

JAPAN INTERNATIONAL COOPERATION AGENCY

THE MINISTRY OF INDUSTRY AND TRADE
THE REPUBLIC OF INDONESIA

THE FOLLOW-UP STUDY
ON
THE DEVELOPMENT OF SUPPORTING INDUSTRIES
IN
THE REPUBLIC OF INDONESIA

MAIN REPORT

June 1999

THE JAPAN RESEARCH INSTITUTE, LIMITED
YACHIYO ENGINEERING CO., LTD.

PREFACE

The Government of Japan decided to conduct a follow-up study to the Study on the Development of Supporting Industries in the Republic of Indonesia, which was originally conducted from January 1996 to March 1997 in response to a request from the Government of the Republic of Indonesia, and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent a study team, led by Mr. Takashi Nobehara of the Japan Research Institute, Limited and constituted by members of the Japan Research Institute, Limited and Yachiyo Engineering Co., Ltd., to the Republic of Indonesia two times from December 1998 to March 1999.

The team held discussions with the officials concerned of the Republic of Indonesia, and conducted related field surveys. After returning to Japan, the team conducted further studies and compiled the final results in this report.

I hope this report will contribute to the development of supporting industries in the Republic of Indonesia and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Indonesia for their close cooperation throughout the study.

June 1999

A handwritten signature in black ink, reading "Kimio Fujita", written in a cursive style. The signature is positioned above a solid horizontal line.

Kimio Fujita
President
Japan International Cooperation Agency

June, 1999

Mr. Kimio Fujita
President
Japan International Cooperation Agency

Letter of Transmittal

We are pleased to submit the final report on the Follow-up Study on the Development of Supporting Industries in the Republic of Indonesia.

The Study was implemented as a follow-up to the original Study on the Development of Supporting Industries in the Republic of Indonesia, conducted between January, 1996 and March, 1997. Almost immediately after the completion of the first Study, the Indonesian economy was faced with a serious economic crisis, due to the effects of the currency crisis that beset many Asian countries. The impact on the Indonesian industrial machinery parts and components, automotive parts and components and the electrical and electronic parts and components industries, all of which had been the direct focus of attention of the original Study, was particularly severe, and there were many businesses that were either forced to cease operations temporarily, or to reduce operations to 20% or lower than normal. Of 334 companies that responded to a questionnaire survey, the average operating level following the economic crisis was 46% of capacity. In addition to very severe economic conditions at home, the Indonesian parts and components industries also face another tough test, in the form of fierce international competition due to the lowering of the common effective preferential tariff rates in the ASEAN Free Trade Area (AFTA).

In this Study, given the dramatic changes in the domestic and overseas environments surrounding the Indonesian supporting industries, we restructured the development strategies for each industry, and formulated a master-plan which contains a synthesis of the individual strategies proposed for each industry. Additionally, the Study also sets out five action programs from the perspective of reinforcing public supports in the three areas of (a) management skill, (b) marketing and (c) financing, all of which are pressing issues at this stage.

The details of the Study Team's proposals have been fully discussed at the seminar to which representatives of the Indonesian government and private sector

industry were invited, and expectation and enthusiasm were expressed with respect to the implementation of these proposals. The entire membership of the Study Team share the hope that, with the effort of the Indonesian government and the cooperation of related Japanese organizations, the programs will be able to be implemented as quickly as possible, and contribute to the Indonesian industrial development.

In closing, allow me to express my gratitude at the most valuable guidance and support so generously provided by the Japan International Cooperation Agency, the Ministry for Foreign Affairs, Ministry for International Trade and Industry, and other related organizations. Our warmest thanks also go to the Ministry of Industry and Trade and other related governmental organizations of the Republic of Indonesia, for their cooperation and support.

Sincerely yours,

A handwritten signature in black ink, appearing to be 'Takashi Nobehara', written in a cursive style.

Takashi Nobehara
Team Leader
JICA Follow-up Study Team
on the Development of the Supporting Industries
in the Republic of Indonesia

TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF FIGURES.....	iv
LIST OF TABLES	vii
LIST OF APPENDIXES.....	xii
LIST OF ACRONYMS AND ABBREVIATIONS	xiii
CHAPTER I. OUTLINE OF THE STUDY.....	1-1
1. Background and Objective	1-1
1.1 Background	1-1
1.2 Objective	1-1
1.3 Subject Industries	1-2
2. Major Recommendations Made by the Previous Study	1-3
2.1 Basic Policy	1-3
2.2 Basic Strategies	1-3
2.3 Overall Development Strategies and Action Programs.....	1-5
3. Scope of Work for the Follow-up Study	1-8
3.1 Study Framework	1-8
3.2 Study Items	1-10
4. Methodology	1-11
4.1 Field Interview Survey	1-11
4.2 Questionnaire Survey in Indonesia.....	1-12
CHAPTER II. PRESENT SITUATION OF THE INDONESIAN ECONOMY.....	2-1
1. The Economic Crisis in Indonesia	2-1
1.1 Background of the Economic Crisis.....	2-1
1.2 Inception of the Monetary Crisis in Indonesia	2-3
1.3 Factors Deepening the Economic Crisis.....	2-4
2. Economic Reform Programs.....	2-7
2.1 Background to the Structural Reforms Led by the IMF	2-7
2.2 Implementation of Economic Structural Reforms	2-10
3. Macro Economic Trends	2-13
3.1 Economic Situation in 1997	2-13
3.2 Economic Situation in 1998	2-14
3.3 Economic Situation in 1999	2-15
4. The Current Situation in the Manufacturing Industry	2-17
4.1 Special Characteristics of Industrialization.....	2-17
4.2 Recent Trend in Production.....	2-17
4.3 Structure of Industrial Sector	2-19
4.4 Impact of Economic Crisis on the Supporting Industries.....	2-21

CHAPTER III. PRESENT SITUATION OF SYSTEMS AND POLICIES RELATING TO THE DEVELOPMENT OF THE SUPPORTING INDUSTRIES	3-1
1. Industrial Development Policies	3-1
1.1 Current Situation of Industrial Policies	3-1
1.2 Policies for the Machinery Industry	3-4
1.3 Policies for the Automotive Industry.....	3-6
1.4 Policies for the Electric and Electronic Industry	3-8
1.5 Policies for the Development of the Small and Medium Sized Industries	3-11
2. Financial System and Policies.....	3-17
2.1 Present Situation of Financial System.....	3-17
2.2 Financial Policy of Indonesia	3-25
2.3 Current Situation and Problems in Corporate Financing	3-33
2.4 Problem Areas of Supporting Industries in Fund Raising	3-34
3. Export Promotion Policies	3-43
3.1 Current Export Tendency in Indonesia	3-43
3.2 Major Problems in Indonesian Exports and Countermeasures	3-61
 CHAPTER IV. PRESENT SITUATION OF THE PARTS AND COMPONENTS INDUSTRY IN INDONESIA.....	 4-1
1. Machinery Parts and Components Industry	4-1
1.1 Present Situation of the Machinery Industry	4-1
1.2 Present Situation of the Parts and Components Industry	4-23
1.3 Problems and Necessary Improvement Measures in the Machinery Parts and Components Industry	4-37
1.4 Macro Framework for Future Development.....	4-43
2. Automotive Parts and Components Industry.....	4-49
2.1 Present Situation of the Automotive Industry	4-49
2.2 Present Situation of the Parts and Components Industry	4-60
2.3 Major Problems of the Automotive Parts and Components Manufacturers and Measures to Be Taken	4-73
2.4 Macro Framework for Future Development	4-86
3. Electric and Electronic Parts and Components Industry	4-93
3.1 Present Situation of Electric and Electronic Assemblers	4-93
3.2 Present Situation of Electric and Electronic Parts and Components Manufacturers	4-105
3.3 Issues and Required Improvements in the Electric and Electronic Parts and Components Industry	4-122
3.4 Macro Framework for Future Development.....	4-131

CHAPTER V. OVERVIEW OF THE ASIAN MARKET	5-1
1. Japanes Market.....	5-1
1.1 Trends of the Assembly Industry in 1999.....	5-1
1.2 Current Status of the Automotive Parts and Components Industry.....	5-3
1.3 Current Status of the Household Electric and Electronic Parts and Components Industry.....	5-10
1.4 Current Status of the Agricultural Machinery Industry	5-14
1.5 Current Status of the Metal Materials Processing Industry	5-16
2. Other Asian Market	5-22
2.1 Automobile Market in Asia	5-22
2.2 Electric and Electronics Market in Asia	5-25
2.3 Response of Japanese Affiliated Companies Following the Currency Crisis ..	5-33
2.4 The Parts and Components Industry in Asia	5-40
 CHAPTER VI. OVERALL DEVELOPMENT STRATEGIES FOR THE SUPPORTING INDUSTRIES.....	 6-1
1. Problems of the Supporting Industries in Indonesia.....	6-1
1.1 Short-term Problems.....	6-1
1.2 Medium and Long-term Problems.....	6-2
2. Basic Policy for the Development of the Supporting Industries	6-4
2.1 Principles for the Development.....	6-4
2.2 Development Approaches	6-5
3. Overall Development Measures for the Supporting Industries	6-8
 CHAPTER VII. ACTION PROGRAMS	 7-1
1. Selection of Action Programs.....	7-1
2. Contents of the Proposed Action Programs	7-4
2.1 Establishment of Export Promotion Master Plan.....	7-4
2.2 Establishment of Model Industrial Service Center (ISO).....	7-7
2.3 Supporting Industry Development Fair	7-16
2.4 Management Skill Development Program	7-20
2.5 Supporting and Export Oriented Small and Medium Industries International Competitiveness Strengthening Program – Two Step Loan (TSL).....	7-28

REFERENCE

LIST OF FIGURES

Figure	Description	Page
Chapter I		
Fig. 1-2-1	Basic Strategies for the Development of the Supporting Industries	1-4
Fig. 1-3-1	Overall Framework of the Study.....	1-9
Fig. 1-4-1	Work Schedule of the Study	1-13
Chapter II		
Fig. 2-1-1	Movement of the Rupiah against the Dollar	2-6
Fig. 2-3-1	Growth Rate of GDP and the Industrial Sector (Year on Year Basis).....	2-16
Fig. 2-4-1	Growth Rate of Value Added in the Manufacturing Industry (Year on Year Basis).....	2-18
Fig. 2-4-2	Changes in Quarterly Production Indices for Large and Medium Sized Companies (Year on Year Basis).....	2-18
Fig. 2-4-3	Breakdown of Manufacturing Industry Added Value by Sector.....	2-19
Fig. 2-4-4	Distribution of Operating Ratios Before and After Economic Crisis	2-27
Fig. 2-4-5	Total Number of Employees Before and After the Economic Crisis..... (161 Companies).....	2-30
Fig. 2-4-6	Necessity of Development Programs for the Small and Medium Industries (SMIs) by the Government.....	2-34
Chapter III		
Fig. 3-2-1	Share of Deposits, Credits and Assets of the Commercial Banks by Size of Banks as of March 1998	3-18
Fig. 3-2-2	Business Activities of Finance Companies in 1997.....	3-19
Fig. 3-2-3	Trends in Interest Rate of SBI 28 Days.....	3-22
Fig. 3-2-4	Need for Fund Raising	3-35
Fig. 3-2-5	Use of Working Capital	3-36
Fig. 3-2-6	Use of Investment Funds.....	3-36
Fig. 3-2-7	Problem Areas in Fund Raising	3-37
Fig. 3-2-8	Amount of Funds to Be Raised (Working Capital)	3-38
Fig. 3-2-9	Amounts of Funds to be Raised (Investment Funds).....	3-38
Fig. 3-2-10	Amount of Funds to Be Raised for Working Capital (On Average).....	3-39
Fig. 3-2-11	Amount of Funds to be Raised for Working Capital	3-39
Fig. 3-2-12	Amount of Funds to be Raised for Investment by Size of Company and by Type of Industry	3-40
Fig. 3-2-13	Amount of Funds to be Raised for Investment by Exporting Companies and Non-exporting Companies	3-40

Chapter IV

Fig. 4-2-1	Sales of Motorcycles.....	4-50
Fig. 4-2-2	Production of Motorcycles.....	4-52
Fig. 4-2-3	Export of Cars (1991-1998).....	4-53
Fig. 4-2-4	Export of Cars in 1998.....	4-58
Fig. 4-2-5	Market Forecast of Cars (1999-2003).....	4-59
Fig. 4-2-6	Change in Situation of GIAMM Members	4-66
Fig. 4-3-1	Production Trends for Electric and Electronic Products in Indonesia	4-96
Fig. 4-3-2	Export Trends for Electric and Electronic Goods in Indonesia	4-97
Fig. 4-3-3	The Effects of the Currency and Economic Crisis on Household Electric Appliance Manufactures (Company S)	4-100
Fig. 4-3-4	Production Flow of Electric and Electronic Parts and Components in Indonesia.....	4-107
Fig. 4-3-5	Export and Import Figures for Electric and Electronic Parts and Components	4-109
Fig. 4-3-6	Image Drawing of the Structure of the Electric and Electronic Parts and Component Industry.....	4-110
Fig. 4-3-7	Model for Fostering the Electric and Electronic Parts Industry.....	4-112

Chapter V

Fig. 5-1-1	Production Structure of the Japanese Automobile Industry.....	5-3
Fig. 5-1-2	Repair Parts Distribution Channels.....	5-9
Fig. 5-1-3	Subcontract Specialization Structure in Consumer Electrical and Electronic Appliances Industry	5-11
Fig. 5-1-4	Agricultural Machinery Sales Channels.....	5-16
Fig. 5-1-5	Production of Pig Iron Castings by Purpose of Use.....	5-18
Fig. 5-1-6	Die Production	5-19
Fig. 5-1-7	Die Production and Exports.....	5-20
Fig. 5-2-1	Projected Production Capacity of Asian Countries.....	5-23

Chapter VI

Fig. 6-2-1	Concept of the Approaches for the Development of the Supporting Industries.....	6-7
Fig. 6-3-1	Flow of Technical Assistance	6-26

Chapter VII

Fig. 7-1-1	Selection of Action Programs	7-3
Fig. 7-2-2	Current Organizational Structure of CSF in Sukabumi	7-13
Fig. 7-2-3	Implementation Schedule of Model ISC Establishment Program	7-15
Fig. 7-2-4	Implementation Schedule for Extension Workers Revitalization Program.....	7-23
Fig. 7-2-5	Implementation Schedule for Expansion of Training Programs	7-27
Fig. 7-2-6	Organization of TSST	7-35
Fig. 7-2-7	Concept of Supporting Industry and Export Oriented SMI International Competitiveness Strengthening Program.....	7-38

LIST OF TABLES

Table	Description	Page
Chapter I		
Table 1-2-1	Overall Development Policies for the Development of the Supporting Industries in Indonesia	1-5
Table 1-4-1	Number of Companies and Organizations Visited in the Field Survey	1-11
Table 1-4-2	Results of a Trace Survey.....	1-12
Chapter II		
Table 2-4-1	Size of Related Industries and their Share of the Total Manufacturing Industry (1996).....	2-20
Table 2-4-2	Evaluation of Impact of Economic Crisis	2-21
Table 2-4-3	Evaluation of Impact of Economic Crisis on Domestic Sales	2-22
Table 2-4-4	Ratio of Decrease in Domestic Sales	2-22
Table 2-4-5	Ratio of Increase in Domestic Sales	2-23
Table 2-4-6	Experience of Exports.....	2-24
Table 2-4-7	Evaluation of Impact of Current Economic Crisis on Exports	2-24
Table 2-4-8	Ratio of Decrease in Exports	2-24
Table 2-4-9	Ratio of Increase in Exports.....	2-25
Table 2-4-10	Evaluation of Impact of Current Economic Crisis on Profits	2-25
Table 2-4-11	Ratio of Decrease in Profits	2-26
Table 2-4-12	Ratio of Increase in Profits.....	2-26
Table 2-4-13	Number of Companies Which Have Received Positive Effect of the Economic Crisis	2-26
Table 2-4-14	Operating Ratios Before and After Economic Crisis.....	2-27
Table 2-4-15	Measures Taken to Overcome Impact of Economic Crisis	2-29
Table 2-4-16	Number of Employees Before and After Reduction (161 companies)	2-29
Table 2-4-17	Necessity of Financial Support from the Government.....	2-31
Table 2-4-18	Necessity of Export Promotion Support from the Government.....	2-32
Table 2-4-19	Necessity of Development Programs for the Small and Medium Industries (SMIs) by the Government.....	2-33
Chapter III		
Table 3-1-1	Priority Products in the Small Metal, Machinery and Electronics Industries.....	3-12
Table 3-2-1	Total Assets Outstanding by Type of Banks as of March 1998.....	3-17
Table 3-2-2	Number of Banks and Offices by Type of Banks as of March 1998.....	3-18
Table 3-2-3	Business Activities of Venture Capital Firms in 1997.....	3-19

Table 3-2-4	Commercial Banks' Credit Outstanding in Rupia and Foreign Exchange by Economic Sector	3-20
Table 3-2-5	Commercial Banks' Funds and Foreign Exchange.....	3-24
Table 3-2-6	Interest Rates of three Month Rupiah Time Deposits by Group of Banks	3-25
Table 3-2-7	Number of Commercial Banks under Supervision of Bank Indonesia and IBRA as of March 1998	3-28
Table 3-3-1	Exports of Non-oil and Gas Industrial Products by Industry	3-43
Table 3-3-2	Industries and Products of Rapid Growth in Exports	3-45
Table 3-3-3	Comparison of Export of Non-oil and Gas Industrial Products (1995 - 1998).....	3-46
Table 3-3-4	Growth Tendency of Export of Non-oil and Gas Industrial Products (1993 - 1998).....	3-47
Table 3-3-5	Industries and Products Which Showed Fast Export Growth.....	3-47
Table 3-3-6	Industries and Products Which Do Not Show Export Growth	3-47
Table 3-3-7	Export Records of Small-Scale Industries	3-51
Table 3-3-8	Change in Export Amount of Small-Scale Industries (1997 and 1998)	3-53
Table 3-3-9	Trends in Export and Import of Products Related to the Study	3-54
Table 3-3-10	List of Export Increase Items	3-55
Table 3-3-11	List of Export Stagnant Items	3-55
Table 3-3-12	Effect of Economic Crisis on Exports (By type of capital).....	3-56
Table 3-3-13	Effect of Economic Crisis on Exports by Size of Companies	3-57
Table 3-3-14	Problem of Export Promotion.....	3-58
Table 3-3-15	Evaluation of Export Promotion Support Measures (For Total Companies)	3-59
Table 3-3-16	Evaluation of Export Promotion Support Measures (For Companies with Employees of 19 or Less).....	3-60
 Chapter IV		
Table 4-1-1	Production Value of Machinery Industry by Type of Industry	4-6
Table 4-1-2	Performance of Machinery Industry by Type of Product	4-7
Table 4-1-3	Trend of Machinery Exports	4-9
Table 4-1-4	Machinery Exports to Japan.....	4-10
Table 4-1-5	Trend of Machinery Imports	4-11
Table 4-1-6	Machinery Imports from Japan	4-11
Table 4-1-7	Trend of Investment by Machinery & Engineering Industry	4-15
Table 4-1-8	Investments by Type of Industry	4-16
Table 4-1-9	Location of New Investments	4-17
Table 4-1-10	Members of Federation of Associations of Indonesian Metalwork and Machinery Industries.....	4-23

