		
	2)		
	3)		
2. Raw Materials	1)		
	2)		
	3)		
3. Production Capacity	1)		
	2)		
	3)		

COMMENT-4: Are there any survey item/s defined in *"Instruction for Filling Out the Questionnaire"*, whose definition is unclear or misleading? Please tick the corresponding items below.

☐ Production   ☐ Purchased/Received   ☐ Internal Consumption   ☐ Domestic Sales

☐ Export   ☐ Others (in Shipment)   ☐ Inventory at the end of month

☐ Monthly Production Capacity

COMMENT-5: Other suggestions/comments:

Thank you for your cooperation.

2 - 55

(2) Collection rate

As shown in Table 2-18, 51 comment sheets were collected, accounting for slightly over 8% of the 605 pre-qualified sample establishments. The collection rate was very low compared to that for the pretest questionnaire that was higher than expected.

The comment sheets were collected from 13 out of 22 sectors surveyed. Due to the low collection rate, a small number of comment sheets were obtained for most of the sectors, ranging between 1 and 5.

As a result, the comment sheet survey did not collect a wide range of comments and suggestions on the pretest questionnaire.

Table 2-18   Number of Comment Sheets Collected

Questionnaire Number	Sector Name	Collected from Qualified Establishments	Collected from Disqualified Establishments	TOTAL
151-10	Meat, fish, fruit etc.	11	2	13
155-10	Beverages	2	0	2
160-10	Tobacco	0	0	0
181-10/20	Garments	7	3	10
232-10	Refined petroleum	0	0	0
242-10	Chemical products	4	3	7
262-10	Cements	0	0	0
271-10	Iron and steel	5	0	5
321-10	Electric valves, TV transmitters	0	2	2
322-10	Semi-conductors	1	0	1
324-10	TV&radio receivers, etc.	0	0	0
341-10	Motor vehicles	1	1	2
343-10	Parts for automobiles	2	0	2
	1st 13 SECTORS	33	11	44
152-10	Dairy products	0	0	0
210-10	Pulp, paper and paperboard	2	0	2
241-10	Basic chemicals	0	0	0
252-10	Plastic	0	0	0
289-10	Structural metal products	1	0	1
293-10	Domestic electric appliances	0	0	0
300-10	Office&computing machinery	1	0	1
314-10	Cell, Lighting equipment, etc.	1	2	3
359-10	Motorcycles & bicycles	0	0	0
	2nd 9 SECTORS	5	2	7
	22 SECTORS	38	13	51

(3) Major comments and suggestions on the pretest questionnaire made in the comment sheet

Comments and suggestions on the pretest questionnaire, as made in the comment sheet, are summarized below according to the question item.

All the comments from sample establishment are tabulated in Annex 7, by question and sector.

[COMMENT-1 and -2]

The comment sheet survey is primarily designed to check, among other things, appropriateness of the commodities listed in the present form of questionnaire and to obtain information that allows us to add or delete commodities in the future questionnaire form. In this sense, Comment-1 (major commodities to be added) and Comment-2 (major commodities to be removed) are complementary to each other.

As for Comment-1, the following sectors received a relatively large number of responses.

- 151-10: Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats
  - ➤ 14 commodities were cited as commodities to be added to finished products. 4 commodities were named by more than two respondents, namely "Crude coconut oil" (4 respondents), "Solvent pellet" (2), "Cochiu oil" (2), and "Broiler starter" (2). Note that the first three items are made from copra.
  - ➤ 12 commodities were cited as commodities to be added to raw materials, and one commodity was named by more than two respondents, namely "Copra" (3).
  - ➤ 4 commodities were cited as commodities to be added to production capacity, and 3 commodities were named by more than two respondents, namely "Crude coconut oil" (3), "Solvent pellet" (2), and "Cochiu oil" (2).

- 181-10/20: Manufacture of garments
  - ➤ 8 commodities were cited as commodities to be added to finished products, and no commodity was named by more than two respondents. Note that they include commodities that should not be classified in this sector, such as "Modular partitions", seemingly reflecting the fact that the respondents

wrote all the items they produced regardless of the sector classification based on PSIC.

➢ 11 commodities were cited as commodities to be added to raw materials, and no commodity was named by more than two respondents. Again, commodities that should not be classified in this sector, such as "Stabilizers", are included.

➢ 2 commodities were cited as commodities to be added to production capacity, and no commodity was named by more than two respondents.

• 242-10: Manufacture of other chemical products

➢ 8 commodities were cited as commodities to be added to finished products. One commodity --- thinner (2 respondents) --- was named by more than two respondents. No unit of measurement and raw materials was specified.

➢ 6 commodities were cited as commodities to be added to raw materials, and no commodity was named by more than two respondents.

➢ No commodity was cited as commodities to be added to production capacity.

• 271-10: Manufacture of iron and steel

➢ 6 commodities were cited as commodities to be added to finished products, and no commodity was named by more than two respondents.

➢ 4 commodities were cited as commodities to be added to raw materials, and no commodity was named by more than two respondents.

➢ No commodity was cited as commodities to be added to production capacity.

• 314-10: Manufacture of primary cells and batteries, lighting equipment and electric lamps, and other electrical equipment

➢ 4 commodities were cited as commodities to be added to finished products, and no commodity was named by more than two respondents. The cited commodities include those that should not be classified in this sector, such as "Car audio", probably because the respondents merely wrote all the items they produced regardless of the sector classification based on PSIC.