Table 4-1-11	Regional Distribution of Respondent Companies.....	4-28
Table 4-1-12	Respondent Companies by Size of Employees.....	4-28
Table 4-1-13	Impact of Economic Crisis on Company Business.....	4-29
Table 4-1-14	Impact of Economic Crisis on Domestic Sales.....	4-30
Table 4-1-15	Impact of Economic Crisis on Exports.....	4-31
Table 4-1-16	Impact of Economic Crisis on Company Profits.....	4-31
Table 4-1-17	Reduction in Number of Employees.....	4-32
Table 4-1-18	Countermeasures in Response to Economic Crisis.....	4-33
Table 4-1-19	Need to Raise Funds after Economic Crisis.....	4-34
Table 4-1-20	Amount of Required Working Capital.....	4-35
Table 4-1-21	Use of Working Capital.....	4-35
Table 4-1-22	Amount of Required Investment Facilities Funds.....	4-36
Table 4-1-23	Use of Investment Funds for Facilities.....	4-36
Table 4-1-24	Comparison of Priority Level by Product Area in the Industrial Machinery Sector.....	4-41
Table 4-1-25	Framework for the Development of the Machinery Parts and Components Industry.....	4-46
Table 4-1-26	Current Conditions, Problems and Countermeasures in the Machinery Parts and Components Industry.....	4-47
Table 4-2-1	Domestic Market of Cars.....	4-49
Table 4-2-2	Production of Cars.....	4-51
Table 4-2-3	Percentage of Production Volume by Category (1998).....	4-51
Table 4-2-4	Average Amount of Local Content by Category.....	4-54
Table 4-2-5	Export Expansion Efforts of Principals.....	4-58
Table 4-2-6	Production Value of Automotive Parts and Components.....	4-61
Table 4-2-7	Market for the GIAMM Member Companies Before the Crisis.....	4-62
Table 4-2-8	Situation of Parts and Components Manufacturers Before the Crisis.....	4-63
Table 4-2-9	Parts and Components Manufacturer Classifications.....	4-64
Table 4-2-10	Supply of Raw Materials.....	4-65
Table 4-2-11	Impact of the Economic Crisis.....	4-67
Table 4-2-12	Impact on Domestic Sales.....	4-67
Table 4-2-13	Operation Rates Before the Crisis.....	4-68
Table 4-2-14	Operation Rates After the Crisis.....	4-68
Table 4-2-15	Impact on Exports.....	4-69
Table 4-2-16	Decrease Ratio of Exports.....	4-69
Table 4-2-17	Impact on Corporate Profits.....	4-70
Table 4-2-18	Decrease Ratio of Corporate Profits.....	4-70
Table 4-2-19	Number of Employees Before the Crisis.....	4-71
Table 4-2-20	Number of Employees After the Crisis.....	4-71
Table 4-2-21	Countermeasures for the Crisis.....	4-72

Table 4-2-22	Major Problems and Measures of the Indonesian Automotive Parts and Components Industry in the Management Area.....	4-78
Table 4-2-23	Major Problems and Measures of the Indonesian Automotive Parts and Components Industry in the Technical Area	4-82
Table 4-2-24	Grouping Standards to Estimate the Priority of the Selected Automotive Parts and Components through the First Screening.....	4-87
Table 4-2-25	Priority Parts and Components for the Development of the Automotive Parts and Components Industry	4-88
Table 4-2-26	Characteristics and Development Direction of the Selected Priority Automotive Parts and Components	4-89
Table 4-2-27	Needs for Manufacturing Process Improvement for the Selected Priority Automotive Parts and Components	4-91
Table 4-2-28	Summary of Macro Policy Framework.....	4-92
Table 4-3-1	Size of the Indonesian Electric and Electronic Industry	9-94
Table 4-3-2	Production Trends for Electric and Electronic Products in Indonesia	4-95
Table 4-3-3	Export Trends for Electric and Electronic Goods in Indonesia	4-97
Table 4-3-4	Export Trends for Electric and Electronic Goods, and Parts and Components in Indonesia.....	4-98
Table 4-3-5	The Effects of the Currency and Economic Crisis on Household Electric Appliance Manufactures (Company S)	4-100
Table 4-3-6	Flow of Domestic Demand and Diffusion for Major Household Electric Goods.....	4-101
Table 4-3-7	Examples of Domestic Supply.....	4-102
Table 4-3-8	Production Flow of Electric and Electronic Parts and Components in Indonesia	4-106
Table 4-3-9	Export and Import Figures for Electric and Electronic Parts and Components	4-108
Table 4-3-10	Typical Cases of Procurement of Electric and Electronic Parts.....	4-113
Table 4-3-11	Geographical Distribution of Supporting Industries	4-115
Table 4-3-12	Breakdown of Companies by Number of Employees	4-115
Table 4-3-13	Impact on Business of the Currency/ Economic Crisis.....	4-117
Table 4-3-14	Impact of Currency/ Economic Crisis on Corporate Profits	4-118
Table 4-3-15	Impact of the Currency/ Economic Crisis on Domestic Sales	4-119
Table 4-3-16	Impact of Currency/ Economic Crisis on Exports	4-120
Table 4-3-17	Countermeasures in Response to the Currency/ Economic Crisis	4-121
Table 4-3-18	Technical Problems and Countermeasures in the Local Electric and Electronic Parts Industry	4-124
Table 4-3-19	Improvement Measures for the Managerial Issues Faced by the Local Electric and Electronic Parts and Components Industry.....	4-130
Table 4-3-20	Parts Selected for Prioritization in the Previous Study.....	4-131

Table 4-3-21	Present Status and Characteristics of the Electric and Electronic Industry in Indonesia.....	4-135
Table 4-3-22	Basic Development Strategies of the Electric and Electronic Parts and Components Industry in Indonesia.....	4-136
Table 4-3-23	Technical Development Measures for Electric and Electronic Industry	4-137
Table 4-3-24	Managerial Development Measures for Electric and Electronic Industry	4-138

Chapter V

Table 5-1-1	Production Trend of Machinery Industry in Japan.....	5-2
Table 5-1-2	Automotive Parts and Components Production Values by Fiscal Year	5-6
Table 5-1-3	Major Automotive Parts and Components Production Value (Four Wheeled Vehicles Only).....	5-2
Table 5-1-4	Trends in Numbers of Businesses and Shipment Values by Product Type	5-12
Table 5-1-5	Distribution of Major Manufacturers of Agricultural Machinery by Capital and Numbers of Employees.....	5-14
Table 5-1-6	Exports and Imports of Cast and Forged Products (1997).....	5-18
Table 5-1-7	Value of Die Production of Each Country	5-21
Table 5-2-1	The World Automobile Market.....	5-22
Table 5-2-2	Automobile Sales and Projections for 2005 in Asian Countries.....	5-24
Table 5-2-3	Electric and Electronic Equipment Exports to ASEAN and Korea.....	5-25
Table 5-2-4	Trends in Production of Major Items	5-28
Table 5-2-5	Trends of Japanese Automobile Manufacturers towards the Currency Crisis	5-34
Table 5-2-6	Plans of Finished Vehicle Manufacturers for Exporting from ASEAN.....	5-35
Table 5-2-7	Major Export Plans of Japanese Affiliated Automotive Parts and Components Manufacturers	5-36
Table 5-2-8	Impact of Asian Currency Crisis on Household Appliances Industry by Country.....	5-38
Table 5-2-9	Current Status of Automotive Parts and Components Industry in ASEAN Countries	5-41
Table 5-2-10	Sources of Automotive Parts Supply in Thailand.....	5-42
Table 5-2-11	List of Localized Automotive Parts in Malaysia.....	5-43
Table 5-2-12	Current Status of Electric and Electronic Parts and Components Industry in ASEAN Countries	5-44
Table 5-2-13	Imports of Electric Products and Parts of Thailand	5-45

Table 5-2-14	Imports of Electronic Products and Parts of Thailand	5-46
Table 5-2-15	Trade of the Electric and Electronic Industry in Malaysia.....	5-47
Table 5-2-16	Major Import Items of Electric Equipment of the Philippines.....	5-48
Table 5-2-17	Major Import Items of Electronic Equipment of the Philippines.....	5-49
Table 5-2-18	Size of the Die Market in Selected Asian Countries in 1995	5-51
Table 5-2-19	Overview of the Casting Industry in Asian Countries	5-52
Table 5-2-20	Overview of the Forging Industry in Asian Countries	5-54
Table 5-2-21	Overview of the Metal Press Industry in Asian Countries.....	5-56
Table 5-2-22	Overview of the Die Industry in Asian Countries.....	5-57
 Chapter VI		
Table 6-2-1	Approaches for the Development of the Supporting Industries.....	6-6
Table 6-3-1	Overall Development Measures for the Supporting Industries.....	6-37
 Chapter VII		
Table 7-2-1	Tentative Upgrading Plan of CSF Facilities	7-11
Table 7-2-2	Outline of Loan Schemes.....	7-37

LIST OF APPENDIXES

APPENDIX 1	Study Team Member List
APPENDIX 2	Questionnaire Sheet for the Questionnaire Survey
APPENDIX 3	Summary of the Results of the Questionnaire Survey
APPENDIX 4	List of Industrial Association in Major Asian Countries

LIST OF ACRONYMS AND ABBREVIATIONS

<u>Acronym/ Abbreviation</u>	<u>Spelling</u>
4WD:	Four-Wheel Drive
ADB:	Asian Development Bank
AFTA:	ASEAN Free Trade Area
AICO:	ASEAN Industrial Cooperation
ALSINTANI:	Association of Indonesia Agricultural Machinery
APEC:	Asian Pacific Economic Cooperation
APP:	Akademi Pimpinan Perusahaan (Academy of Company Managers)
APRISINDO:	Indonesian Footwear Association
ASKRINDO:	Indonesia Credit Insurance Company
B4T:	Institute for Research and Development of Material and Technical Product Industries
BBD:	Bank Bumi Daya
BDN:	Bank Dagan Naegara
BEII:	Bank Ekspor Impor Indonesia
BI:	Bank Indonesia
BNI:	Bank Negara Indoensia
BPR:	People ' s Credit Bank
BRI:	Bank Rakyat Indonesia
BULOG:	Food Supply Agency
CAD:	Computer-Aided Design
CAR:	Capital Adequacy Ratio
CBU:	Completely Built-Up
CDMA:	Code Division Multiple Access
CEPT:	Common Effective Preferential Tariff
CHEVEST:	Center for Vocational and Extension Service Training
CKD:	Completely Knock-Down
CNC:	Computerized Numerical Control
CRT:	Cathode-Ray Tube
CSF:	Common Service Facilities
CTV:	Color Television
DIN:	Deutsche Industrie-Norm (German Industrial Standard)
DSB:	Dispute Settlement Body
ECGD:	Export Credits Guarantee Department
EDI:	Electronic Data Interchange
EFIC:	Export Finance and Insurance Corporation

<u>Acronym/ Abbreviation</u>	<u>Spelling</u>
EPTE:	Export Electronic Components Warehouse
FDD:	Floppy Disc Drive
GAIKINDO:	Association of Indonesian Car Manufacturers
GAMMA:	Federation of Indonesian Metalworks and Machinery Industries
GATT:	General Agreement on Tariffs and Trade
GEI:	Association of Electronic and Electrical Home Appliances Industries of Indonesia
GIAMM:	Association of Indonesian Automotive Parts Manufacturers
GTZ:	German Technical Cooperation
HDD:	Hard Disk Drive
HIE:	House Of Indonesia Emporium
IBRA:	Bank Restructuring Agency
IC:	Integrated Circuit
IEDC :	Indonesia Electronics Development Corporation
IETC:	Indonesia Export Training Center
IKM:	Small and Medium Scale Industry
IMF:	International Monetary Fund
INDRA:	Indonesian Debt Restructuring Agency
IPA:	Indonesian Port Additional
IPO:	International Procurement Office
IRDMMI:	Institute for Research and Development of Metal and Machinery Industries
ISO:	International Organization for Standardization
ISTA:	International Die Association
IT:	Information Technology
ITPC:	Indonesian Trade Promotion Center
JABOTABEK:	Jakarta, Bogor, Tangerang, and Bekasi
JETRO:	Japan External Trade Organization
JJ:	Jakarta Initiative
JICA:	Japan International Cooperation Agency
JIS:	Japan Industrial Standard
JODC:	Japan Overseas Development Corporation
KKN:	Collusion, Corruption and Nepotism
KMK-BPR:	Working Capital Credit for Rural Banks Development
KMK-BPRS:	Working Capital Credit for Syariah Rural Bank Development
KMK-UKM:	Working Capital Credit for Small and Medium Scale Enterprise
KPKM:	Credit for Small and Micro Scale Entrepreneur
KUK:	Credit for Small Scale Enterprise

Acronym/
Abbreviation

Spelling

L/C:	Letter of Credit
MIDC:	Metal Industry Development Center
MITI:	Ministry of International Trade and Industry
MOIT:	Ministry of Industry and Trade
MPR:	People's Consultative Assembly
MSC:	Multimedia Super Corridor
NAFED:	National Agency for Export Development
NC:	Numerical Control
OA:	Office Automation
OECF:	Overseas Economic Cooperation Fund
OEM:	Original Equipment Manufacturer
PASMI:	Association of Motorcycles Sole Agents-Assemblers- Manufacturers
PCB:	Printed Circuit Board
PDP:	Plasma Display Panel
PET:	Special Exporter
PKM:	Micro Credit Projects
PLN:	National Electricity Corporation
PPN:	Value Added Tax
PUSBINLAT:	Vocational Training Center
QCD:	Quality, Cost, and Delivery
REPLITA:	Five-Year Development Plan
RHQ:	Regional Headquarters
SBI:	Bank Indonesia Certificate
SBPU:	Money Market Securities
SME:	Small and Medium Scale Enterprise
SMI:	Small and Medium Scale Industry
SSI:	Small Scale Industry
TIDC:	Indonesian Trade Distribution Center
TPL:	Field Research Worker
TPN:	Timor Putra Nasional
TPP:	Industrial Research Workers
TSL:	Two Step Loan
UKM:	Small and Medium Scale Enterprise
UPT:	Unit Pelayanan Teknis,
USAID:	U. S. Agency for International Development
VAT:	Value Added Tax
VCR:	Videocassette Recorder
WTO:	World Trade Organization

CHAPTER I. OUTLINE OF THE STUDY

1. BACKGROUND AND OBJECTIVE

1.1 BACKGROUND

The Japan International Cooperation Agency (JICA) undertook a Study on the Development of Supporting Industries in Indonesia (“the previous study”), from January, 1996 to March, 1997. The purpose of the study was to establish a master plan for the development of the supporting industries, including proposals for measures to stimulate the industries and to resolve technical issues, in order to reinforce the industrial structure in Indonesia by promoting domestic production in the automotive parts, machine parts and electric and electronic parts industries.

The results of the previous study were summarized in the Final Report of the study, which was reprinted and widely distributed among interested parties in Indonesia, to considerable acclaim. Further, some of the fourteen action programs proposed by the Study Team are already in the stage of implementation.

However, as a result of the currency crisis that beset Asia from July, 1997, onwards, and the ensuing economic turmoil, there have been dramatic changes in the circumstances surrounding the supporting industries in Indonesia, compared to the situation at the time of the previous study. Also, the then vice-president of Indonesia, B. J. Habibie, visited Japan in March, 1998, and strongly requested that the Japanese government provide further support for the development of small and medium scale industries.

In line with this request from the Indonesian government and the understanding on their urgent needs, in September of 1998, JICA dispatched a Project Identification Study Team to Indonesia, and concluded an agreement with regard to the implementation of the follow-up study.

1.2 OBJECTIVE

The purpose of the study is to re-examine the original master plan proposed by the previous study for the development of the supporting industries, which was drawn up at a time when

there was a climate of steady economic growth, and to revise it in accordance with the current economic situation and the circumstances surrounding the supporting industries today. Also, where necessary, the master plan was reconstructed with the addition of supplementary measures for revitalization, and in this way, comprehensive proposals were made for the encouragement of the supporting industries and small and medium sized enterprises.

Specifically, the activities of the study could be summarized as follows.

- (1) The circumstances surrounding the supporting industries at the time of the previous study are compared against those of the follow-up study after the economic crisis in Indonesia, and the problems facing the supporting industries today will be examined. The results are used to restructure the master plan proposed by the previous study.
- (2) In particular, the content and priority of measures and action programs necessary for the purpose of improving the supporting industries are reviewed in the context of their urgency as emergency countermeasures, and complementary plans added where necessary.
- (3) The study provides relevant market information in order to open up markets for the supporting industries, and to identify potential customers for their products.

1.3 SUBJECT INDUSTRIES

The Study covers the supporting industries of the following three sub-sections as was done in the previous study in the following order:

- i. agro machinery and other machinery industries,
- ii. automotive industry
- iii. electric and electronic industry.

In addition, to the extent possible, the following sectors are covered by the Study as they are related to the three sub-sectors mentioned above:

- iv. other small and medium sized enterprises in the manufacturing industry; and
- v. distributors of parts of the sub-sectors concerned.

2. MAJOR RECOMMENDATIONS MADE BY THE PREVIOUS STUDY

2.1 BASIC POLICY

The development of the supporting industries should be promoted on the basis of the following principles:

- i. The development strategies should be established making clear the objective that the development target should be placed not on the protection of the weak small scale manufacturers but on the development of sufficiently competitive medium and small scale parts and components manufacturers. An integrated approach will be realized through joint efforts by the public sector and private sector based on well-organized coordination among related organizations, i.e., governmental offices, public institutions, assemblers, and trade associations.
- ii. The development will place importance on self-supporting development efforts by the supporting industries.
- iii. The development will make use of supportive activities by the private sector, especially those of assemblers.
- iv. The investments by foreign parts and components manufacturers will be actively promoted with the emphasis on its role as a driving force.
- v. The development will emphasize the market mechanism in order to build internationally competitive industries.
- vi. The government's participation will be basically directed to the creation of good business environments and the provision of services which can not borne by individual companies, in other words, industrial infrastructure, which meets the needs of the supporting industries.

2.2 BASIC STRATEGIES

The following six approaches should be adopted as basic development strategies for the supporting industries in Indonesia:

- Approach I: To establish a policy framework for the development of the supporting industries and an organization for effective implementation.
- Approach II: To improve the levels of the supporting industries in terms of production technologies and managerial skills. As well as the government's support, support from assemblers and trade organizations will play an important role. Human resource development will be also important for the upgrading of

technological and managerial levels of the supporting industries.

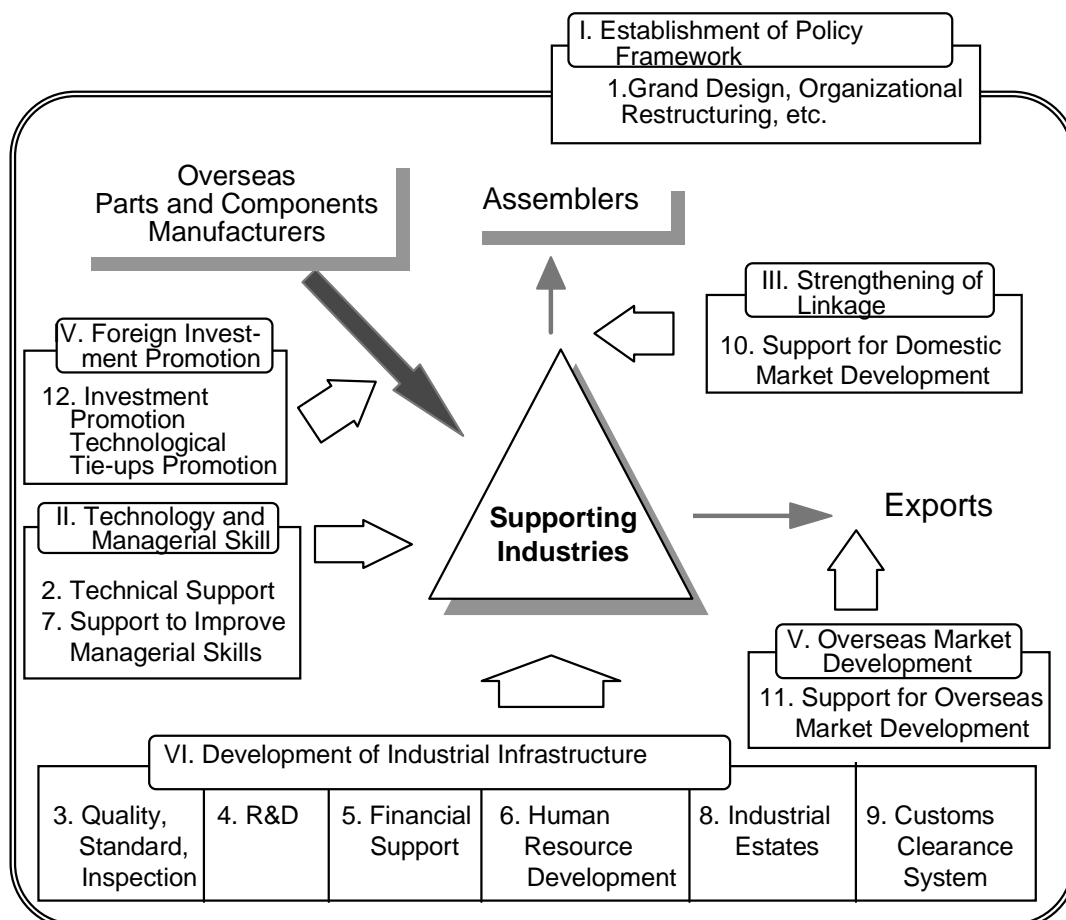
Approach : To expand subcontracting businesses of the supporting industries in order to develop the linkage between assemblers and subcontractors. Technological transfer from assemblers to subcontractors will be promoted and information for subcontracting business promotion, such as buyer information, supplier information, and market needs, will be provided.

Approach : To promote foreign direct investments by the world's leading parts and components manufacturers and capital and/or technological tie-ups among overseas and local manufacturers.

Approach V: To expand exports of parts and components by raising international competitiveness and by supporting overseas marketing activities.

Approach VI: To promote the development of industrial infrastructure by the government to provide a good business environment for the supporting industries. Industrial infrastructure will include such areas as the financing system, R&D support, standards, and tax systems, in addition to such ordinary infrastructure as industrial estates.

Fig. 1-2-1 Basic Strategies for the Development of the Supporting Industries



2.3 OVERALL DEVELOPMENT STRATEGIES AND ACTION PROGRAMS

The Previous Study made recommendations on the development strategies for each supporting industry, overall development policies of the supporting industries, and action programs.

The overall development policies which were proposed by the previous study are as shown in Table. 1-2-1.

Table. 1-2-1 Overall Development Policies for the Development of the Supporting Industries in Indonesia

Area	Measure	Content
Institutional Policy Framework	1. Preparation of the Institutional Framework for the Development of the Supporting Industries	(1) Establishment of Overall Supportive Measures for the Supporting Industries and Review of the Existing Small Industries Development Policies
		(2) Establishment of an Organization for the Development of the Supporting Industries
Technical Support/ R&D Capability Improvement	2. Improvement of Technological Level of the Supporting Industries	(1) Promotion of technological transfer from assemblers to their subcontractors
		(2) Expansion of technical guidance by public institutions
		(3) Promotion of education and training on production management for engineers
		(4) Expansion of activities of trade associations
		(5) Mediation of technological tie-ups
	3. Improvement of Quality Control	(1) Establishment of an institution which engages in the diffusion of quality control technologies
		(2) Development of a quality control system suited to SMIs and preparation of an introduction manual for that system
		(3) Organizing of personnel in charge of quality control
		(4) Provision of information on quality control
	4. Improvement of R&D Activities/ New Product Development Capabilities	(1) Promotion of the localization of the function of authorizing new parts and components at assemblers
(2) Expansion of facilities of R&D institutions under MOIT		
(3) Promotion of joint R&D activities by the industry, public sector and academic sector		
(4) Support for R&D by private companies		
(5) Education and training for R&D personnel		
Financial Support	5. Expansion of Finance to Small and Medium Scale Industries	(1) To widen the eligibility of KUK to medium scale industries.
		(2) To introduce a two-step loan for the supporting industries
		(3) To establish a public financial institution specializing in finances for small and medium scale companies

Area	Measure	Content
Human Resource Development	6. Expansion of Human Resource Development System	(1) Establishment of a national-level vocational training system which responds to the needs of industries
		(2) Expansion of vocational training centers
		(3) Expansion of employee training within the industries
		(4) Training of engineers and technicians
Managerial Skills	7. Improvement of Managerial Skills	(1) Expansion of education and training of managers
		(2) Management modernization through management diagnosis and consulting
		(3) Support for entrepreneurs
Industrial Infrastructure	8. Development of Industrial Infrastructure for the Supporting Industries	(1) Promotion for the locating of supporting industries in specific industrial areas
		(2) Preparation of industrial estates for small and medium scale companies
	9. Rationalization of Tax and Tariff Systems and Realization of Quick Customs Clearance	(1) Review of Domestic Tax Systems <ul style="list-style-type: none"> a. To reduce luxury taxes on electric home appliances, except for high-grade products. b. To revise luxury taxes on automobile sales
		(2) Improvement in Import Duty System <ul style="list-style-type: none"> a. To unify import-related taxes. b. To shift from consignment customs clearance to customs clearance by the government itself. c. To simplify and speed up customs clearance procedures by introducing an electric data processing system. d. To integrate the taxation section and the refund section and to simplify and quicken tariff refund procedures. e. To secure an accord between industrial policy and the tariff system
Marketing	10. Support for Domestic Marketing	(1) Support to parts and components manufacturers in finding orders from new customers
		(2) Preparation of a database on parts and components manufacturers
		(3) Expansion of activities of mediating between suppliers and buyers of parts and components
	11. Support for Export Marketing	(1) Expansion of public organizations' support for overseas marketing activities
		(2) Provision of information services on overseas markets by public organizations
		(3) Support for export-oriented parts and components manufacturers
Investment Promotion	12. Expansion of Investment Promotion Activities	(1) Establishment of clear foreign investment policies
		(2) Implementation of investment promotion activities toward clarified targets
		(3) Expansion of provision of information for investment promotion
		(4) Provision of assistance to investments by foreign small and medium parts and components manufacturers

The previous study further recommended the following 14 action programs.

- Program 1. Strengthening of IRDMMI's technical support capabilities for the foundry industry
- Program 2. Establishment of a joint R&D support scheme for small and medium scale industries
- Program 3. Program for expansion of technical guidance in local regions
- Program 4. Technical guidance visits to supporting industries by experts
- Program 5. Sub-contractor development program
- Program 6. Reinforcement of industry association activities
- Program 7. Loan scheme for the development of supporting industries
- Program 8. Establishment of an advanced skill development center
- Program 9 . Management skill training expansion program
- Program 10 . Metal working industrial estate for small and medium scale industry development
- Program 11 . Computerization of customs clearance procedures
- Program 12 . Establishment of a subcontracting (business tie-up) promotion scheme
- Program 13 . Intensification of parts export promotion activities
- Program 14 . Expansion of capital and technical tie-up promotion activities

3. SCOPE OF WORK FOR THE FOLLOW-UP STUDY

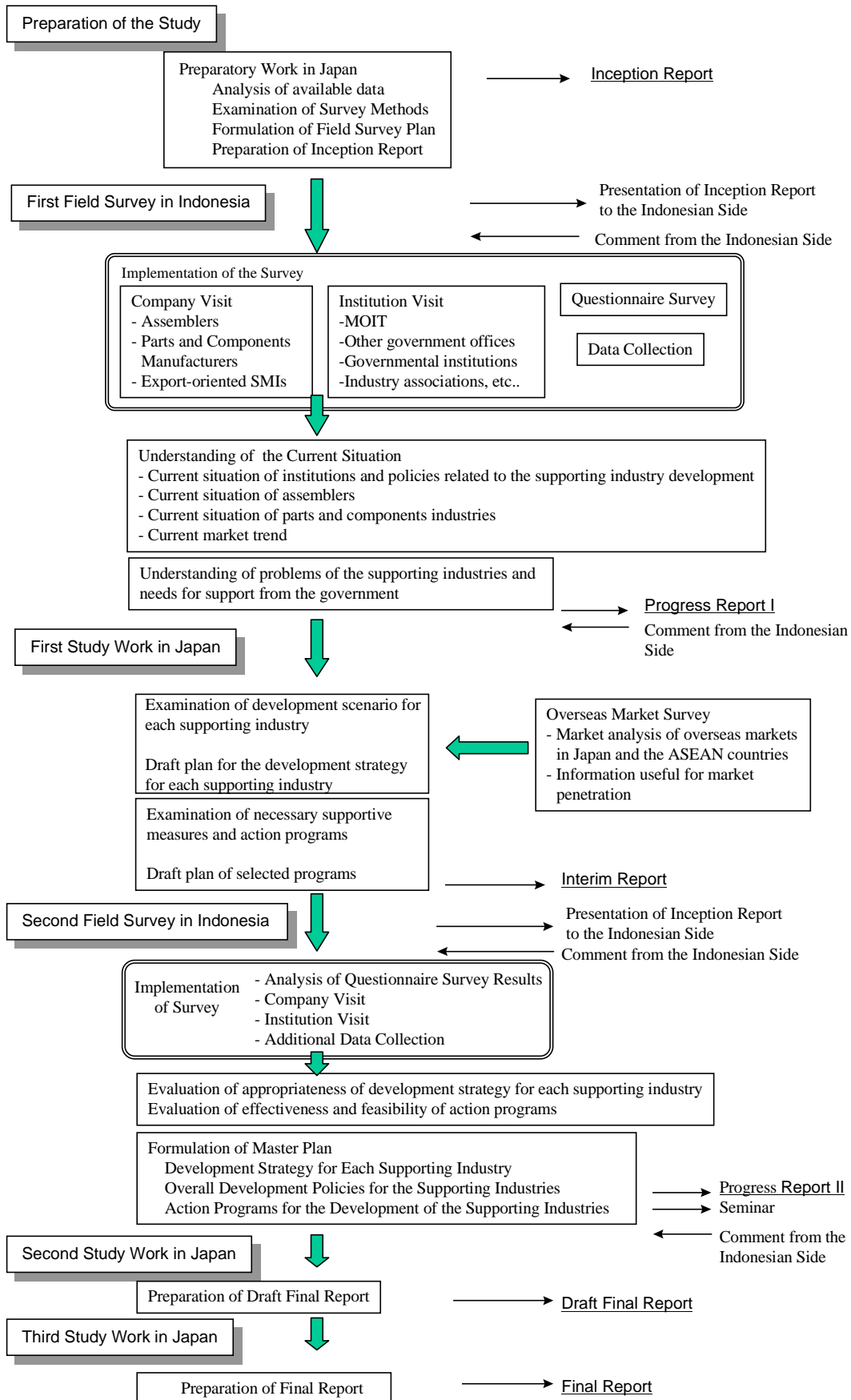
3.1 STUDY FRAMEWORK

The follow-up study was carried out in the following five steps:

Step 1:	Preparation of the Study	(Preparatory Work in Japan)
Step 2:	Study of the Present Condition of the Supporting Industries and Relevant Development Policies	(First Field Survey in Indonesia)
Step 3:	Analysis and Evaluation the Problems of the Supporting Industries	(First Work in Japan)
Step 4:	Formulation of Strategy for the Development of the Supporting Industries and Development of Master Plan	(First Work in Japan, Second Field Survey in Indonesia)
Step 5:	Preparation of the Final Report	(Second Work in Japan, Third Work in Japan)

The overall framework of the Study is illustrated in Fig. 1-3-1.

Fig. 1-3-1. Overall Framework of the Study



3.2 STUDY ITEMS

The items covered by the whole follow-up study were as follows:

1. Review of Recent Economic Developments in Indonesia
 - 1-1 Current Economic Situation and Trends
 - 1-2 Major Economic Issues and Government Policies
2. Review of Present Policies and Development Measures Relevant to the Supporting Industries Development
 - 2-1 Present Policies for the Development of the Subject Industries
 - 2-2 Present Policies for the Development of the Small and Medium Scale Industries
 - 2-3 Financial Systems and Policies
 - 2-4 Export Promotion Policies
3. Present Situation of the Machinery Parts Industry in Indonesia
 - 3-1 Present Situation of the Machinery Industry
 - 3-2 Current Status of the Machinery Parts Industry
 - 3-3. Current Problems of the Machinery Parts Industry
4. Present Situation of the Automotive Parts Industry in Indonesia
 - 4-1 Present Situation of the Automotive Industry
 - 4-2 Current Status of the Automotive Parts Industry
 - 4-3. Current Problems of the Automotive Parts Industry
 - 4-4. Prospect of the Product Diversification of the Automotive Parts Industry
5. Present Situation of the Electric and Electronic Parts Industry in Indonesia
 - 5-1 Present Situation of the Electric and Electronic Industry
 - 5-2 Current Status of the Electric and Electronic Parts Industry
 - 5-3. Current Problems of the Electric and Electronic Parts Industry
6. Market for Parts and Components in the Asian Countries
 - 6-1. Market trend in Japan and the major ASEAN Countries
 - 6-2. Market structure
 - 6-3. Policies and regulations
 - 6-4. Institutions which support market penetration
7. Proposal of Master Plan
 - 7-1 Development Strategies Proposed for Each Industry
 - 7-2 Overall Development Strategies
 - 7-3 Prioritized Action Programs

4. METHODOLOGY

In December 1998, the JICA Study Team, mainly consisting of researchers and consultants of the Japan Research Institute, Ltd. and Yachiyo Engineering Co., Ltd., was formed for the implementation of the follow-up study (For the list of Study Team members, refer to Appendix 1.). The study was conducted mainly based on the following methodologies.

4.1 FIELD INTERVIEW SURVEY

In the field work in Indonesia, the field interview survey by direct visit was used as the principal method of the study. In order to cover a large number of target industries and related organizations from a wider range of areas, the survey was conducted dividing the team members into the following small sub-groups.

- 1) Machinery parts group;
- 2) Automotive parts group;
- 3) Electric and electronic parts group;
- 4) Export promotion group;
- 5) Industrial policy group; and
- 6) Financial policy group.

The number of companies and organizations visited in the 1st and 2nd phase field surveys in Indonesia was as follows.

Table 1-4-1 Number of Companies and Organizations Visited in the Field Survey

Group	No. of companies	No. of organizations	Total
1. Machinery parts group;	31	4	35
2. Automotive parts group;	45	2	47
3. Electric/electronic parts group	28	7	35
4. Export promotion group;	12	19	31
5. Industrial policy group	0	15	15
6. Financial policy group.	0	21	21
Total	116	68	184

Source : JICA Study Team

4.2 QUESTIONNAIRE SURVEY IN INDONESIA

As a supplementary measure to the interview survey via direct visits by experts, a questionnaire survey making use of an Indonesian local consultant was conducted.

The questionnaire survey was conducted in two phases. In the first phase survey, the current operation situation of about 300 supporting companies in Indonesia, which gave the Study Team effective answers to the questionnaire survey conducted in the previous study, was examined. The results of the above trace survey is shown in Table 1-4-2. Due to both the deterioration in the communication conditions and the impact of drastic economic turmoil, there still remained many companies which could not be traced. Out of 227 companies that were successfully contacted, only 11 companies were identified as those which had stopped factory operations and the majority of the companies were identified as still operational, though their operation levels are very low.