➢ 6 commodities were cited as commodities to be added to raw materials, and no commodity was named by more than two respondents.

> No commodity was cited as commodities to be added to production capacity.

Overall, respondents to Comment-1 seem to want the more specific listing of commodities than those in the present form of questionnaire. The pretest questionnaire has adopted a rather broader classification to give priority to coverage, rather than specificity. However, the comments suggest the specific listing of commodities, especially for those are considered to be important in the manufacturing industry in the Philippines, in order to avoid confusion in respondents.

On the other hand, there was only one response to Comment-2, which wanted deletion of commodity "102: Jeeps including owner-type," which was listed in the "Finished Products" section of "341-10: Manufacture of motor vehicles and bodies for motor vehicles". It should be recommended to identify commodities to be deleted on the basis of other information, such as "commodities for which no data was reported during the pretest survey period" discussed in **2.5.3**.

[COMMENT-3]
Responses to Comment-3 were very limited for all the sectors and are summarized as follows.

1) Scaling down the unit of measurement
Some respondents requested the use of a smaller unit of measurement, as seen below:
- The unit of measurement for the questionnaire "151-10: Production, processing and preservation of meat, fish and other seafoods, fruit, vegetables, oils and fats" should be changed from "ton" to "gram" for all the commodities in all the sections. (1 response)
- The unit of measurement for "203: Flavors" in the "Raw Materials" section of "155-10: Manufacture of beverages" should be changed to "kilo gram." (1)

These responses accept measurement by weight but want the smaller units of measurement, gram and kilogram, probably because the responding establishments do not produce less than a ton per month.

2) Change in unit of measurement

Several responses suggested a complete change in the unit of measurement, as follows:

- The unit of measurement for "301: Bottling/filling capacity of malt liquor (beer)" in the "Production Capacity" section of "155-10: Manufacture of beverages" should be changed from "kilo liter" to "case" (1 response).
- The unit of measurement for "204: Cotton (woven fabrics)" in the "Raw Materials" section of "181-10/20: Manufacture of garments" should be changed from "1,000 sq. meters" to "piece" (1).
- The unit of measurement for "102: Drugs and medicines" in the "Finished Products" section of "242-10: Manufacture of other chemical products" should be changed from "ton" to "SPU (Standard Packaging Unit)" (1).

These comments suggest the units of measurement that are familiar and easy to use for establishments to reflect general trade practice in the country.

The choice of the unit of measurement involves a delicate consideration, as the unit of measurement must be suitable for tabulation while not causing confusion among responding establishments. For instance, even though beer may be counted by the number of "cases" in business practice, using it as the unit of measurement for statistical purposes creates a risk of data error because respondents may refer to different bottle sizes. It is therefore difficult to obtain reliable actual figures based on the common standard for measurement. On the other hand, "kilo liter" is suitable for the CSP's purpose as it is a universal unit of measurement recognized by every establishment. Thus, it is often the case that a unit of measurement suitable for the CSP is not necessarily the one that is used in an industry for daily business purpose.

[COMMENT-4]

The number of responses to Comment-4 is very small and cannot be tabulated for each sector. Instead, the total number of establishments in all the sectors that have indicated the problem is tabulated for each survey item, as shown in Figure 2-5.

Figure 2-5   Survey Items of Which Definition is Unclear or Misleading
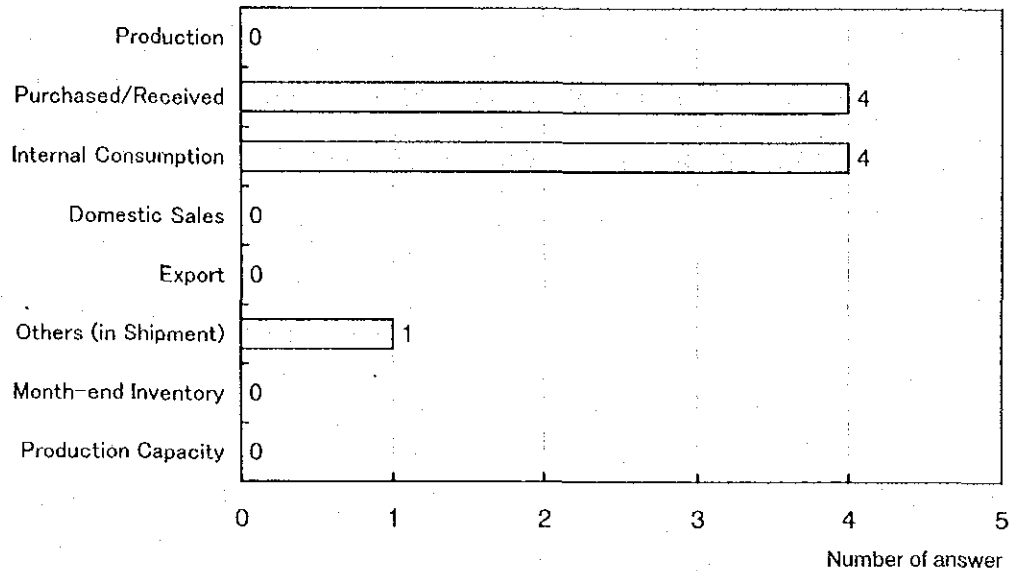
Note: Total number of Comment Sheet collected is 51.