Table 1-4-2 Results of a Trace Survey

Unit: No. of companies

	Total target	Operating	Not operating	No contact
Machinery parts	109	87	4	18
Automotive parts	98	69	0	29
Electric/Electronic parts	74	44	5	25
Small metal parts	25	16	2	7
Total	306	216	11	79

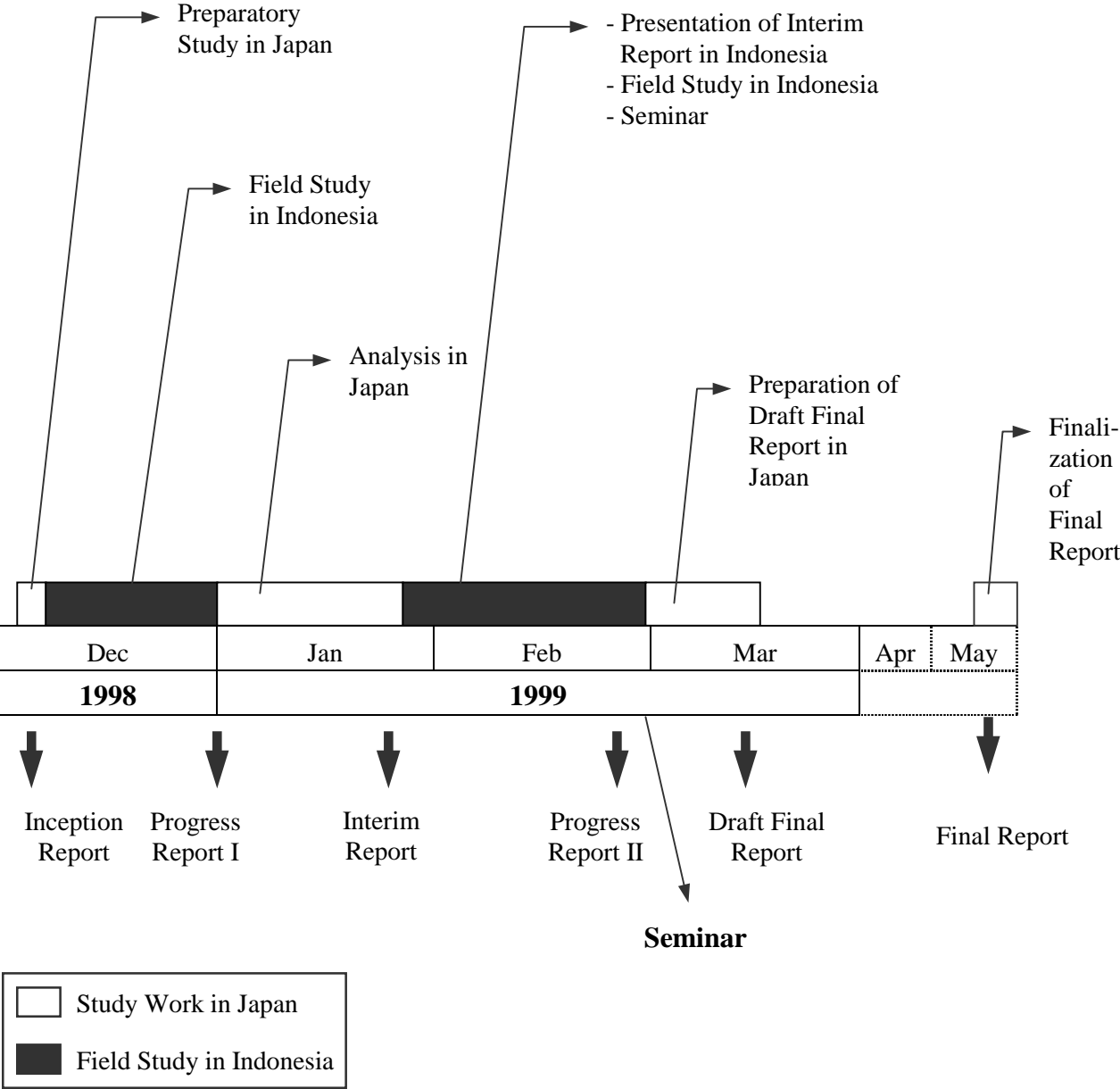
Source : JICA Study Team

In the second phase, the survey making use of the questionnaire sheets, which was first designed by the Study Team, elaborated upon by discussions among the Study Team members, counterparts and local consultants and finally translated into the Indonesian language and printed by the local consultant, was implemented. (The questionnaire sheets finalized are attached as an Appendix 2.) In addition to those supporting industry companies which were identified as still operating in the first phase survey, 200 over companies were identified as additional questionnaire survey target companies. The

additional companies will basically represent the export-oriented small and medium scale industries.

As a result of the second phase survey, effective answers were collected from 334 companies. The analysis results of this second phase survey are summarized and shown in Annex 3.

Fig. 1-4-1 Work Schedule of the Study



CHAPTER II. PRESENT SITUATION OF THE INDONESIAN ECONOMY

1. THE ECONOMIC CRISIS IN INDONESIA

In May, 1997, the currency crisis that began in Thailand spilled over into neighboring countries, and triggered serious currency declines throughout Asia. Following Thailand, Indonesia too faced economic crisis. Currently, like Thailand and Korea, Indonesia is moving ahead with economic reconstruction, with the support of the IMF and the industrialized nations.

1.1 BACKGROUND OF THE ECONOMIC CRISIS

In the 1980s, the rupiah rate was rationalized in an attempt to escape from oil dependency, and a series of structural adjustment policies and other measures to open the economy, such as liberalizing investments and easing import restrictions, was pushed through, and the Indonesian economy began to show strong signs of recovery from 1987 onward, and continued with high levels of growth into the 1990s.

However, Indonesia's economic growth also faced the following structural problems.

- i. Dollar linked exchange rate system and overvaluated rupiah

In order to secure a continued influx of foreign currency, Indonesia adopted an exchange rate system that linked its own currency loosely with the US dollar. After two collapses in the 1980s, the government continued with a policy of devaluing the rupiah's exchange rate by around 5% per year, as a means of adjusting for inflation. As a result, the rupiah offered foreign investors low exchange risk.

However, the dollar linked rupiah became overvalued. This was caused by 1) advanced inflation resulting in the rupiah being overvalued against the dollar, 2) an increasingly high dollar from 1995 onward, consequently increased the strength of

the rupiah against the yen and European currencies, and 3) the devaluation of China's Renminbi, from January, 1994. These factors reduced Indonesia's export competitiveness. They also detracted from Indonesia's investment appeal as an export base.

ii. Expanded current balance deficit and increased foreign debt balance

The export led industry, centered around direct investment by foreign enterprises, led to rapid increases in the import of raw materials, parts and components and capital. In addition, the expansion of internal demand led to an increase in imports of consumer goods, construction materials, etc. As a result, Indonesia's current balance deficit expanded.

iii. Bubble expansion caused by glut influx of foreign capital

In order to compensate for the lack of domestic funds for development, the government pushed ahead with the liberalization of the country's financial markets. In addition to the stability of the rupiah, the domestic money rate was at a higher level than that of the US dollar, so that large amounts of foreign capital flooded in. Both Indonesia's banks and private firms borrowed a large amount of money from abroad. The result was that huge amounts of foreign capital were pouring into Indonesia, creating a high foreign debt balance, and increasing the short-term private sector debt balance in particular. The glut of foreign capital led to problems such as excessive investment plans, investment in projects with low investment efficiency, and a preoccupation with real estate. This excess of capital led to a stock bubble and a real estate bubble.

iv. Delayed financial reform

While the liberalization of the financial markets pushed ahead, the ability of the financial institutions could not keep up. The fragility of the financial sector began to become apparent in the inability of the financial institutions to conduct proper

screening, the delays in disclosures and the poor supervisory abilities of the financial authorities. Financial deals steeped in bribery, corruption and nepotism (KKN) left the state banks with a huge amount of bad debt, and led to over-financing to group enterprises by private banks.

1.2 INCEPTION OF THE MONETARY CRISIS IN INDONESIA

Amidst the large current balance deficit, the overvalued (against the dollar) Asian currencies found it difficult to maintain their dollar linked systems. Firstly, when Thailand's real estate bubble burst, and its economy fell into financial crisis, there was heavy selling of the baht, and in May 1997, Thailand faced a currency crisis. This currency crisis spread into neighboring Asian nations, including Indonesia, which had very similar structural problems. The pressure from international investment funds to sell Asian currencies began to pick up speed. Credit uncertainty grew amid exchange rate fluctuations, and foreign short-term funding was quickly withdrawn. Indonesia's financial system was left reeling, and economic turmoil expanded.

Starting from Thailand's adoption of the floating exchange system in July 1997, the rupiah's exchange rate began to fall rapidly, and Indonesia's financial and exchange markets went into turmoil. On August 14, the government switched to the floating exchange rate system, and adopted tight monetary policies, in an attempt to stabilize the exchange rate. As a result, from August onward, the short-term interest rate began to soar. Then, on September 3, the government announced a package of economic stabilization policies, including reduction of government development spending, postponement of large scale investment projects, restructuring of failed banks, export expansion and an increase in luxury taxes. However, there was no sign of a slowing of the rupiah's fall, and by October 3, the rupiah's exchange rate was 3,690 rupiah to the dollar, a drop of 34% in the three months after July 1.

Faced with heavy foreign debt and a lack of dollar funds, the Indonesian government applied to the IMF for assistance. In October, 1997, the IMF, along with the World Bank and the Asian Development Bank, announced financial support for Indonesia to the tune of 23

billion dollars. Japan, the United States, Singapore, Malaysia and others provided a complementary financial framework, and the total assistance to Indonesia amounted to almost 40 billion dollars.

1.3 FACTORS DEEPENING THE ECONOMIC CRISIS

The rupiah's downward plummet until November of 1997 had its roots in the Asian currency crisis, but events after that were largely affected by political factors, which exacerbated Indonesia's economic crisis. The extremely volatile political situation, which saw fears over President Suharto's health and the wrangling over the election of the vice-president and successor to President Suharto, President Suharto's confrontations with the IMF, the internal riots, and President Suharto's eventual resignation, contributed to a worsening of the economic situation.

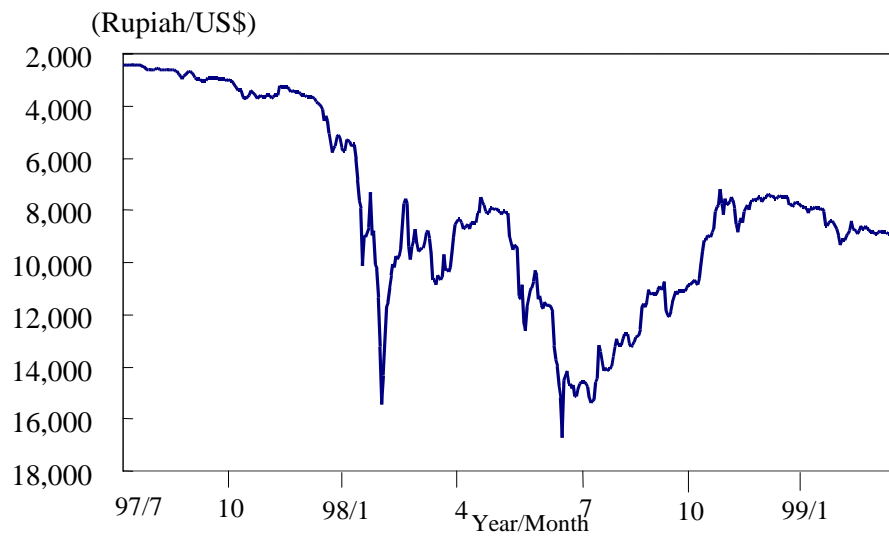
In December, 1997, rumors began to circulate about President Suharto's health, and the repayment of short-term borrowed funds meant an increased demand for dollars. These factors combined to push the rupiah's exchange rate down to 5,000 rupiah to the US dollar. Into 1998, the rupiah continued to decline. The new fiscal budget (April, 1998 to March, 1999) announced by the government on January 6th did not contain the austerity measures promised the IMF, leading to concerns over the Indonesian government's ability to adequately address the economic crisis, and sending the rupiah's exchange rate plummeting to 10,000 rupiah to the dollar. In addition to this, (i) fears over the health of President Suharto, who was expected to be elected for a seventh term in the presidential elections in March 1988, and a lack of transparency with regard to the succession, led to political unrest, and (ii) food shortages and sky-rocketing prices formed the backdrop to frequent rioting which contributed to an atmosphere of social unrest. These and other factors accelerated the rupiah's decline, and on January 26, it reached a record low of 13,850 rupiah (closing rate). The rupiah's sharp decline meant an even greater risk that the private sector's 74 billion dollar foreign debt would not be able to be repaid, and it became apparent both at home and abroad that Indonesia's economy was in a critical condition. The government's attempts to restructure the banking sector heightened mistrust in banks.

President Suharto was re-elected by the Majelis Permusyawaratan Rakyat on March 10, 1998. However, popular dissatisfaction with the government's handling of the economic crisis and the Suharto regime increased, as did student demonstrations. On May 4, in an attempt to curb subsidy expenditure, the government raised gasoline prices and bus and rail fares. The increases were twice as large as they had ever been, and discontent grew among the populace, especially the lowest paid. Anti-government demonstrations became more virulent, and there was widespread rioting in rural areas. After students were killed on May 12, in clashes with security forces at Jakarta's Trisakti University, mass rioting occurred in the capital on May 14, effectively bringing the city to a halt. Demands for President Suharto's resignation came not only from the people, but from within political leaders, and after May 15, the political situation in Indonesia became fragile. President Suharto gave in to growing demands for him to step down, and resigned his office on May 21, and Vice-president Habibie was sworn in as president.

The political unrest surrounding the president's resignation had the following serious economic effects.

- i. The exchange rate for the rupiah, which had recovered to around 8,000 to 10,000 to the dollar in March 1998, once again fell sharply.
- ii. Economic activity, such as production and distribution, went into unavoidable recession.
- iii. Support from international support agencies, as well as private sector foreign debt negotiations, temporarily stopped.
- iv. Overseas investors decided to take a wait and see policy before investing any further, and this reduced the amount of direct foreign investment.

Fig. 2-1-1 Movement of the Rupiah against the Dollar



Source: Data Stream

2. ECONOMIC REFORM PROGRAMS

2.1 BACKGROUND TO THE STRUCTURAL REFORMS LED BY THE IMF

The IMF is directly involved in Indonesia's economic restructuring by advocating economic structural reform that attaches conditionality to emergency funding in order to support Indonesia. After the Indonesian government and the IMF agreed upon the initial conditionality in October, 1997, the conditionality was later modified in the memorandums described below.

January, 1998	Memorandum of Economic and Financial Policies
April 10, 1998	Memorandum of Supplementary Economic and Financial Policies
June 24, 1998	Memorandum of Secondary Supplementary Economic and Financial Policies
July 29, 1998	Memorandum of Economic and Financial Policies
September 11, 1998	Supplementary Memorandum of Economic and Financial Policies
October 19, 1998	Supplementary Memorandum of Economic and Financial Policies
November, 1998	Supplementary Memorandum of Economic and Financial Policies
March, 1999	Supplementary Memorandum of Economic and Financial Policies – Fourth Review under Extended Arrangement

The international agencies, led by the IMF and negotiated support strategies for Indonesia, which was facing a currency crisis, announced a \$23 billion support package on October 31, 1997. The support package was made up of \$10 billion from the IMF, \$4.5 billion from the World Bank, \$3.5 billion from the Asian Development Bank, and \$5 billion from other funding sources, including the government's overseas assets. The funding from the IMF was in the form of a three-year standby credit (\$10.14 billion), which was formally approved on November 5. The World Bank's funding was provided for the purposes of the restructuring

of the financial sector, and long term structural reform. The Asian Development Bank's funding provided for an immediately withdrawable \$1.5 billion, to be shared among four sectors (banking, capital market development, strengthening of fiscal operations and improving competitiveness in industry and trade), and a further \$2 billion for projects to improve infrastructure and to develop human resources.

On October 31, 1997, the Indonesian government announced a three-year package of economic reforms, as part of the conditions for assistance from the IMF. The details of this package were (i) the strengthening of the financial sector, (ii) improvement of the fiscal balance, (iii) exchange and financial stability, and (iv) deregulation and structural adjustment. With regard to concerns about automobile issues, (i) it was agreed that the preferential import tax status for parts and components for manufacturers who had achieved a certain level of localization would be abolished in the year 2000, and (ii) the rulings of the WTO with regard to the automobile issues would be respected. As a measure designed to strengthen the financial sector, 16 problem banks announced cessation of business operations on November 1, 1997.

On January 15, 1998, President Suharto made promises of economic structural reform to Michel Camdessus, Managing Director of the IMF, who had visited Indonesia in order to discuss Indonesia's economic reconstruction, based on the following measures: (i) implementation of an austere financial policy, (ii) restructuring of the country's financial system, including mergers of state banks, and (iii) drastic deregulatory measures. The IMF made the abolition of government support for the national automobile project, and the abolition of special privileges enjoyed by family businesses with ties to Suharto, including the liberalization of the distribution of plywood and cloves, etc., conditions for IMF assistance. Thus, the proposed reforms threatened to affect directly the "family businesses" run by the President's family.

President Suharto, however, appeared to be considering delaying implementation of the economic structural reforms that were part of the IMF's conditions, and in an effort to stabilize the exchange rate, announced the adoption of a fixed exchange rate system, through establishment of a currency board. These actions led to a deterioration in relations between

the Indonesian government and the IMF and other international support agencies. On March 6, 1998, the IMF, quoting Indonesia's seeming reluctance to tackle economic structural reform, announced that the discussions on an extra \$3 billion of financial aid, scheduled for March 15, would be postponed until after April. In sympathy with the IMF's decision, the World Bank, Asian Development Bank and the Japanese government also announced postponement of financial aid.

It was under these circumstances that President Suharto was elected to a seventh term on March 10. President Suharto stressed "independence" as part of the policies of the new cabinet, in other words, independence from other countries and international organizations, in order to avoid the turmoil brought by globalization. By taking a firm stance against international pressure, President Suharto was distancing himself from the IMF-led economic rescue programs. Also, the new cabinet contained many members who adopted a stance of economic nationalism, and it was clear that the new government was quite introverted. Also included were those who were personally close to the president, such as Suharto's own daughter and a business leader.

After the announcement of the postponement of the IMF's second disbursement on March 6, 1998, the government and the IMF continued their negotiations over the review of conditionality. On April 10, both sides reached agreement on new conditions. The main points were (i) stability of the rupiah exchange rate, (ii) reinforcement and promotion of restructuring of the banking sector, (iii) implementation of structural reforms for the improvement of economic efficiency and the strengthening of competitiveness, (iv) provision of a framework for the resolving of private sector enterprise debt problems, and (v) normalization of trade financing, in order to restore domestic production and export activities. While the details of the agreement did not differ substantially from the January 15 agreement, conditions pertaining to the continuation of subsidies and implementation periods for structural reforms, for example, were made less strict.

After the inauguration of the new Habibie cabinet, the Indonesian government and the IMF renewed the negotiations on the resumption of financial aid, which had been interrupted by the political turmoil, and on June 24, 1998, agreed upon a supplementary memorandum

concerning new economic and financial policies. This was an amendment of the April 10 memorandum, in view of the economic turmoil that had resulted from the May rioting and cabinet changeover. Whereas previously the IMF had insisted upon austerity measures, they now accepted a certain amount of expenditure for the purposes of social stability, and the fiscal balance deficit range was extended. In order to lessen the impact of the worsening crisis on the poorest classes, the implementation of a safety net program was accepted.

Following this, the Indonesian government and the IMF have been holding regular talks on the progress of the economic structural reforms, and exchanging memoranda. The main topics of these talks are financial policies, privatization of national enterprises, restructuring of the banking sector, private sector foreign debts, etc. The IMF was satisfied that economic structural reforms were progressing well, and that the economic situation was recovering. On November 13, 1998, it was agreed that the monthly assessment of compliance with conditionality would now be conducted bimonthly, and that after six months would be conducted once every quarter.

2.2 IMPLEMENTATION OF ECONOMIC REFORM PROGRAMS

2.2.1 Austerity Measures

In order to reduce the current expenditure deficit that was behind the currency crisis, the IMF required the management for the restraint of internal demand. This included the reduction of agricultural and petroleum subsidies, in order to cut the fiscal balance. However, due to the popular opposition to the abolition of subsidies, and the social unrest caused by increased numbers of poor as a result of the economic crisis, the IMF approved the expansion of expenditures on social safety net programs. The Indonesian government, as part of social safety net programs, implemented the payment of rice subsidies, community support programs and the introduction of a micro credit scheme to assist small businesses.

Meanwhile, the government has been moving ahead with cuts in subsidies of other agricultural products, and is phasing out subsidies for wheat, sugar and soybeans. In place of abolishing subsidies for soy meal, fishmeal and maize, the government has offered to remove

import taxes.