Three survey items are cited for unclear or misleading definition, namely "Purchased/received" (4 responses), "Internal consumption" (4), and "Others (in shipment)" (1). In consideration of the small number of respondents, it is not appropriate to conclude that the first two items are difficult to understand for many respondents. However, these two items are newly introduced in the pretest survey while not included in the current MISSI, and therefore it is desirable to give additional instruction on these items in the future CSP (pilot survey) in order to avoid confusion among respondents.

[COMMENT-5]

For Comment-5, respondents were asked to make comment on the pretest survey form in general, but the actual number of responses was small. Nevertheless, several responses are useful for future improvement of the questionnaire design. As all the comments are applicable to all the sectors, they are treated as general comments regardless of sectors.

1) Suggestions on addition of new survey items
   Major suggestions include the following:

- "Should allow a space to fill in beginning inventory as well."
- "The format of the questionnaire is ok, except that it lacks beginning inventory."

As the beginning inventory is identical with the ending inventory in the previous month, it is not included in the pretest survey form. However, it may be beneficial to add it as a survey item as it helps improve data accuracy by causing the respondent to recheck the ending inventory in the previous month, or as it facilities examination of the questionnaire. A further study may be required.

2) Suggestion on the unit of measurement
   The following suggestion was made with regard to the unit of measurement:
   - "Please adopt the unit of measure used by the establishment."

As pointed out in discussion on Comment-3, the unit of measurement suitable for the CSP is not necessarily the one used by establishments for daily transaction purposes. The unit of measurement should be selected from this point of view to ensure reliability and accuracy of statistical data.

3) Suggestions on applicability to subcontractors and labor-subcontractors
   Major suggestions are as follows:
   - "The questionnaire is not very appropriate for a subcontracting establishment."
   - "We cannot provide data on our production capacity since we are on a job order basis and product mix."

The above comments do not specify a concrete reason why the questionnaire is not appropriate for subcontractors. Presumably, many subcontractors are responsible for small portions of the entire production process, often making work-in-process for final assembly by their customers. As a result, they may feel difficulty in relating their products to those listed in the questionnaire as "finished products."

Similarly, labor-subcontractors use the varying number of workers according to actual orders from customers, and as a result, their production capacity is essentially determined by actual work force and varies greatly over a short period of time. It is therefore reasonable to assume that they feel difficulty more or less in reporting the "production capacity."

Nevertheless, these problems cannot be solved entirely by modifying the questionnaire design, because it is not practically possible to make the questionnaire that covers every type of work-in-process. Rather, this problem should be addressed as the scope of the CSP, i.e., how much it should include subcontractors. As the CSP' questionnaire that focuses on individual commodity is not suitable for the sectors that are primarily composed of subcontractors or labor-subcontractors, the current MISSI's questionnaire (i.e., the indirect method to measure the volume-based production trends at a sector level) would rather be considered.

4) Suggestion on the collection schedule

The suggestion is highlighted by the following comment:

- "Needs more time to review by the President of the establishment."

As the pretest questionnaire covers a wide variety of items, many establishments require different divisions to obtain necessary data and information. Also, the completed questionnaire may have to be approved by the president. This requires a relatively long period of time, and the collection schedule for the pretest survey (to be collected by the 15th day of the month following the survey month) may be difficult to meet for some establishments.

5) Suggestions on questionnaire layout

The following comments were made:

- "Be specific of the name and address of the sample establishment. That causes refusal."
- "Why not let the establishment enter their finished products."

The first comment raises the question on the basic questionnaire design and suggests that it should ask the name and address of the sample establishment, including the name and telephone number of the respondent. In fact, such personal data were deliberately omitted in the form of the pretest questionnaire, as the question to ask "identity" would likely cause some respondents to become reluctant to participate in the survey. Now, some establishments may refuse to respond unless there is some "evidence" that they have really responded to the questionnaire.

The second comment suggests the need for an open space where the sample establishment can write their products, other than commodities that are not printed in

the questionnaire. However, the CSP survey is designed to obtain production, shipment and inventory data on major commodities made in the country, not necessarily covering each and every product. Naturally it is important to check if the questionnaire lists all major commodities on a periodical basis, which can be accomplished by the industrial census and other surveys. Technically, it is possible to add an "other commodities" column to the questionnaire form. But if doing so, enormous variety of commodities will be reported and eventually discarded because of difficulty to compile them into a statistically meaningful data set.

2.7 Analysis on Data Obtained from Pretest Survey

This section verifies a set of data obtained and tabulated in the pretest survey, with reference to monthly changes in aggregate data for each sector. Then, the data set is compared with relevant sector-based data published by industrial associations and other organizations to check the reliability of data. Finally, recommended improvements for the CSP are discussed as they are revealed through the data tabulation and analysis process.

2.7.1 Procedure of Analysis

(1) Data tabulation

Data on the "Finished Products" section in the pretest questionnaire are tabulated for 13 sectors, which belong to the First Group, among the 22 target sectors covered by the pretest survey.

Volume data are summated for each commodity code in each sector and month. For a sector using the same unit of measurement for all commodities, data on all the commodities are also added up to obtain the sector total. In general, even though the units of measurement are identical among different kinds of commodities, it is not appropriate to sum up their actual figures. However, the summation is daringly made here in order to check the accuracy of data by comparing monthly data. (For a sector using different units of measurement for individual commodity, "–" is marked in the summary tables attached hereto, since sector-wise tabulation is impossible for this kind of sector.)