2.2.2 Strengthening of the Financial Sector

The Indonesian government, in keeping with the schedule agreed with the IMF, is taking positive steps to tackle the restructuring of the financial sector. Major plans include (i) amending the banking law to abolish restrictions on foreign investment and strengthening the authority of the central bank, (ii) capital injection into private sector commercial banks with an equity ratio of minus 25% to plus 4%, (iii) merging of four state banks into the newly formed Bank Mandiri, and (iv) restructure of banks taken over or ordered to stop operation by the government.

2.2.3 Private Sector Foreign Debt

About 2,000 local private enterprises hold a collective foreign debt of \$64 billion, and resolution of the private sector debt problem is as important to economic recovery as the reconstruction of the banking sector. The government hopes to resolve the private sector debt problem by the introduction of the scheme of the Indonesian Debt Restructuring Agency (INDRA), new bankruptcy procedures with the new bankruptcy law, and negotiations between the creditors and debtors under the Jakarta Initiative (JI). The government has started accepting applications by firms for the INDRA scheme, but few firms have registered so far. In addition to the high interest rates on domestic borrowing, and the fact that the rupiah exchange rate has not yet recovered sufficiently, the format of the contract forms has not yet been drawn up, and this is hindering the INDRA scheme. JI is intended to complement the new laws and INDRA, and is a support strategy announced by the government in September 1998, for the handling of private sector debt. A special government team is working to realize negotiation and agreement between debtors and creditors, with participation in INDRA as a premise.

2.2.4 Economic Structural Reform

The IMF has identified the reform of an economic structure steeped in bribery, corruption and nepotism (KKN) as an indispensable step toward economic reconstruction, and has called for the liberalization of distribution sector, the abolition of monopolies and the abolition of special privileges for family businesses. The Indonesian government has introduced measures such as the abolition of special privileges for the national automobile industry, the liberalization of trading in various commodities, such as cement, paper and plywood, the liberalization of foreign investment in wholesale and retail, the abolition of the monopoly over clove trading, and the permitting of private sector participation in rice importing. The monopoly of the Food Supply Agency (BULOG) over products other than rice, such as flour, sugar and soybeans, etc., has been abolished.

2.2.5 Privatization of State Enterprises

The Indonesian government has produced a mid-term master plan for the privatization and restructuring of all state enterprises. From 1999 until 2001, privatization will focus on hotels, trading, construction, civil engineering, mining and fertilizer production companies. The restructuring plan calls for greater efficiency in state enterprises, through greater management autonomy, enhanced competitive strength, budget cuts and the phased abolition of easy credit.

The Indonesian government plans to privatize 6 state enterprises in fiscal 1998/99. The firms to be privatized are the cement manufacturer Semen Gresik, the international communications enterprise Indosat, harbor management enterprise PT Pelabuhan Indonesia II, airport management enterprise PT Angkasa Pura II, agricultural company, PT Perkebunan Nusantara IV, and others. Also, the government is implementing supervision of agencies whose business details were unclear, such as the power company PLN, BULOG, the oil company Pertamina and the Reforestation Fund.

3. MACRO ECONOMIC TRENDS

3.1 ECONOMIC SITUATION IN 1997

The real economic impact of the currency crisis was to cause the exchange rate to drop, and interest rates to soar, effectively slowing down the Indonesian economy by a considerable degree, in the latter half of 1997. Tightening of monetary policies made fund raising all the more difficult for companies and the financial sector. Inflated interest costs not only worsened the corporate earnings situation for domestic companies, but also blunted investment appetites. The drop in the exchange rate caused the investment environment in Indonesia to become opaque, seriously blunting the investment appetites of overseas enterprises also. The government's postponement of big projects also contributed to the slowing of the economy. As a result of worsened business performance, private companies cut their expenditures and unemployment increased, all of which contributed to slow private consumption as well.

As the smoke from the forest fires on Sumatra and Kalimantan lingered, this not only affected economic activity, but the tourist industry also suffered. Further, the droughts brought on by El Niño seriously affected agriculture.

Consumer prices which had stabilized since March 1997, began to rise rapidly after August. Inflation throughout the year reached 11.1%. Soaring food prices pushed other prices up. Further, the falling exchange rate for the rupiah was a major factor in raising costs in Indonesia, whose economy relies heavily on importing raw materials and capital goods. Consumer price increases in 1997 reached 11%.

These factors combined to cause the GDP growth rate for 1997 fall to 4.7%, considerably below the 7.8% figure for 1996. In addition, this was also below the target growth rate of 6.2% set out in the 6th five-year development plan (REPLITA VI).

3.2 ECONOMIC SITUATION IN 1998

On the political front, President Habibie's new administration pushed ahead with resolute reforms for democratization, and on the economic front, pursued the economic structural reforms agreed upon with the IMF. However, in spite of the government's positive attempts to tackle economic structural reform, and in spite of the assistance from the IMF, the World Bank and other supporting agencies and countries, Indonesia's economy suffered its biggest crisis since the economic crises of the 60's. The problems faced by the Indonesian economy were as follows.

- i. The sharp drop in the exchange rate: This was largely caused by the spread of the Asian currency crisis, the massive outflow of domestic capital out of the country, and the political turmoil caused by the departure of President Suharto.
- ii. Increased foreign debt: With the rupiah's fall, the foreign debt repayment burden carried by private sector companies increased dramatically, and much of the debt became irrecoverable. Public foreign debt also had to be rescheduled.
- iii. Soaring inflation: Severe and widespread drought caused a food shortage. This, coupled with the increase in prices of imported goods, resulted in an inflation rate of 77.6% for the year.
- iv. Banking crisis: With the closure of failed banks in November, 1997, financial instability spread to the major banks also. The banks' bad debt ratio is said to have reached 60%, and the nation's financial functions fell into a state of paralysis.
- v. Continued high interest rates: Interest rates have remained high in order to support the exchange rate and to curb inflation.
- vi. Sluggish exports: Difficulties in importing, and the stagnant crude oil prices, have resulted in sluggish exports, 8.6% down from the previous year, in dollar base terms. On the other hand, as imports were down 34.4% from the previous year, the balance of trade was in the black by a considerable amount.
- vii. Low domestic demand: The increased unemployment rate and the soaring interest rates caused a sharp drop of domestic demand. This has seriously affected the real economy.

As a result of the above, the GDP growth rate in 1998, was a shocking 13.7% down from the previous year. Minus growth in the construction, trading and manufacturing industries, and in the financial sector, was particularly large.

3.3 ECONOMIC SITUATION IN 1999

The severe economic situation in Indonesia has continued into 1999. Political and social stability has been maintained, and the biggest issue now is economic reconstruction. Important events scheduled for 1999 are the general election in June, and the People's Assembly (MPR) for the selection of a new president, in November. Economic reconstruction will depend upon the inauguration of a new cabinet with political stability.

With regard to economic policy, the government is continuing with policies based upon the agreements with the IMF. Signs of macro-economic improvement are appearing, such as a limit to the rise in inflation, the recovery of the rupiah's exchange rate, a gradual lowering of interest rates and a slowing of the fall in the economic growth rate. However, even if political turmoil has been averted, it will be difficult for the economy to fully turn around to recovery in 1999. This is because (i) there is little prospect for a recovery in either consumption or investment, (ii) neither is there much chance that exports will grow sufficiently to cover the slump in domestic demand, and (iii) the restructuring of the banks and resolution of the private sector foreign debt problem are likely to take some time.

The vicious cycle of sluggish domestic demand leading to a worsening of the business situation for enterprises, leading in turn to increased unemployment and wage freezes, leading back to sluggish domestic demand, means that it will be difficult for demand to recover. The 1999/2000 budget, announced in January, 1999, is a very tight one, down 17.3% from the previous year. Constrained budgetary expenditures and high interest rates have been limiting the effectiveness of the government's economic stimulus measures.

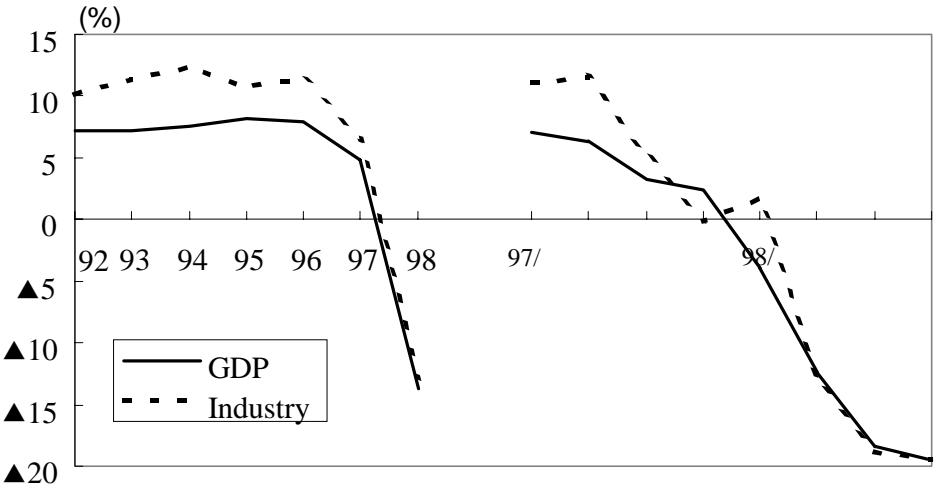
While enterprises are saddled with large debts and surplus production equipment, there is little prospect of recovery of the private sector's interest in investment. Also, as regards overseas investment, investors will be keeping an eye on the political situation, and, even if a new

cabinet is inaugurated, are unlikely to return immediately. Accordingly the quick recovery of foreign direct investments can not be expected. Economic reconstruction will also require a return of the domestic capital that is said to have hemorrhaged out of the country in great quantities as the economic crisis got fully under way. However, this will require the return of political stability as a prerequisite, and there is little chance of a serious return of capital in 1999.

As for exports, in addition to such international market factors as little hope for recovery of crude oil prices and stagnated imports by industrialized nations, such domestic factors as the difficulty in importing raw materials because of paralyzed trade credit function and loss of overseas buyers' confidence due to the political instability will have negative impact on growth. Therefore, while figures will be better than those of 1998, there is little prospect for a significant growth of exports in 1999.

Resolution of the private sector foreign debt problem requires the recovery of the rupiah's exchange rate, and a willingness on the part of creditors to waive debts or postpone repayment, but negotiations will not progress smoothly. The bank restructuring appears to be progressing according to plan, but the elimination of bad debt is proving difficulty, and it does not appear that the banks are returning to full financial health, or that financial functionality has recovered.

Fig. 2-3-1 Growth Rate of GDP and the Industrial Sector (Year on Year Basis)



Source: Badan Pusat Statistik

4. THE CURRENT SITUATION IN THE MANUFACTURING INDUSTRY

4.1 SPECIAL CHARACTERISTICS OF INDUSTRIALIZATION

The motive force behind the economic growth of 1987 and beyond was the advancement of the industrial sector, particularly that of the exports of non-petroleum sector. Exports of Indonesian industrial goods expanded rapidly from the late 1980s, and direct investment from Asian countries increased also, for the purposes of establishing export bases. Indonesia set the utilization of its abundant workforce, the introduction of foreign capital and the attracting of foreign assembler firms as important elements of its industrialization strategies. In the latter half of the '90s, in order to strengthen the industrial base and inter-industry linkage, the development of domestic supporting industries capable of supplying parts and components to the assemblers became a hot topic. In the 6th five-year development plan (REPELITA VI), which started from April 1994, the development of export oriented industries and small industries, the strengthening of inter-industry linkage and the implementation of strategies in support of these ideas, were all given great importance.

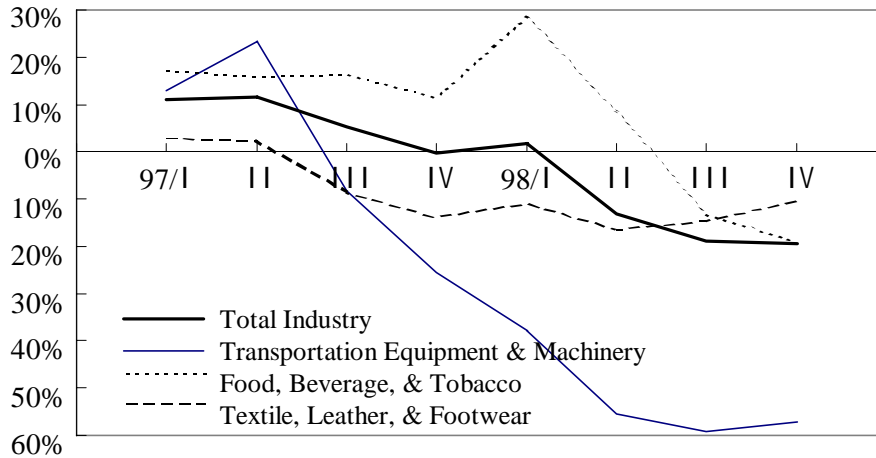
4.2 RECENT TRENDS IN PRODUCTION

Due to the economic crisis since July 1997, the Indonesian manufacturing industry (i) underwent a drastic shrinking of the domestic market, (ii) saw import prices for raw materials shoot up, (iii) faced increasing difficulty in procuring materials, and (iv) suffered an increase in the burden of foreign debts.

The flow of growth rates of the added value worth of the manufacturing industry for the same period in the previous year is as illustrated in Figure 2-4-1. From the third quarter of 1997, the shrinking of the domestic market caused the growth rate to begin to decline. The political instability of the second quarter of 1998 caused the growth rate to drop very sharply. In particular, the figures for transportation equipment and machinery dropped steeply, by more than 60%. The changes in the production indices for large and medium sized companies dealing with the products subject to this Study are as illustrated in Figure 2-4-2. As can be

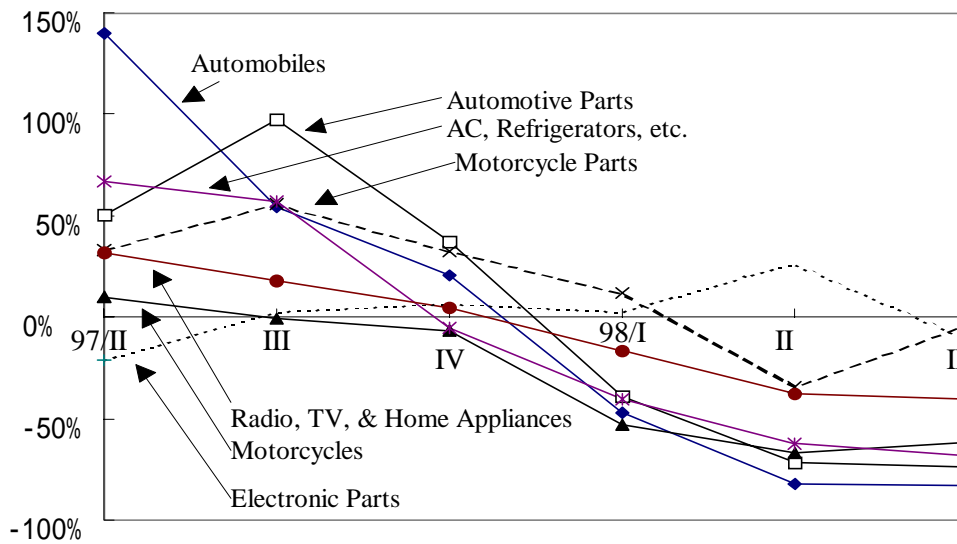
seen, from 1998, figures dropped dramatically.

Fig. 2-4-1 Growth Rate of Value Added in the Manufacturing Industry (Year on Year Basis)



Source: Badan Pusat Statistik

Fig. 2-4-2 Changes in Quarterly Production Indices for Large and Medium Sized Companies (Year on Year Basis)

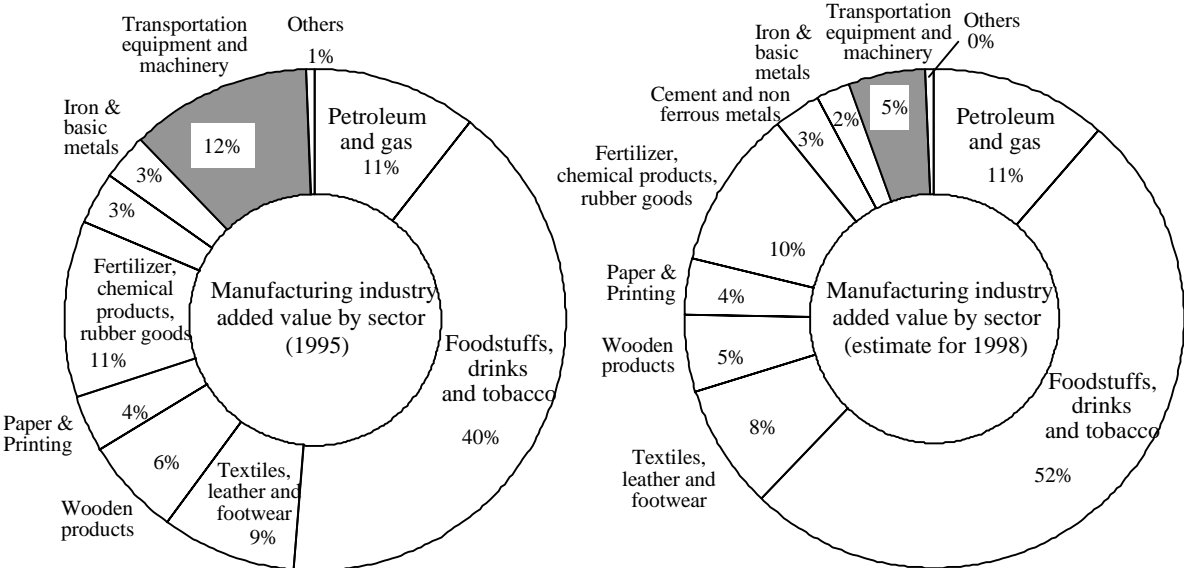


Source: Badan Pusat Statistik

4.3 STRUCTURE OF INDUSTRIAL SECTOR

With the progress of industrialization, the ratio of GDP accounted for by the manufacturing industry has increased steadily. Over the last three years, it has been around 25%. Figure 2-4-3 shows a breakdown of the manufacturing industry by sector. In 1995, transportation equipment and machinery accounted for 12% of the total. However, due to the effects of the economic crisis, production shrank considerably, so that the figure had dropped to around 5% in 1998.

Fig. 2-4-3 Breakdown of Manufacturing Industry Added Value by Sector



Source: Badan Pusat Statistik
 Note: At constant 1993 prices basis

Table 2-4-1 shows the proportion of the subject industries, namely the machinery, automotive and electric and electronic industries, within the whole manufacturing industry of large to medium sized companies, with 20 employees or more. The automotive and electric and electronic industries account for more than 7% of the total on an output value basis. In recent years, the growth in the electric and electronic industries has been particularly outstanding. The machinery industry still has some way to go in its development, and its weight is still slight. The share occupied by these three industries appears to have greatly diminished in 1998 because they suffered to a relatively high degree from the economic crisis.

Table 2-4-1 Size of Related Industries and their Share of the Total Manufacturing Industry (1996)

Industry and Industrial Code	Value of Gross Output (Billion Rp.)		Value Added (Billion Rp.)		Number of Establishments		Number of Workers (Thousand Persons)	
382 Machinery Industry	3,935	1.6%	1,246	1.5%	353	1.5%	45	1.1%
38431 Manufacture of motor vehicles	4,729	1.9%	2,247	2.6%	15	0.1%	15	0.3%
38432 Manufacture of motor vehicle bodies	478	0.2%	193	0.2%	130	0.6%	18	0.4%
38433 Manufacture of motor vehicle components and apparatus	3,921	1.6%	1,413	1.7%	134	0.6%	29	0.7%
38441 Manufacture of motorcycles and motorized tricycles	3,470	1.4%	1,413	1.7%	6	0.0%	7	0.2%
38442 Manufacture of motorcycle, motorized tricycle components and apparatus	5,885	2.4%	2,040	2.4%	55	0.2%	13	0.3%
Automotive Industry	18,484	7.6%	7,307	8.6%	340	1.5%	82	1.9%
383 Electric and Electronic Industry	18,135	7.4%	6,417	7.5%	498	2.2%	166	3.9%
Manufacturing Total	244,011	100.0%	85,241	100.0%	22,997	100.0%	4,215	100.0%

Source: *Statistik Industri Besar dan Sedang 1996*, Badan Pusat Statistik

Note: Combined figures for large and medium sized companies with 20 employees or more

4.4 IMPACT OF ECONOMIC CRISIS ON THE SUPPORTING INDUSTRIES

The results of the questionnaire survey conducted in February, 1999, show that the economic crisis has given a serious influence on the supporting industries.

4.4.1 Impact on Business

The general impact of the economic crisis on the supporting industries is summarized in Table 2-4-2. The number of companies which have felt a serious or very serious impact account for 76% of the 331 companies which answered the questionnaire. Larger companies have suffered from more serious impact than smaller companies.

Table 2-4-2 Evaluation of Impact of Economic Crisis

Unit: % & No. of Companies

	Total	Companies by Size of Employees				
		19 or Less	20 - 99	100 – 299	300 or More	
		Very Serious Impact	41.7	40.7	42.0	47.2
Answer (%)	Serious Impact	34.1	32.7	39.3	19.4	37.7
	Slightly Serious Impact	15.1	11.5	9.8	27.8	22.6
	No Change	4.8	9.7	2.7	2.8	1.9
	Positive Impact	4.2	5.3	6.3	2.8	—
	No. of Effective Answers	331	113	112	36	53

Source: Questionnaire Survey, JICA Study Team

Based on the questionnaire survey results, the impact of the economic crisis on domestic sales is as shown in Table 2-4-3. More than 80% of companies which answered the questionnaire report decreases in their domestic sales after the economic crisis. Companies whose domestic sales decreased by more than 50% account for 76% of the total. Those which have lost more than 75% of domestic sales account for 29% of the total. These figures show the seriousness of the impact on domestic sales. There is little difference in the degree of impact on domestic sales by size of companies, and the average ratio of decrease in domestic sales are around 60%.

Table 2-4-3 Evaluation of Impact of Economic Crisis on Domestic Sales

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Decreased	85.2	82.5
No Change	8.6	12.3		4.5	5.9	12.5
Increased	6.2	5.3		8.9	11.8	—
No. of Effective Answers		324	114	112	34	48

Source: Questionnaire Survey, JICA Study Team

Table 2-4-4 Ratio of Decrease in Domestic Sales

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Less than 10%	0.4	-
Less than 25%	4.7	5.4		2.1	—	8.3
Less than 50%	18.8	21.5		16.0	17.4	25.0
Less than 75%	47.3	46.2		53.2	52.2	36.1
Less than 100%	27.3	25.8		27.7	26.1	30.6
100% or More	1.6	1.1		1.1	—	—
No. of Effective Answers		256	93	94	23	36
Average Decrease Ratio		60.1	58.8	62.4	56.7	58.1

Source: Questionnaire Survey, JICA Study Team

Table 2-4-5 Ratio of Increase in Domestic Sales

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Less than 10%	-	-
Less than 25%	52.9	40.0		66.7	33.3	-
Less than 50%	11.8	-		22.2	-	-
Less than 75%	11.8	40.0		-	-	-
Less than 100%	-	-		-	-	-
100% or More	23.5	20.0		11.1	66.7	-
No. of Effective Answers		17	5	9	3	-
Average Increase Ratio		42.6	51	28.9	70	-

Source: Questionnaire Survey, JICA Study Team

The experience in export businesses of companies which responded to the questionnaire is shown in Table 2-4-6. Approximately half of the companies with 100 – 299 employees and 90% of the companies with 300 or more employees export or have exported their products. Among the companies with 99 or less employees, the proportion of companies with export experience is very small.

The impact of the economic crisis on exports is as shown in Table 2-4-7. Nearly 50% of the exporting companies have decreased exports. On the contrary, nearly 30% of the total have increased its exports. It is considered that such factors as destination countries, export items and the parent companies' worldwide export policy in the case of foreign affiliated companies, affect the performance of exports.

Table 2-4-6 Experience of Exports

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Have Experience	30.8	7.8
	Have No Experience	69.2	92.2	82.1	50.0	11.3
No. of Effective Answers		334	116	112	36	53

Source: Questionnaire Survey, JICA Study Team

Table 2-4-7 Evaluation of Impact of Current Economic Crisis on Exports

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Decreased	45.5	70.0
No Change	25.7	20.0		15.8	36.8	28.9
Increased	28.7	10.0		36.8	42.1	26.7
No. of Effective Answers		101	10	19	19	45

Source: Questionnaire Survey, JICA Study Team

Table 2-4-8 Ratio of Decrease in Exports

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Less than 10%	2.9	-
Less than 25%	14.3	14.3		-	-	25.0
Less than 50%	31.4	14.3		-	66.7	43.8
Less than 75%	40.0	42.9		83.3	33.3	25.0
Less than 100%	8.6	28.6		16.7	-	-
100% or More	2.9	-		-	-	-
No. of Effective Answers		46	7	6	3	16
Average Decrease Ratio		45.4	54.3	68.3	33.3	31.2

Source: Questionnaire Survey, JICA Study Team

Table 2-4-9 Ratio of Increase in Exports

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 – 299	300 or More
			Answer (%)	Less than 10%	-	-
Less than 25%	29.2	-		14.3	42.9	30.0
Less than 50%	8.3	-		14.3	-	10.0
Less than 75%	16.7	-		28.6	14.3	10.0
Less than 100%	8.3	-		14.3	14.3	-
100% or More	37.5	-		28.6	28.6	50.0
No. of Effective Answers		24	-	7	7	10
Average Increase Ratio		98.1	-	102.1	115	83.5

Source: Questionnaire Survey, JICA Study Team

The impact of the economic crisis on profits is as shown in Table 2-4-10. Approximately 80% of the total respondents answered the decrease in their profits. Among 312 companies which responded to this question, 162 companies recorded a more than 50% drop in their profits. On the contrary, 24 companies increased their profits. It is considered that the expansion of exports contributes to increases in profits in larger companies and the domestic sales growth contributes in smaller companies (Table 2-4-13).

Table 2-4-10 Evaluation of Impact of Current Economic Crisis on Profits

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 – 299	300 or More
			Answer (%)	Decreased	81.7	79.3
No Change	10.6	15.3		6.7	12.1	9.8
Increased	7.7	5.4		10.6	9.1	7.8
No. of Effective Answers		312	111	104	33	51

Source: Questionnaire Survey, JICA Study Team

Table 2-4-11 Ratio of Decrease in Profits

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Less than 10%	0.9	1.2
Less than 25%	9.1	8.1		7.7	10.5	10.3
Less than 50%	16.4	22.1		9.0	21.1	20.7
Less than 75%	38.2	39.5		44.9	31.6	24.1
Less than 100%	20	26.7		17.9	21.1	6.9
100% or More	15.5	2.3		19.2	15.8	37.9
No. of Effective Answers		220	86	78	19	29
Average Decrease Ratio		64.8	55.5	67.2	59.2	88.7

Source: Questionnaire Survey, JICA Study Team

Table 2-4-12 Ratio of Increase in Profits

Unit: % & No. of Companies

		Total	Companies by Size of Employees			
			19 or Less	20 - 99	100 - 299	300 or More
			Answer (%)	Less than 10%	5.0	-
Less than 25%	50.0	40.0		40.0	100.0	50.0
Less than 50%	25.0	40.0		30.0	-	-
Less than 75%	15.0	20.0		20.0	-	-
Less than 100%	-	-		-	-	-
100% or More	5.0	-		10.0	-	-
No. of Effective Answers		20	5	10	3	2
Average Increase Ratio		33.4	30	45.5	13.3	11.5

Source: Questionnaire Survey, JICA Study Team

Table 2-4-13 Number of Companies Which Have Received Positive Effect of the Economic Crisis

Unit: No. of Companies

	Total	Companies by Size of Employees			
		19 or Less	20 - 99	100 - 299	300 or More
		No. of Companies Which Increased Domestic Sales	20	6	10
No. of Companies Which Increased Exports	29	1	7	8	12
No. of Companies Which Increased Profits	24	6	11	3	4

Source: Questionnaire Survey, JICA Study Team

As a result of the drastic drop in domestic sales and exports, companies have reduced their production, which has led to the drop of their operating ratios. The comparison of operating ratios before and after the economic crisis is shown in Table 2-4-14. Before the economic crisis, 87% of the companies achieved an operating ratio of above 75%. The operating ratios of more than 50% of the companies are currently below 50%.

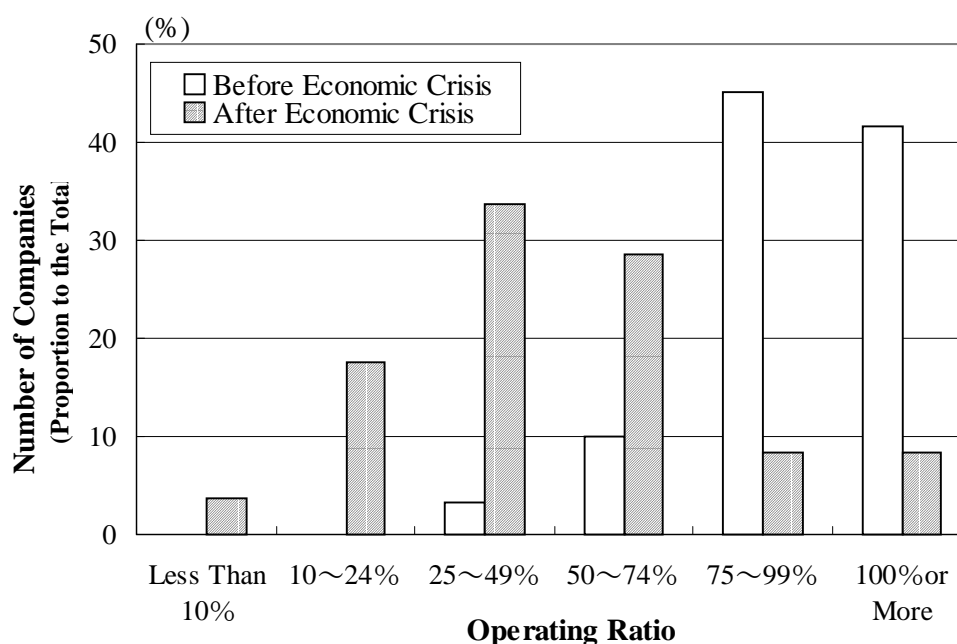
Table 2-4-14 Operating Ratios Before and After Economic Crisis

Unit: % & No. of Companies

		Total		Companies by Size of Employees							
				19 or Less		20 - 99		100 - 299		300 or More	
		Before	After	Before	After	Before	After	Before	After	Before	After
Answer (%)	Less Than 10%	-	3.6	-	1.9	-	4.2	-	7.1	-	2.8
	10~24%	-	17.5	-	15.2	-	19.8	-	17.9	-	19.4
	25~49%	3.2	33.6	0.9	38.1	3.0	35.4	11.1	39.3	5.4	11.1
	50~74%	10.1	28.5	7.5	24.8	11.1	24	7.4	25.0	13.5	52.8
	75~99%	45.0	8.4	42.5	10.5	44.4	6.3	51.4	3.6	48.6	11.1
	100%or More	41.7	8.4	49.1	9.5	41.4	10.4	29.6	7.1	32.4	2.8
No. of Effective Answers		278	274	106	105	99	96	27	28	37	36

Source: Questionnaire Survey, JICA Study Team

Fig. 2-4-4 Distribution of Operating Ratios Before and After Economic Crisis



Source: Questionnaire Survey, JICA Study Team

2.4.2 Measures Taken to Overcome the Impact of the Economic Crisis

Measures taken by companies to overcome the impact of the economic crisis are shown in Table 2-4-15. Approximately 62% of the 322 companies which answered the questionnaire have reduced the number of their employees. The proportion of companies which have reduced the number of their employees increases as the size of companies becomes smaller. Table 2-4-16 shows the changes in the number of employees before and after the economic crisis. 161 companies answered a change in the number of employees before and after the economic crisis. The average number of employees per company of these 161 companies decreased by 41% from 210 persons before the crisis to 125 persons after the crisis. The total number of employees of 161 companies decreased from 34 thousand to 20 thousand. Thus, the economic crisis has caused 14 thousand persons of the 161 companies to become unemployed.

The second most popular measure is to find new domestic customers, a step which has been taken by 47% of the respondent companies. The percentage of companies which have taken this measure is higher among smaller companies. However, new market development for export is higher as the size of companies becomes larger. This shows that larger companies have more export potential.

Table 2-4-15 Measures Taken to Overcome Impact of Economic Crisis

Unit: % & No. of Companies

		Total				
		Companies by Size of Employees				
		19 or Less	20 - 99	100 – 299	300 or More	
Answer (%)	To find new domestic customers	46.6	50.0	53.6	33.3	35.3
	To find new markets for export	38.2	14.8	36.4	52.8	72.5
	To diversify products	32.6	38.0	31.8	27.8	29.4
	To stop operation tentatively	9.0	4.6	10.0	16.7	9.8
	To reduce the number of employees	62.1	73.1	60.0	61.1	51.0
	To ask support from parent company and related companies	20.8	15.7	21.8	25.0	31.4
	To ask support from financial institutions	16.8	16.7	20.0	8.3	19.6
	Others	12.4	16.7	12.7	5.6	5.9
No. of Effective Answers		322	108	110	36	51

Source: Questionnaire Survey, JICA Study Team

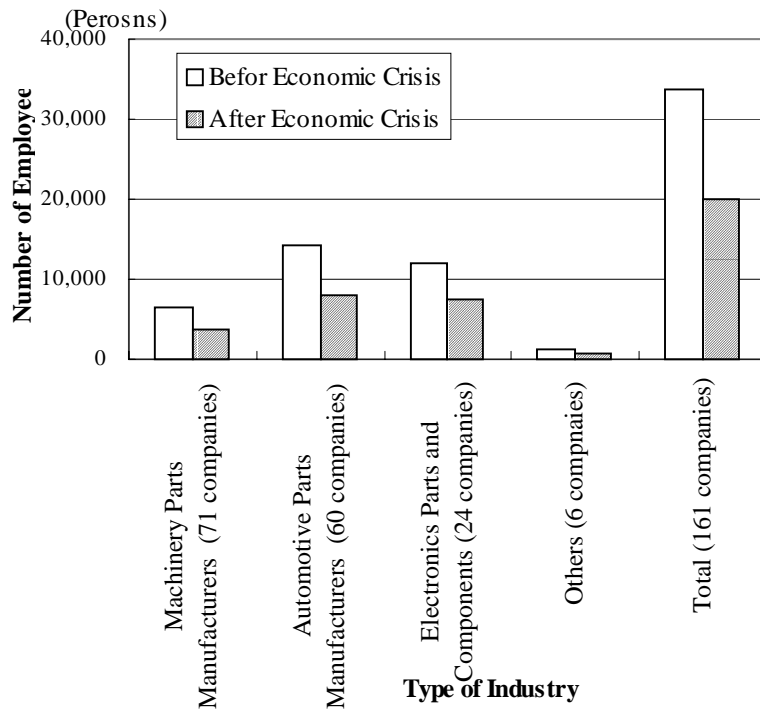
Table 2-4-16 Number of Employees Before and After Reduction (161 Companies)

Unit: % & No. of Companies

		Total									
		Companies by Size of Employees									
		19 or Less		20 - 99		100 – 299		300 or More			
		Before	After	Before	After	Before	After	Before	After	Before	After
Answer (%)	9 or Less Employees	6.2	26.1	10	42	-	-	-	-	-	-
	10 – 49 Employees	50.9	44.7	64	33	17	37	-	1	-	-
	50 – 99 Employees	11.8	8.7	1	-	18	14	-	-	-	-
	100 or More Employees	31.1	20.5	-	-	16	-	16	15	17	17
No. of Effective Answers		161	161	75	75	51	51	16	16	17	17
Average No. of Employees per Company		210	124.5	17.9	9.3	93.1	42.8	311.8	160.1	1,269.7	816.6

Source: Questionnaire Survey, JICA Study Team

Fig. 2-4-5 Total Number of Employees Before and After the Economic Crisis (161 companies)



Source: Questionnaire Survey, JICA Study Team

2.4.3 Evaluation of the Necessity for the Assistance from the Government

The needs of the respondent companies for financial support from the government are shown in Table 2-4-17. Respondent companies highly evaluated a special scheme for small and medium enterprises and investment incentives. However, R&D incentives received relatively lower priority.

Table 2-4-17 Necessity of Financial Support from the Government

Unit: % & No. of Companies

		Types of Financial Support				
		Special Financial Scheme for Small and Medium Enterprises	Investment Incentives		R&D Incentives	
			Financial Support	Tax Reductions	Financial Support	Tax Reductions
Answer (%)	Very Important	67.4	60.9	60.1	49.2	48.9
	Important	29.2	35.6	33.6	45.0	42.0
	Not Important	3.4	3.5	6.3	5.8	9.1
No. of Respondent Companies		319	317	318	309	307
Average Score*		1.64	1.57	1.54	1.43	1.4

Source: Questionnaire Survey, JICA Study Team

Note: * An average score is calculated by giving 2 points to the answer, “Very Important,” 1 point to “Important,” and 0 points to “Not Important.”

The needs for export promotion support from the government are shown in Table 2-4-18. Because not all the respondent companies are interested in export promotion, average scores for export promotion support measures are relatively low compared with the financial support mentioned above. The number of companies interested in export promotion is considered to be 178, nearly 60% of the total, consisting of 103 companies exporting and 75 companies intending to start exports. Among export promotion measures, measures receiving high evaluation are the provision of information of overseas markets and export incentives in the form of financial support or tax reduction. The measure of the lowest evaluation is an export registration system.