On the other hand, value data is tabulated for reference purposes only, since very small number of response were collected on the "Production value", and available comparable information for data validation is very limited.

(2) Analytical work

The tabulated data for the 13 sectors are examined for their accuracy and consistency by comparing monthly variation in production volume. In addition, the data for the following five (5) sectors --- "160-10: Tobacco", "232-10: Refined petroleum", "262-10: Cements", "271-10: Iron and steel" and "341-10: Motor vehicles" --- are compared with those published by industrial associations.

2.7.2 Tabulation Results and Verification

(1) Tabulation results
  1) Production volume by month and sector
     Production volume data tabulated for each sector and month is shown in Table 2-19, 2-20 and 2-21.

  2) Production value by month and sector (reference only)
     Production value data tabulated for each sector and month is shown in Table 2-22, 2-23 and 2-24.

Table 2-19   Production Volume by Sector for January 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.	Ton	2,408,442.55	288,866.68	288,063.68	3,876,578.91	1,602,429.58	1,517.35	2,919,848.00
2.	155-10	Beverages	–	–	–	–	–	–	–	–
3.	160-10	Tobacco	Carton	716,501.00	118,210.00	–	617,560.19	86,912.00	0.00	123,996,415.18
4.	181-10/20	Garments	1000 pieces	1,814,916.67	29,274.14	0.00	126,247.94	1,532,700.99	70,354.99	223,950.47
5.	232-10	Refined petroleum	–	–	–	–	–	–	–	–
6.	242-10	Chemical products	Ton	7,335,728.51	12,993,919.08	62.00	8,529,628.13	12,050.60	86.00	50,933,830.47
7.	262-10	Cements	Ton	909,984.72	6,000.00	170,060.40	391,337.44	0.00	0.00	460,892.16
8.	271-10	Iron and steel	Ton	43,997.80	1,690.15	1,400.00	115,075.96	80.21	498.00	76,003.03
9.	321-10	Electric valves, TV transmitters	Piece	15,625.00	8,200.00	–	945.00	18,343.00	0.00	2,080.00
10.	322-10	Semi-conductors	1000 pieces	562,859.53	771,895.15	–	5,073.22	10,329,483.67	317,292.70	20,321,701.54
11.	324-10	TV&radio receivers, etc.	–	–	–	–	–	–	–	–
12.	341-10	Motor vehicles	Units	8,421.00	1,123.00	–	8,072.00	1.00	35.00	7,158.00
13.	343-10	Parts for automobiles	Units	659,060.00	60,191.00	–	168,992.00	397,353.00	1,550.00	196,674.00

Table 2-20　Production Volume by Sector for February 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.	Ton	3,451,121.24	1,523,573.17	949.07	1,186,143.44	1,389,577.04	1,138.46	3,693,129.79
2.	155-10	Beverages	-	-	-	-	-	-	-	-
3.	160-10	Tobacco	Carton	630,133.00	0.00	-	539,812.04	4,940.00	0.00	539,410.14
4.	181-10/20	Garments	1000 pieces	1,076,054.27	138,640.30	0.00	9,560.52	825,719.44	213,917.35	427,830.94
5.	232-10	Refined petroleum	-	-	-	-	-	-	-	-
6.	242-10	Chemical products	Ton	7,185,547.99	925,797.52	0.00	8,253,734.68	2,483.75	0.00	3,242,578.60
7.	262-10	Cements	Ton	664,075.00	4,037.00	301,259.60	338,672.00	14,856.00	127.32	363,978.00
8.	271-10	Iron and steel	Ton	36,575.20	1,463.01	1,200.00	65,704.89	168.05	36.00	46,899.17
9.	321-10	Electric valves, TV transmitters	Piece	30,642.00	1,550.00	-	807.00	30,766.00	0.00	22,506.00
10.	322-10	Semi-conductors	1000 pieces	501,134.24	652,423.07	-	1,988,763.00	1,104,594.41	297,919.00	214,712.50
11.	324-10	TV&radio receivers, etc.	-	-	-	-	-	-	-	-
12.	341-10	Motor vehicles	Units	9,897.00	4,934.00	-	9,751.00	0.00	156.00	8,254.00
13.	343-10	Parts for automobiles	Units	406,979.00	27,595.00	-	78,217.00	331,345.00	1,913.00	158,172.00