Table 2-4-18 Necessity of Export Promotion Support from the Government

Unit: % & No. of Companies

		Types of Export Promotion Support							
		Trade Missions Overseas	Trade Fairs Overseas	Information on Overseas Markets	Export Registration System	Consulting Service on Trading	Training Courses for Trading	Export Incentives	
								Financial Support	Tax Reduction
Answer (%)	Very Important	34.1	29.1	48.4	16.7	29.4	29.4	40.9	43.0
	Important	36.9	49.4	43.4	47.5	57.5	56.8	48.4	49.5
	Not Important	29.0	21.5	8.2	35.4	13.1	13.9	10.7	7.5
No. of Respondent Companies		317	316	318	305	313	310	308	307
Average Score*		1.05	1.08	1.40	0.81	1.16	1.15	1.30	1.36

Source: Questionnaire Survey, JICA Study Team

Note: * An average score is calculated by giving 2 points to the answer, “Very Important,” 1 point to “Important,” and 0 points to “Not Important.”

The evaluation of the necessity of development programs for the small and medium scale industries (SMIs) by the government is shown in Table 2-4-19. They are the programs which were proposed for the development of the supporting industries in Indonesia by the previous study. The most needed programs are the introduction of a special loan scheme for SMIs and the strengthening of technical support by public institutes, followed by the support for joint R&D activities by SMIs, technical guidance visits by experts, joint support of sub-contractors by the Government and parent companies. On the contrary, such programs as the reinforcement of industry associations and the development of an industrial estate for SMIs receive the lowest evaluation. From the results of the evaluation, it is considered that the respondent companies, which are in a severe business environment, express high demand for programs which will create direct and immediate results for their sales and technological improvements.

Table 2-4-19 Necessity of Development Programs for the Small and Medium Industries (SMIs) by the Government

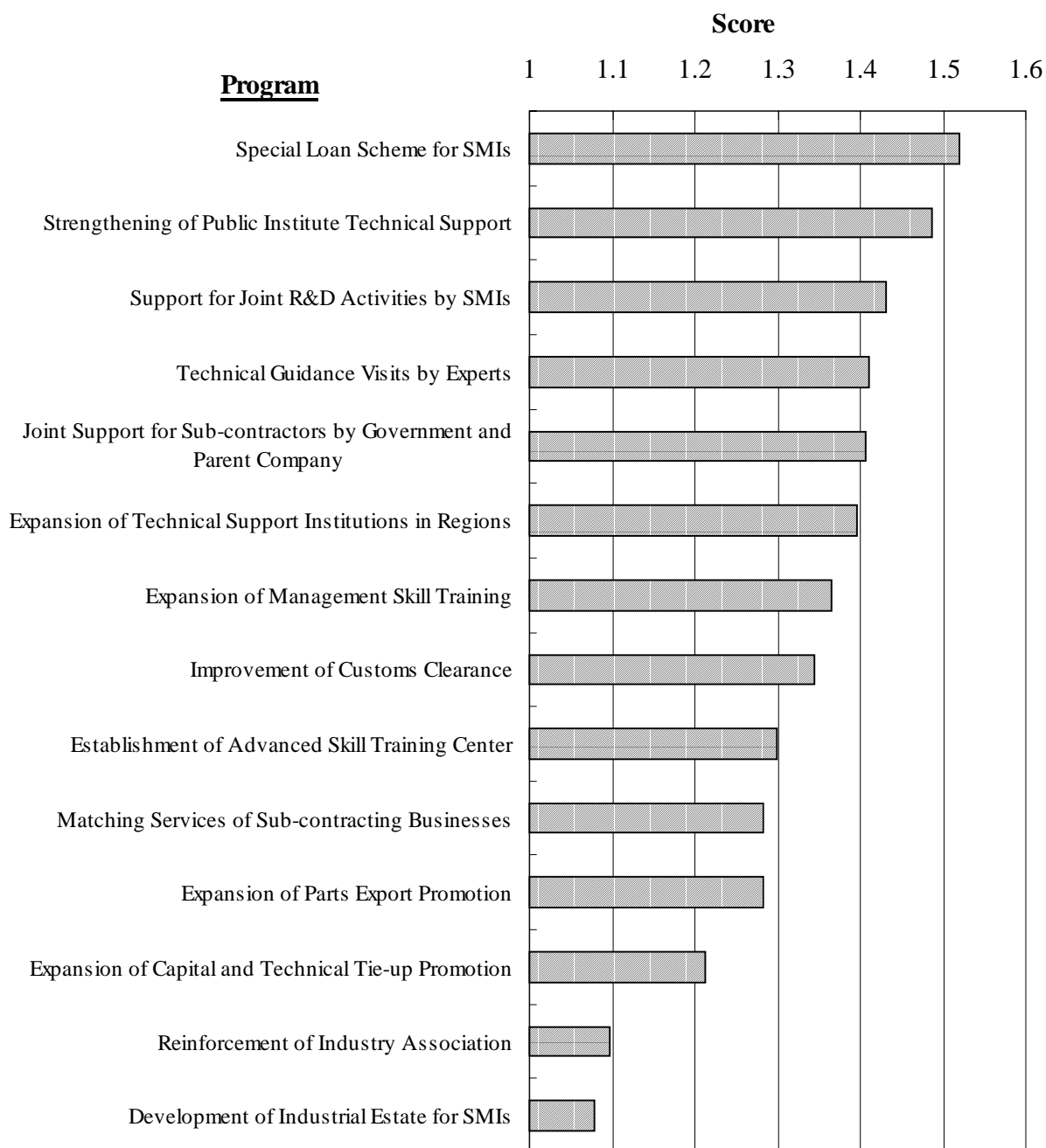
Unit: % & No. of Companies

		Types of Development Program for SMIs													
		Strengthening of Public Institutes Technical Support	Support for Joint R&D Activities by SMIs	Expansion of Technical Support Institutions in Regions	Technical Guidance Visits by Experts	Joint Support for Sub-contractors by Government and Parent Company	Reinforcement of Industry Association	Special Loan Scheme for SMIs	Establishment of Advanced Skill Training Center	Expansion of Management Skill Training	Development of Industrial Estate for SMIs	Improvement of Customs Clearance	Matching Services of Sub-contracting Businesses	Expansion of Parts Export Promotion	Expansion of Capital and Technical Tie-up Promotion
Answer (%)	Very Important	51.6	46.9	44.8	43.9	45.6	22.3	53.5	36.6	42.5	26.3	43.7	34.7	37.6	27.6
	Important	45.6	49.4	49.8	53.3	49.4	65.1	45.0	56.5	51.6	55.4	46.9	58.9	53.1	66.1
	Not Important	2.8	3.8	5.3	2.8	5.0	12.6	1.6	6.8	5.9	18.4	9.3	6.4	9.3	6.3
No. of Respondent Companies		318	318	319	319	320	318	318	322	320	316	311	314	311	301
Average Score*		1.49	1.43	1.39	1.41	1.41	1.1	1.52	1.3	1.37	1.08	1.34	1.28	1.28	1.21

Source: Questionnaire Survey, JICA Study Team

Note: * An average score is calculated by giving 2 points to the answer, “Very Important,” 1 point to “Important,” and 0 points to “Not Important.”

Fig. 2-4-6 Necessity of Development Programs for the Small and Medium Industries (SMIs) by the Government



Source: Questionnaire Survey, JICA Study Team

Note: * An average score is calculated by giving 2 points to the answer, “Very Important,” 1 point to “Important,” and 0 points to “Not Important.”

CHAPTER III. PRESENT SITUATION OF SYSTEMS AND POLICIES RELATING TO THE DEVELOPMENT OF THE SUPPORTING INDUSTRIES

1. INDUSTRIAL DEVELOPMENT POLICIES

1.1 CURRENT SITUATION OF INDUSTRIAL POLICIES

In 1994, Indonesia started the Second Long-term Development Program (RJP II, from 1994 to 2018), and the Sixth Five-year Plan (REPELITA VI, from 1994 to 98). The objective of RJP II is for Indonesia to develop into an industrialized nation, so that by the end of the 25 years, it will become one of the new industrialized nations. Within the plan, the industrial sector is expected to play a central role in promoting economic growth, by acquiring foreign currency, increasing income and absorbing the workforce.

The main focus of the industrial development policies in REPELITA VI are (i) the development of broad based industries directed at the international market, (ii) promotion of the acquisition of technical skills, (iii) the strengthening of market mechanisms and (iv) a fair dispersion of industries. Strategies for the realization of these aims include (i) the development of a competitive business and investment environment, (ii) the strengthening of industrial capability through the acquisition of technical skills, the development of human resources and restructuring, and (iii) the strengthening of small and medium businesses. In 1995, the target economic growth rate during REPELITA VI was raised from 6.2% to 7.1%. The growth targets for the non petroleum and gas sectors were also raised, from 10.3% to 11.3%. Industries selected for prioritization were (i) agro-industry, (ii) mineral processing industry, (iii) machinery, capital goods and electric and electronics industries (including parts and components and sub-assembly), and (iv) export oriented industries (textiles, etc.).

In REPELITA VI, policies undertaken for the development of the machinery, capital goods and electric and electronics industries include:

- i. to improve the types, quality and performance of available products;

- ii. to provide technological infrastructure and promotion of product standardization;
- iii. to develop small and medium sized vendors and support them through the partnership with larger enterprises;
- iv. to improve the linkage with other industries; and
- v. to develop the strategic industries.

In the development of the metal and machinery sectors, the first step is to develop the supporting industries, in particular, the parts and components industry and the engineering industry. Based on the results of this development stage, the plan will proceed to the next step, with the development of priority industries with high added value.

Industrial production from 1994 to 1996 was able to maintain a high growth rate that exceeded the targets set. However, after the economic crisis of 1997, retrenchment of the domestic market caused a major slump in the production for the domestic market, particularly of durable consumer items. The production of export oriented goods also suffered, due to the difficulty in importing raw materials and the paralysis of the physical distribution functions, etc. This meant that the industrial development strategies, which had been based on the premise of sustained growth, needed to be rethought.

Faced with its worst economic crisis since the 60's, Indonesia's industrial development policies from 1998 onward have shifted their emphasis to emergency programs designed to recover from the economic crisis, and to lessen its effects. The main points of the emergency programs are: (i) support for social and economic groups most seriously affected by the economic crisis; (ii) expansion of business opportunities for small and medium sized enterprises; and (iii) market expansion through exports.

As the Indonesian government continues to implement the economic reform in line with the recommendations of the IMF, it has also expanded expenditure for the construction of a social safety net to assist the poorest group of the society. As part of this initiative, micro credit schemes for small businesses have been introduced. Also, importance has also been placed on the provision of agricultural equipment and machinery with the aim to improve the food supply.

Meanwhile, the government is paying more and more attention to business opportunities for small and medium sized enterprises. The People's Consultative Assembly (MPR) in November, 1998, resolved to promote democratization in economic activities. The development of small and medium sized enterprises is seen as fundamental to the development of the nation's economy, and the assembly resolved to change the situation that large groups dominate the economy. These decisions mean that, in the process of developing the national economy, the growth of small and medium sized businesses will be accorded a greater importance than ever before, and business opportunities for this group will be made available.

As the domestic market shrinks, the industrial sector needs to expand exports in order to sustain production. In 1998, the Ministry of Industry and Trade (MOIT) identified priority sectors for the promotion of export growth. Products prioritized are textiles, woodwork products, metal handicrafts, electronics, metal and automobile parts and components, paper and pulp products, palm oil, leather goods, cosmetics and rubber goods.

In August, 1998, the Ministry of Industry and Trade's Directorate General of the Metal, Machinery and Chemical Industries announced the Operational Technical Measures for fiscal 1998/99, as emergency measures for the promotion of the industries under its jurisdiction. These measures include (i) measures to be conducted in the short term, (ii) special action programs to be implemented in response to the economic crisis, and (iii) the preparation of conditions for economic reform. The principal aims of these measures are as follows.

- i. To relieve the impact of the economic crisis on the national economy.
 - To secure the supply of necessary commodities at appropriate prices.
 - To assist the sections of society most seriously affected by the economic crisis.
 - To expand the capability of providing assistance for agro-industry.
- ii. To realize the recovery of industrial performance.
 - To increase production.
 - To increase exports.
- iii. To promote economic reform.

- To review existing regulations in order to advance economic reform.
 - To abolish preferential systems and policies.
 - To abolish improper transactions.
- iv. To restore confidence in the Indonesian business environment, especially that of foreign investors.

1.2 POLICIES FOR THE MACHINERY INDUSTRY

The main policies proposed in fiscal 1998/99 for the development of the machinery and engineering industries are as follows. Various programs have been planned in the areas of production, investment, import and the development of human resources.

- i. Encouragement of the use of domestically produced goods, based on the presidential decree of 1994, requiring the use of domestic products in the government and state enterprise projects, and encouragement of the people's preferential use of domestically produced goods in response to the economic crisis.
- ii. Granting of pioneer status to the machine tool and precision tool industries. Granting of tax reduction or exemption from corporate tax, import duties and value added tax to eligible enterprises, and providing financing for the acquisition of equipment and premises, etc.
- iii. Increasing the number of firms eligible under the special exporter (PET) system.
- iv. Promotion of the establishment of an export financing organization.
- v. Proposal for the granting of EPTE status to machinery and engineering industries starting production with an export ratio of 25%.

However, in response to the worsening crisis, an emergency program was started in August, 1998. In the machinery industry, the former programs were reviewed in line with the degree of urgency. For example, the industrial standardization program was judged to be of low urgency, and has been postponed. Meanwhile, the reconditioning program for used tires was given higher priority. This is because the soaring price of new tires has given rise to an increased demand for the reconditioning of old tires. Technical guidance and introduction to local mold equipment manufacturers has been provided for small businesses using

domestically produced molds.

The emergency programs place importance on the support for the development of natural resources and the supporting industries. Support for the development of natural resources targets the agriculture industry (rice, maize, palm oil, rubber, coffee, tea and cacao plantations), fishing and livestock industries, forestry, mining (petroleum, gas, ceramics and non ferrous metals), etc. In the case of supporting industries, emphasis has been placed on industries that support the processing of natural resources in particular. The priorities for the development of the machining industry are focussed on machines and equipment for the support of resource based industries. Among these, from the point of view of stabilizing the social safety by ensuring adequate food supplies, agricultural equipment has been given priority. Over the short term, the aim is to increase the supply of agricultural equipment such as (i) land preparation equipment, (ii) crop harvest processing equipment, (iii) crop raising equipment and (iv) agro industry machinery and equipment, etc. After agricultural equipment, machinery and equipment for the development of petroleum and gas resources have been given the next level of priority.

In order to expand production of agricultural and other machinery and equipment, the following policies are to be implemented.

- To ensure smooth distribution by supplying necessary spare parts.
- To ensure the supply of import basic materials for machinery.
- To provide technical guidance.
- To introduce low interest rates working capital schemes and other financial schemes.
- To cooperate with the Department of Agriculture to promote the use of domestically produced machinery and equipment.
- To promote the use of domestically produced parts and components by using repair workshops.
- To implement an agricultural machinery operator program.
- To support mobile units that rent agricultural machinery.
- To implement a program to promote the usage of agricultural machinery, which encourages the migration within the country.

- To develop new business programs to carry out rental of agricultural machinery.
- To provide low interest credit to farmers and fishermen.
- To develop agricultural machinery and equipment that will have an effect on domestic migration and agricultural development programs.

As a representative example of programs for the development of agricultural machinery, there is the utilization of partnership programs. This intends to convert general purpose machinery and equipment into agricultural machinery and equipment. The large and medium sized general purpose engine makers are encouraged to produce special engines for the small sized agricultural equipment manufacturers. These engines are used in manual tractors, threshing machines and rice drying machines.

Currently, there are some small scale agricultural machinery manufacturers already manufacturing agricultural machinery, but their capacity is not enough, and improvements are required. In this respect, GTZ of Germany is providing technical and management guidance to agricultural machinery manufacturers, through the Association for Agricultural Machinery (ALSINTANI).

To support the expansion of the demand for the agricultural equipment industry, there are funding programs to assist in the purchase of agricultural equipment. The government has already introduced 13 types of small agricultural industry credit schemes. Also, there is a plan to promote the establishment of private lease companies. In addition, the Ministry of Industry and Trade and the Ministry of Agriculture have cooperated in setting up demonstration events to show farmers how to use agricultural equipment and machinery.

1.3 POLICIES FOR THE AUTOMOBILE INDUSTRY

1.3.1 Parts and Components Local Content Program and National Car Program

The major characteristics of Indonesia's policies for the automobile industry at the time of the previous study were the local content program and the national car program. In 1993, the government introduced a local content program whereby different rates of import duties

would be levied on parts in accordance with the levels of localization achieved by each automobile assembler or components manufacturer. This was a measure intended to offer preferential import tax treatment to companies that achieved a high level of local content. In February, 1996, the Indonesian government authorized PT Timor Putra Nasional (PT TPN) as a national car program manufacturer. This company was allowed exemption from parts and components import tax and luxury tax, on the condition that it will achieve a 20% local supply rate in the first year of production, followed by 40% in the next year, and 60% in the third year. At the same time, any company that achieved 60% local content would be allowed exemption from luxury taxes.

1.3.2 WTO Arbitration

In 1996, the governments of Japan, the EC and the US appealed to the WTO over Indonesia's national car program. Japan demanded the abolition of the national car program, while the EC and the US demanded the abolition of both the national car program and the parts and components local content program. The US also cited syndicated loans by the banks to PT TPN. The Indonesian government's bilateral talks with these countries failed to reach any agreements, and in 1997, Japan, the EC and the US demanded that WTO grievances panels be set up. Grievances panels were set up in June of that year in response to the demands by the Japanese government and the EC, and in July, in response to the demand from the US government.

On January 21, 1998, as part of the economic reform imposed as a condition for support from the IMF, the Indonesian government scrapped the preferential treatment that had been made available to the national car program. However, Japan, the EC and the US were dissatisfied at the lack of transparency regarding the details of the abolition of preferential treatment for the national car program, and since the parts and components local content program was still in place, declined to withdraw their suits, as requested by the Indonesian government.

The panels' report on the effect that Indonesia's local content program and the national car program were inconsistent with the GATT agreements was officially adopted by the WTO's Dispute Settlement Body (DSB) on July 23, 1998. As a result of this decision, on December

7, 1998, the WTO recommended to the Indonesian government that it announces a new automobile policy by January, 1999, in line with the WTO agreement, and implement the policy by July 23, 1999. The Indonesian government is currently studying a new import tax on automobile parts, and an amendment to the luxury tax. It seems likely that a parts and components tax ratio will be introduced in line with the harmonization code classifications.

1.3.3 Japan - Indonesia Automotive Dialogue

The automotive industry is one of the sectors most severely affected by the economic crisis. The government aims to overcome the current situation by requesting support from Japanese automobile manufacturers, particularly in the form of expanded export to other countries. The Indonesian government and the Japanese government started the “Japan - Indonesia Automotive Dialogue,” in which the automotive-related representatives of both private and public sectors of the two countries attend, and discuss on the measures to improve the situation through strengthening mutual cooperation.