Table 2-21 Production Volume by Sector for March 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.	Ton	4,887,116.36	1,730,588.98	1,371.32	1,497,343.56	1,503,877.84	1,101.19	6,597,454.30
2.	155-10	Beverages	–	–	–	–	–	–	–	–
3.	160-10	Tobacco	Carton	560,747.00	0.00	–	895,232.64	6,486.30	0.00	198,428.20
4.	181-10/20	Garments	1000 pieces	334,193.45	2,564,628.76	0.00	3,359.29	2,790,146.50	33,534.81	301,682.05
5.	232-10	Refined petroleum	–	–	–	–	–	–	–	–
6.	242-10	Chemical products	Ton	13,820,496.90	385,691.33	100.00	14,527,484.04	3,713.63	0.00	545,227.77
7.	262-10	Cements	Ton	280,207.88	6,008.00	98,723.64	186,133.96	0.00	0.96	20,373.16
8.	271-10	Iron and steel	Ton	30,770.91	1,456.58	1,350.00	38,715.92	158.04	155.00	37,007.05
9.	321-10	Electric valves, TV transmitters	Piece	890.00	3,118.00	–	914.00	0.00	0.00	3,465.00
10.	322-10	Semi-conductors	1000 pieces	461,669.34	10,273,376.00	–	4,086.35	11,498,573.73	238,304.87	8,736,676.76
11.	324-10	TV&radio receivers, etc.	–	–	–	–	–	–	–	–
12.	341-10	Motor vehicles	Units	10,826.00	104.00	–	10,453.00	0.00	0.00	7,413.00
13.	343-10	Parts for automobiles	Units	442,744.00	1,834,702.00	–	71,536.00	355,967.00	2,506.00	109,115.34

Table 2-22   Reference: Production Value by Sector for January 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.		7,371,600.70	4,558,202.29	4,779,116.88	436,973,783.42	658,060.31	5,094.35	5,415,772.52
2.	155-10	Beverages		1,452,739,191.18	1,041,184.21	–	1,110,564,279.47	0.00	8,786,225.67	636,249.10
3.	160-10	Tobacco		1,469,277,444.17	928,822,015.96	–	1,310,203,168.13	676,225,918.30	0.00	970,536,235,337.44
4.	181-10/20	Garments								
5.	232-10	Refined petroleum		3,054,070.42	30,222.92	82,327.77	2,487,282.86	321,043.30	0.00	1,643,531.51
6.	242-10	Chemical products		131,917,477.68	641,388,386.11	2,171,079.57	751,923,759.89	147,503,337.46	1,751.06	95,678,589,328.47
7.	262-10	Cements	1000 pesos	627,041.70	5,561.87	243,461.03	368,813.63	0.00	0.00	186,339.06
8.	271-10	Iron and steel		878,619.31	276.15	0.00	334,448.91	80.21	452,971.62	511,943.64
9.	321-10	Electric valves, TV transmitters		4,609,787.05	5,760,418.92	–	3,744,625.76	1,280.70	0.00	2,016,819.48
10.	322-10	Semi-conductors		27,959,336.52	2,200,840.52	–	236,166.24	19,592,810,209.62	25,245.05	41,912,173,103.93
11.	324-10	TV&radio receivers, etc.		598,158.82	0.00	–	150,265.86	395,955.64	19,193.00	149,956.36
12.	341-10	Motor vehicles		4,049,802.00	478,111.17	–	3,748,152.05	467.23	11,910.00	3,619,089.55
13.	343-10	Parts for automobiles		747,859.80	72,033.41		521,763.01	188,216.76	1,592.98	214,024.12
	Total			3,103,830,389.36	1,584,357,253.52	7,275,985.25	3,621,256,509.22	20,418,104,569.54	9,303,983.72	1,108,141,391,495.18

Table 2-23 Reference: Production Value by Sector for February 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.		4,165,976.90	315,439.09	6,078.24	3,674,391.45	659,846.90	3,254.30	2,256,092.25
2.	155-10	Beverages		1,455,474,202.85	251,946.46	–	1,156,204,981.89	0.00	178,532.72	288,259,291.58
3.	160-10	Tobacco		3,342,072.00	0.00	–	2,856,354.66	9,550.11	0.00	9,455,214.58
4.	181-10/20	Garments								
5.	232-10	Refined petroleum		2,587,088.44	374,783.27	32,438.38	2,371,960.21	226,237.30	0.00	1,134,973.82
6.	242-10	Chemical products		666,702.77	81,828.17	0.00	1,212,411.88	31,416.67	0.00	1,484,531.82
7.	262-10	Cements	1000 pesos	209,806.69	3,742.23	25,249.50	195,650.10	569.03	0.26	34,512.97
8.	271-10	Iron and steel		1,691,666.63	431,499.23	2.00	512,953.91	424,033.46	460,417.69	1,457,411.90
9.	321-10	Electric valves, TV transmitters		3,640,430.85	5,069,891.33	–	3,048,652.31	51,090.92	0.00	7,630,426.02
10.	322-10	Semi-conductors		1,366,572.76	2,242,803.19	–	113,820,167.03	17,953,374.24	707,274.93	785,519.60
11.	324-10	TV&radio receivers, etc.		979,211.76	0.00	–	59,209.79	5,489,417.68	35,843.00	17,942,164.07
12.	341-10	Motor vehicles		4,823,926.00	2,137,251.28	–	4,687,362.80	0.00	79,254.15	4,241,200.08
13.	343-10	Parts for automobiles		749,533.71	11,883.85	–	491,373.83	234,641.45	2,763.12	291,838.16
	Total			1,479,697,191.36	10,921,068.09	63,768.11	1,289,135,469.86	25,080,177.77	1,467,340.16	334,973,176.85

Table 2-24　Reference: Production Value by Sector for March 2001

	Questionnaire Number	Sector Name	Unit	Production	Purchased/ Received	Internal Consumption	(Shipment) Domestic Sales	(Shipment) Export	(Shipment) Others	Month-end Inventory
				(A)	(B)	(X)	(C)	(D)	(E)	(F)
1.	151-10	Meat,fish,fruit etc.		14,223,959.11	392,847.29	816,109.44	7,956,730.36	5,567,205.34	53,763.54	3,831,545.41
2.	155-10	Beverages		2,038,832,418.80	86,522.16	–	1,906,443,912.35	0.00	8,379.32	436,562,107.37
3.	160-10	Tobacco		1,118,814.00	0.00	–	1,788,154.04	12,712.84	0.00	389,481.03
4.	181-10/20	Garments								
5.	232-10	Refined petroleum		2,531,933.97	150,849.88	32,191.26	2,376,281.65	294,697.90	0.00	1,132,318.66
6.	242-10	Chemical products		31,965,589.65	584,030.77	492,148.76	123,801,519.24	29,469,997.27	0.00	72,652,734.33
7.	262-10	Cements	1000 pesos	504,431.00	5,569.42	133,550.73	371,293.71	0.00	1.60	43,699.71
8.	271-10	Iron and steel		78,859,791.88	99,953.18	2.00	795,536.17	398,775.88	232,160.39	2,777,157.10
9.	321-10	Electric valves, TV transmitters		4,242,000.00	4,766,292.13	–	3,527,056.18	0.00	0.00	10,462,011.24
10.	322-10	Semi-conductors		962,390.77	0.00	–	175,886.02	715,931.20	27,188.77	313,888.31
11.	324-10	TV&radio receivers, etc.		455,058.00	0.00	–	106,595.65	303,002.77	28,042.00	72,651.09
12.	341-10	Motor vehicles		5,007,281.32	47,956.48	–	4,996,112.31	0.00	0.00	3,403,377.18
13.	343-10	Parts for automobiles		562,360.81	2,663,372.96	–	444,428.70	88,123.58	3,130.01	290,189.41
		Total		2,179,266,029.31	8,797,394.27	1,474,002.20	2,052,783,506.39	36,850,446.77	352,665.64	531,931,160.83

(2) Time series analysis

Production volume data on each sector are compared over the three months, and all the sectors are classified into those with significant fluctuation and those with moderate variation. The sectors showing significant fluctuation are analyzed to identify a major cause.

- Production volume (The sectors "155-10", "232-10" and "324-10" are not included in sector-wise tabulation due to different units of measurement for the commodities in each sector.)

- Sector showing moderate change (Within -50% to +100% over the previous month.)

Sectors	Production volume (Increase/decrease over the previous month)	
	February	March
- 151-10 (Meat, fish, fruit)	43.2%	41.6%
- 160-10 (Tobacco)	-12.1%	-11.1%
- 242-10 (Chemical products)	-2.1%	92.3%
- 271-10 (Iron and steel)	-16.9%	-15.9%
- 322-10 (Semi-conductors)	-11.0%	-7.9%
- 341-10 (Motor vehicles)	17.5%	9.3%
- 343-10 (Parts for automobiles)	-38.3%	4.0%

- Sectors showing significant fluctuation (More than -50% or + 100% over the previous month.)

Sectors	Production volume (Increase/decrease over the previous month)	
	February	March
- 181-10/20 (Garments)	-40.8%	-69.0%
- 262-10 (Cements)	-27.1%	-70.6%
- 321-10 (Electric valves, etc)	96.1%	-97.1%

- Factors for significant variation

For the sector "181-10/20: Garments", which production volume in February was -40.8% compared to January and that in March -69.0% to February. This is because, while the collection rate was fairly high at 81% in February and 78% in March, the effective response rate (including no-data entry) remained relatively low at 72.6% in February and 58.0% in March respectively.

For the sector "262-10: Cements", the monthly changing rate in March fell sharply to -70.6% largely due to the low collection rate (50.0%) compared to 66.6% in January and February. As this sector covers only six establishments, the low collection rate largely affects the tabulation result.

For the sector "321-10: Electric valves, etc", a large decline in production volume in March reflects the fact that there is an establishment with much larger production than others, which responded in January and February only, and their production volume reported for February was twice that for January, followed by no response in March, to result in the significant fluctuation over the three months.

- Summary of time series analysis

Time series analysis of production volume data revealed that some sectors showed significant fluctuation over the months. Generally, two causes have been identified, as follows.

- Variation in response rate between individual survey items

Detailed analysis indicates that some survey items show varying response rates among establishments over the three months, while no significant variation is observed in the collection rate for the respective sector (= questionnaire) or in the section response rate. This is particularly strong for sectors with a relative small number of sample establishments, where response by a single establishment often has large impacts.

- Large variation in data reported by a specific establishment (or non-response in a specific month)

Data reported by some establishments increased or decreased significantly, as much as 100 times, and they have large impacts on the overall data. While these cases may include a number of entry errors, careful examination should be carried out

by comparing the reported data with relevant data, such as unit price, production capacity and the size of establishment, and by making a follow-up contract to the establishment in order to obtain accurate data.

At the same time, corrective measures should be introduced to minimize a risk of entry error, including continuous education of enumerators to provide proper instruction to establishments, carefully check the questionnaire upon collection and make a follow-up inquiry whenever they have doubt. Also, a collection and examination system should be reviewed and modified to ensure systematic and efficient data check at the NSO headquarters according to standard procedures.

(3) Comparison with data published by industrial associations
  1) Sector "160-10: Tobacco"
      "MDRD-Marketing Trends" publishes tobacco production data, which are summarized as follows, for comparison with data tabulated from the pretest survey results.

Table 2-25   Comparison of Tobacco Production Data Published by "MDRD-Marketing Trends" and Pretest Survey Data

	Term of survey	Production volume (cigar & cigarette)
Pretest survey	January 2001 (N=5)	716,501 Cartons
	February 2001 (N=3)	630,133 Cartons
	March 2001 (N=3)	560,747 Cartons
MDRD-Marketing Trends	Annual average production between 1996−2000 (based on monthly production)	68,157,000 Kg (= 300,572,000 Cartons)/Year* 25,047,666 Cartons/Month

* The conversion rate from raw materials to finished products is 4.41 Carton/Kg (85 Mega kg = 75 Billion sticks → 200 Sticks/Carton).

N: Number of effective response from sample establishments.

Clearly, there is a significant difference between the two data sets. Possible causes are summarized as follows.
  • Entry error on data reported by establishments, including the incorrect unit of measurement.

- The pretest survey did not cover large establishments, particularly foreign establishments, which are included in data published by industrial associations.
- Use of an inappropriate conversion rate from raw materials to finished products.

Overall, it is imperative to deepen the understanding of the tobacco industry, including the industrial structure and market share by local and foreign products, and reflect it in selection of sample establishments and questionnaire design.

2) Sector "232-10: Refined petroleum"

Refined petroleum production data published by the Department of Energy (DOE) of the Philippines on June 22, 2001, are compared with the pretest survey data as follows.

Table 2-26   Comparison of Refined Petroleum Production Data Published by Department of Energy and Pretest Survey Data

		Production volume		
		Gasoline*1 (Kilo liter)*2	Kerosene (Kilo liter)*2	Naphtha (Kilo liter)*2
Pretest	Jan. 2001	99,791	37,216	40,429
survey	Feb. 2001	100,963	40,353	26,618
(N=4)	Mar. 2001	106,620	27,562	34,755
DOE	2000	2,748,792 (152,711)*	666,359 (37,021)*	1,027,617 (57,090)*
(N=6)	1999	3,227,223 (179,290)*	727,584 (40,421)*	673,842 (37,436)*

* Figures in ( ) were estimated from the following formula for comparison with the pretest survey data: annual production volume/12 months *(4/6).

*1 Gasoline data obtained from the pretest survey include both regular and high octane, while DOE data are a total of premium leaded, unleaded, and regular gasoline.

*2 1 Barrel = 0.159 Kilo liter.

N: Number of effective response from sample establishments.

Comparison of the pretest survey data and DOE data indicates that their differences appear to be generally within a reasonably expected range for all the three commodities.   This is because the sector consists of a small number of large companies, which report similar data for other statistical surveys including those by the industrial association.   Nevertheless, a number of commodity names and units

of measurement used in other published data are different from those used in the pretest questionnaire. Thus, the future questionnaire will be supposed to reflect the situation for standardization. Overall, data reported by the industry involve a relatively few data errors and can be relied on in the future survey.

3) Sector "262-10: Cement"

The Philippine Cement Manufacturers Corporation (PCMC) conducts annual surveys covering 18 cement manufacturers in the country and publish data as the report entitled "Cement Industry in the Philippines". Production and shipment data published by PCMC are compared with those tabulated from the pretest survey results as follows.

Table 2-27　Comparison of Cement Production Data Published
by PCMC and Pretest Survey Data

(Unit: Tons)

	Production volume (Cement & Clinker)		Shipment volume (Cement only)	
	Quarterly total	Monthly (Min-Max)	Quarterly total	Monthly (Min-Max)
Pretest survey data (N=Jan 4, Feb. 4, Mar. 3)	8,764,508 *1	1,681,242 – 4,094,928 *3	4,468,690	1,116,798 – 1,761,016 *3
PCMC (N=18)	5,779,750 *2	1,926,583 (Monthly average) *4	2,955,249	985,083 (Monthly average) *4

*　The figures are dated Jan – Mar 2001 for the pretest survey, and Jan - Dec 2000 for PCMC published data.

*1　As the number of establishments that responded to the pretest survey varied over the three months (4 in January, 4 in February, and 3 in March), the total volume is estimated by using the following formula:

Three-month total = January data * (18/4) + February data * (18/4) + March data * (18/3)

*2　As the PCMC's data is on the annual basis, it is converted to three-month (quarterly) data by using the following formula:

Three-month total = Annual data/4

*3　Minimum and maximum figures for January * (18/4), February * (18/4), and March * (18/3).

*4　As the PCMC's data is on the annual basis, it is converted to monthly data by using the following formula:

Monthly total = Annual data/12

N: Number of effective response from sample establishments.

Comparison of the pretest survey data and PCMC data indicates that the former is 50% larger than the latter in terms of quarterly total quantities of both production and shipment. This is partly because the pretest survey primarily covered relatively large establishments in terms of employment.

On a monthly basis, the minimum level of the pretest survey data agrees with the monthly average level of PCMC data, due to the same reason for the difference in quarterly data.

Overall, data on the cement industry do not contain very significant errors and are relatively consistent.

4) Sector "271-10: Iron and steel"

Iron and steel production data published in "SEAISI Steel Statistical Yearbook 1999" are summarized as follows, for comparison with the data obtained from the pretest survey results.

The coverage of this sector under the pretest survey reaches 74% for 45 sample establishments (the pre-qualified establishment base).

Table 2-28   Comparison of Iron and Steel Production Data by SEAISI and Pretest Survey Data

		Production volume		
		Steel bar (Ton)	Wire rods (Ton)	Galvanized sheets (Ton)
Pretest survey	Jan. 2001	10,089	99	11,971
(N=Jan 17, Feb. 18,	Feb. 2001	6,155	103	11,320
Mar. 16)	Mar. 2001	8,585	128	1,904
SEAISI (Annual base)	1999	1,160,000 (27,023)*	10,000 (232)*	182,000 (4,239)*

* The figures in ( ) were calculated by the following formula for comparison with the pretest survey data: annual total volume/12 months * (17/45) * (74/100).

N: Number of effective response from sample establishments.

Comparison of the two sets of data on three commodities indicates that the pretest survey data ranges one third to twice those in the yearbook data. The relatively low response rate (effective response base) and a variety of products made by different establishments seem to cause such data variation.   While the iron and steel

industry is considered as a reliable data source with less data errors, data accuracy should be improved further by encouraging more establishments to participate in the survey.

5) Sector "341-10: Motor vehicles"

The Chamber of Automotive Manufactures of the Phils. Inc. (CAMPI) compiles shipment data in the country and provides it to its members. Shipment data published by CAMPI are compared with those tabulated from the pretest survey results as follows.

Table 2-29 Comparison of Motor Vehicle Shipment Data Published by CAMPI and Pretest Survey Data

(Unit: Units)

| | | Unit shipment | | |
		Passenger cars	Commercial vehicles	Total
Pretest survey data	Jan. 2001	1,344	6,764	8,108
(N=10)	Feb. 2001	898	9,009	9,907
	Mar. 2001	1,443	9,010	10,453
CAMPI	1999	27,580 (2,068)*	46,834 (3,512)*	74,414 (5,580)*
(N=18)	1998	34,688 (2,601)*	45,543 (3,415)*	80,231 (6,016)*
	1997	75,760 (5,682)*	68,675 (5,150)*	144,435 (10,832)*

*   The figures in ( ) were estimated by the following formula: total number of units per year/12 months * 0.9).

-- This is because Japanese companies account for around 90% of both passenger cars and commercial vehicles shipped in the country, and most of them responded to the pretest survey.

N: Number of effective response from sample establishments.

Comparing the pretest survey data and the CAMPI data indicates that the former falls short of the latter in the number of passenger cars, while the relationship is reversed for commercial vehicles. Total unit shipment obtained from the preset survey is more or less the same or slightly larger than the CAMPI data. Reasons for the data discrepancies of passenger cars and commercial vehicles have not been found out yet. There might be some affects by the seasonal factors.

In this sector, serious entry errors can be avoided due to simplicity in commodity classification, and so this sector is considered as reliable one for statistical data collection. Also, Japanese companies that hold 90% share have been cooperative and are expected to cooperate in the future CSP.

2.7.3 Conclusion

Analysis of the tabulation results has revealed various problems that cannot be identified in examination of individual questionnaire form separately. In particular, time series analysis has allowed us to identify sections and survey items that show a significant difference compared with the previous month and to obtain more reliable data. This way, data correction has been made in a systematic way to improve data accuracy. Thus, the pilot test should include the data examination process after the data input/tabulation stage.

At the same time, comparison of data published by industrial associations has shown that the pretest survey collected relatively reliable data for some of the target sectors. However, in the pretest survey, comparison of sample establishments with lists of member companies of relative major industrial associations was not done. When finalizing the sample establishment list for the future CSP, this comparison work will be indispensable in order to surely avoid missing of major (large-scale) establishments. This work will never fail to help grasping more reliable actual figures for the monthly industrial statistics

Efforts should be made to obtain accurate data continuously from the same sample establishments, as evidenced from the need for compilation of the pretest survey data in order to make them compatible with other published data. For the pilot test, therefore, it is recommended to address the following problems:

• **Variation in entry items over the surveyed months**

Some establishments responded to different items in different months, resulting in data discontinuity in some items. For instance, inventory volume or production value is entered in the questionnaire form for a specific month, or the value of production is entered for a specific item but not the volume of production. Such irregularity in data entry can be prevented by issuing proper instructions to enumerators and examiners, including continuous education and training.

• **Variation in collection rate over the reference months**

Analysis revealed that some sectors showed a higher collection rate over the three months, while the collection rate for other sectors declined. For the former group, data accuracy can be improved by raising the collection rate for the earlier months through follow-up contracts.

• **Variation in data entry over the reference months**

It was relatively frequently observed that the same establishment reported the value of production by different digits, which often caused incorrect data entries. Questionnaire design should be modified to encourage a consistent style of entry, taking into account the relevant factors peculiar to establishments and products in each sector.

Similarly, some establishments entered data based on different unit prices in three months, resulting in ups and downs at around 30%. There are various reasons for change in unit price, such as different products under the same category made by the establishment, and some establishments may reflect fluctuation of material costs in their production value. Follow-up studies will be required to identify reasons and to check if or not the reported data are accurate.

Finally, the results of the pretest survey indicate the need for education and training for enumerators who serve as a follow-up contact point with sample establishments, modification of questionnaire design and the upgrading of the input and examination process including expansion of organization and resources.