1.3.4 Market Liberalization within ASEAN

The Indonesian government is negotiating within ASEAN and APEC for the adoption of common import taxes. The amendment or abolition of the local content policy would reduce the price competitiveness of many domestically produced parts and components which had been localized under protection.

1.4 POLICIES FOR THE ELECTRIC AND ELECTRONIC INDUSTRY

The government is aiming to develop the electronic industry by promoting foreign investment and expanding domestic production capacity. In order to realize globalization of the domestic electronic industry in step with the pace of development of the world’s electronic industries, the Indonesian government is encouraging investment in the latest product items. At the core of Indonesia’s electronic industry development policy is investment promotion. Other activities include export promotion, improvement of technology, development of human resources, etc.

The main problems facing the electronic industry are the low local content rate and EPTE. Exports of electronic parts and components are increasing rapidly. However, the rate of local content in electronic products is still very low. The main production processes in Indonesia are still very labor intensive, and many foreign affiliates investing in Indonesia express dissatisfaction with the EPTE regulations and procedures.

Programs planned for implementation in 1998 are as follows.

i. Programmes continuing from 1996

- Follow up to the establishment of the Indonesia Electronics Development Corporation (IEDC). The IEDC was the brainchild of the Ministry of Industry and Trade, and was established as a private sector company, with the aim of promoting new investment in the electric and electronic sectors, and to provide consulting for new investment companies.
- Establishment of the Electronic Supersite. This plan calls for the establishment of an industrial site fully facilitated with distribution, communication, highway, airport, warehouse and other infrastructure in Medan in northern Sumatra, one corner of the Indonesia, Malaysia, Thailand growth triangle, for the purposes of attracting investment into the electronics industry. The idea is to have a concentrated area of electronics industry similar to that in the Batam Island.

ii. Programs continuing from 1997

Investment promotion

- Dispatch of investment missions to Japan, Korea, Taiwan, America, etc.
- Attraction of latent investor missions.
- Gathering of investment related information.
- Drawing up of proposals for relaxation of regulations.

Export promotion

- Creation of interest in investment in parts and supporting industries.
- Construction of bonded warehouse facilities in order to increase appeal as a production base for an export oriented electronics industry.
- Simplification of EPTE acquisition procedures, and promotion of the supporting

industries to supply EPTE companies with parts and components.

- Providing information about preferential treatment for investors.

Technology and infrastructure provision

- Investigation into the feasibility of the establishment of a training facility which gives training of specialists and experienced workers for the electronics industry. The short-term aim will be to produce technicians, while the long-term aim will be to produce highly trained specialists. This project is directly under the jurisdiction of the Ministry of Education and the Ministry of Labor.
- Investigation into the establishment of an electronics industry research center, in cooperation with the B4T in Bandung.

Human resources

- Meetings with representatives of government, industry and education organizations, to discuss and identify training needs.
- Cooperation with related organizations to find ways to close the gap between the technical skills of the labor force and the needs of the industry.
- Assessment of possibility of cooperation with foreign agencies in order to train experienced workers.

Standardization

- Promotion of standardization for technical competency for developing the local electronics industry.
- Promotion of standardization for the strengthening of relations between upstream and downstream industries.
- Promotion of standardization for the improvement of product quality and export.

Database provision

- Provision of databases related to corporate information.

iii. Priority programs for 1998

- Drawing up of plans for the development of information technology (IT) support industries.
- Promotion of partnerships between large electronics companies and small sub-contractors.
- Investigation for the production of quality control systems manuals for small and medium sized firms.

- Activities for the improvement of production and management capabilities in small and medium sized electronics firms.
- Technical support for the improvement of sound quality in audio products.
- Investigation of business opportunities for medical equipment.
- Investigation of business opportunities for office equipment.
- Investigation of business opportunities for cellular telephones.
- Production of manuals for the promotion of investment and export in the electronics industry sector.
- Activities for the encouragement of relocation in Indonesia by foreign electronics firms.
- Technical assistance from large companies to small companies.
- Preparation of data related to electronics companies.

The implementations of programs for the development of the electronics industry for the year 1998 received the effects of both the economic crisis and the two times change in the ministers. Among short-term programs, market expansion support and credit support for assemblers and local parts manufacturers will come under scrutiny. Among long-term programs, however, the realization of investment attraction in the advanced industries with the most prospects for the future will still be the main priority. It is important to promote the development of Medan, with the aim of encouraging foreign electronics companies to relocate from Penang in Malaysia, and the development of an information technology industry.

1.5 POLICIES FOR THE DEVELOPMENT OF THE SMALL AND MEDIUM SIZED INDUSTRIES

In mid-September, 1998, an organizational change took place. The directorates for small industry under individual industry-wise Directorate Generals and the Small Industry Development Agency (BAPIK) became one entity, the Directorate General for Small Industry and Trade.

The systems and programs for the development of small enterprises basically have not been changed. However, as many small enterprises have suffered from the effects of the currency

crisis, the assistance for these enterprises has become a priority issue. Currently, emergency programs are being implemented. The priority areas for programs are 1) the supply of basic materials and support materials, 2) import substitution, and 3) export orientation. Table 3-1-1 shows the priority products for support in the metal, machinery and electronics industries.

Table 3-1-1 Priority Products in the Small Metal, Machinery and Electronics Industries

Product Type	Priority Products
Supply of basic materials and support materials	Agricultural tools, agricultural equipment, wooden boats, fishing boats
Import substitution	Metal parts and components, electronic parts and components
Export orientation	Silver accessories, metal handicrafts (brass, iron)

Source: MOIT

One emergency program that has very high priority is the social safety net program. Specifically, the Dana Bergulir (operating capital) program is currently being implemented. This program is designed to provide small businesses working capital with low interest rates through simplified procedures.

The Dana Bergulir program plans to provide small manufacturing industries with a total of 18.1 billion rupiah, and small trading companies with a total of 3.1 billion rupiah in credit, by April, 1998. The credit conditions are an interest rate of 10% per annum, a maximum of 50 million rupiah credit, a repayment period of two years, with repayment to begin on a monthly basis six months after payment of the funds, no collateral required and the funds to be used as operating capital. In order to be eligible for funding, small industries must either be agricultural industries with an export potential, handicraft industries, import substitution industries, or supporting industries for the above, and be using 60% or more domestic materials.

Other important programs include the rehabilitation program for technical service units (Unit Pelayanan Teknis, UPT) and the retraining program for extension service officers.

UPTs are public organizations that provide technical services under the auspices of the Ministry of Industry and Trade. UPTs have the staff and equipment to provide support for small businesses. The equipment constitutes a common facility that can be used by all of the small businesses in the area. UPTs specialize in various special industries. The main industries include engineering, machinery, timber, rattan, and textiles, etc. Currently, there are 97 UPTs nationwide. The Directorate General for Small Industry and Trade is renewing the equipment in existing UPTs, and plans to reorganize them into business centers for the encouragement of small businesses. Over the long term, the UPTs plan to establish an independent setup by raising profits from providing small businesses with market opportunities and technical training. The Directorate General for Small Industry and Trade is currently planning feasibility studies on the rehabilitation of 67 UPTs.

Currently, there are around 1,500 extension service officers. These extension service officers provide small businesses with technical instruction. Their main technical fields include foodstuffs, textiles, leather goods, metals and chemicals. Many of them are stationed in rural offices, with some at the Headquarters. These instructors were trained some 10 to 15 years ago, and their technical expertise is not really sufficient. The Directorate General for Small Industry and Trade is currently planning the re-training of these Extension Service Officers. Areas under consideration for retraining are (i) patents, (ii) financial consulting, (iii) technology, and (iv) marketing.

In addition to the above, the following programs are being considered for the support of small businesses in the metals, machinery and electric and electronic industries.

Plan for Support to the Small Metal, Machinery, and Electrical & Electronic Industries

I. Central development programs

i. Rescue programs

- Entrepreneur development program

Cultivation of entrepreneurs graduating from Islamic schools/ cultivation of

modern entrepreneurs in the precision machining industry/ development of labor intensive enterprises in the forging industry for supporting the foodstuffs production industry.

- Market development program

Gathering of information for export oriented enterprises.

- Technical improvement program

Improvement of the production and management abilities of the agricultural equipment industries that support agriculture and agro-industry (ATIAMI project), technical guidance in the manufacture of wooden boats, instruction in engineering and management techniques/ the improvement of management skills and product quality for agricultural equipment manufacturers.

ii. Competitive strength improvement program

- Quality control and technical development

Technical guidance for export oriented gold and silver handicraft work and brass work manufacturers with the aim of improving product quality and design/ technical guidance for the application of the Indonesia Industrial Standards/ supervision for the improvement of quality and design in metal handicraft products/ the diffusion of the Indonesia Industrial Standards/ ISO-9000 certification for globalization.

- Activity reinforcement programs for various organizations

Developing the skills of testing and inspection organizations/ testing labs and other technical service organizations/ the strengthening the UPTs in the metal sector.

- Support programs

Spreading awareness about intellectual property rights.

II. Regional development programs

i. Rescue programs

- Market development program

Investigation of priority products for carrying out product diversification/ creating a catalogue of top quality products, with the company name and product name.

- Raw materials access program

- Review of specifications for materials.
- Technology access improvement program
 - Review of technical skills of supporting industries for the automobile, heavy machinery, shipping and industrial machinery and equipment industries/ promotion of the use of precision equipment and CNC equipment.
- ii. Competitive strength improvement programs
 - Information supply organization development program
 - Improving technical ability through cooperation with related industrial associations, organization of conferences and seminars dealing with technological innovation.
 - Improvement of quality control and technology
 - Technical training in the application of the Indonesia Industrial Standards.
 - Human resources development
 - Apprenticeship training by advanced enterprises within the same industry/ training in CAD/CAM design/ technical and management skill training for technicians and supervisors/ skill improvement in the wooden boat manufacturing industry in order to meet the demands of the fishing industry and water transportation/ skill improvements for small businesses manufacturing machine engines and agricultural equipment.
 - Support programs
 - Review of skill improvement activities for repair and maintenance industries, which are considered an embryonic stage of the engineering industry/ review of regulations in rural areas/ verification of the type and quality of automobile parts being manufactured by local firms in order to raise the level of local content/ monitoring of the application of the Indonesian Industrial Standards to goods being manufactured by small firms.

III. Routine activity programs

The following programs are carried out.

Investigation and management of application for the Indonesian Industrial Standards/ comparative studies with other small businesses already conducting quality assurance

activities/ research into production systems in order to improve productivity and efficiency/ the preparation of potential maps relating to raw materials, production techniques, infrastructure, marketing, personnel and equipment/ investigation of industries having a major impact on the environment/ cooperation with other related agencies, associations and groups in order to expand exports/ organizing of exhibitions in order to enter into the export market/ investigation of business opportunities and investment opportunities for important products/ preparation of enterprise directories/ assessment of agencies related to export expansion and technical development/ cooperation with agencies related to the provision of promotion space for new products/ study of ways of optimizing the role of UPTs/ creation of a small business database/ provision of the most suitable technology to *Sentra*/ research into the utilization of clean technology.

2. FINANCIAL SYSTEM AND POLICIES

2.1 PRESENT SITUATION OF FINANCIAL SYSTEM

2.1.1 Banking System of Indonesia

(1) Type of Banks and Non Bank Financial Institutions

The Banking sector of Indonesia consists of commercial banks and rural credit banks which engage in micro scale banking in rural areas. The number of rural credit banks is very large, however they have almost an negligible share of total assets.

Table 3-2-1 Total Assets Outstanding by Type of Banks as of March 1998

Unit: Trillion Rupiah, %

	Total Asset Outstanding (Trillion Rupiah)	Share (%)
1. Commercial Banks	737.6	100.0
State Banks	296.2	40.2
Private National Banks	319.2	43.2
Local Government Banks	11.8	1.6
Joint Banks	60.1	8.1
Foreign Banks	59.9	8.1
2. Rural Credit Banks	2.9	0.4

Source: Bank Indonesia

Commercial banks consist of state banks, private national banks, local government banks, joint banks, and foreign banks. Among commercial banks, both private national banks and state banks have over 40% shares of total assets, while state banks have the largest nationwide office network. As of March 1998, the number of commercial banks was 222, however more than 75% of assets, credits and deposits were concentrated in the top 20 banks.

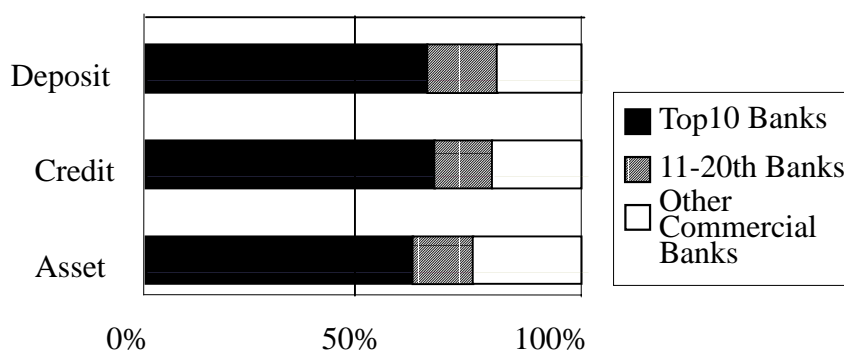
Other than banks, there are finance companies and venture capital firms which work as financial institutions. The funds of finance companies and venture capital firms are still limited compared to commercial banks.

Table 3-2-2 Number of Banks and Offices by Type of Banks as of March 1998

	Number of Banks	Number of Offices
1. Commercial Banks		
State Banks	7	1,772
Local Government Banks	27	812
Private National Foreign Exchange Banks	77	415
Private National Non-Foreign Exchange Banks	67	729
Joint Banks	34	58
Foreign Banks	10	41
Commercial Banks Total	222	7,570
2. Rural Credit Banks		
Rural Credit Banks established after PAKTO	1,412	
Rural Credit Banks established before PAKTO	774	
SUB TOTAL	2,186	
Rural Fund and credit Institutions	1,848	
Rural Credit Agencies	5,345	
SUB TOTAL	7,193	
Rural Credit Banks Total	9,379	

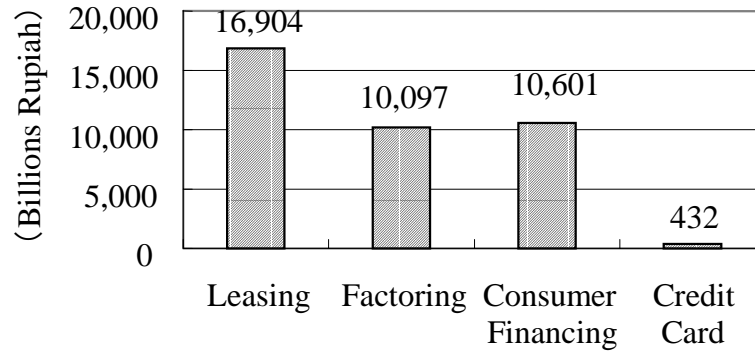
Note: Number of offices in state banks does not include Bank Rakyat Indonesia's unit offices, while they are included in commercial banks' total.

Fig. 3-2-1 Share of Deposits, Credits and Assets of the Commercial Banks by Size of Banks as of March 1998



Source: Bank Indonesia

Fig. 3-2-2 Business Activities of Finance Companies in 1997



Source: Ministry of Finance

Table 3-2-3 Business Activities of Venture Capital Firms in 1997

Number of Venture Capital Companies	59
Number of Companies Invested in	504
Value of Activities (Billion Rupiah)	228

Source: Ministry of Finance

(2) Commercial Bank's Funds Distribution by Group of Banks

There are some characteristic points in the fund allocation of each group of banks. For example, state banks allocate the largest part of their credit to the manufacturing sector, while private national banks allocate the largest part to the service sector. Foreign and joint banks' share in credit is small. However they are one of the major players in foreign exchange in the manufacturing sector.

Table 3-2-4 Commercial Banks' Credit Outstanding in Rupia and Foreign Exchange by Economic Sector

Credits in Rupiah		Unit: Billion Rupiah					
	Agriculture	Mining	Manufacturing	Trade	Service	Others	Total
State Banks	14,303	657	54,242	27,357	37,250	17,834	151,643
Regional Government Banks	287	20	338	1,085	1,889	2,974	6,593
Private National Banks	11,688	1,925	22,566	28,745	51,970	12,753	129,647
Foreign Banks and Joint Banks	123	124	7,536	1,687	3,948	1,772	15,190
Total	26,401	2,726	84,682	58,874	95,057	35,333	303,073

Credits in Rupiah and Foreign Exchange		Unit: Billion Rupiah					
	Agriculture	Mining	Manufacturing	Trade	Service	Others	Total
State Banks	14,965	2,070	80,999	41,951	50,614	17,835	208,434
Regional Government Banks	291	20	407	1,118	1,896	2,974	6,706
Private National Banks	19,286	2,358	44,469	41,473	69,025	12,817	189,428
Foreign Banks and Joint Banks	1,568	1,311	41,926	10,909	9,303	1,783	66,800
Total	36,110	5,759	167,801	95,451	130,838	35,409	471,368

Source: Bank Indonesia

Note: As of October 1998.

2.1.2 Problems of the Banking Sector - Accumulation of Non-Performing Assets in the 1990s

The financial deregulation policies introduced in the 1980s have accelerated development of the Indonesian financial sector. However, rapid financial development and sharp increases in commercial banks' credit in the 1990s was not accompanied by the development of the social and economic environment including legal, accounting and bank prudential regulations and supervision arrangements. While loan assets were growing rapidly, the banks' credit analysis systems fell behind. The loans for real estate development increased and the ratio of loan concentration in one group of borrowers tended to rise. This resulted in an increase in non-performing assets and a weakened banking sector. The weak banking sector is one of the major causes of the currency crisis.

The weak banking sector originated from several important factors. First, there is a typical

government failure in the case of state owned banks. Even after financial deregulation, the Government remained as the major shareholder of the state owned banks. The top managers of the state banks were appointed by the Government and some of the senior managers had once been government officials. Government guidance and instruction strongly affect management strategy. The state banks' decisions were often made from a political point of view, which was often contradictory to commercial and financial discipline. Under this situation, the major concern of the managers is to know the intentions of the government and the politicians, rather than to develop capabilities of credit analysis, which is a major banking function.

Second, a limited liability system with the central bank's implicit guarantee on the liabilities of banks, under the modern market mechanism, had two major negative effects. Banks to inclined go for the high return with high risk taking activities under this situation. On the other hand, depositors and lenders to the banks tend to provide funds only with return criteria, i.e., interest rate on deposits, without evaluating the soundness of banks. This situation developed because the depositors and lenders of the banks assumed that the banks' liabilities were guaranteed by the Government implicitly. These are typical cases of the so-called "moral hazard."

The third factor stems from an ineffective bank supervisory environment. This condition is highly associated with failure to counter the incentive problems created by the central bank safety net and lack of market discipline. Although the importance of bank supervision has been repeatedly discussed, such systems often are not effectively implemented and enforced because of lack of autonomy and capacity of the bank supervisory authorities in addition to the overwhelming political pressures.

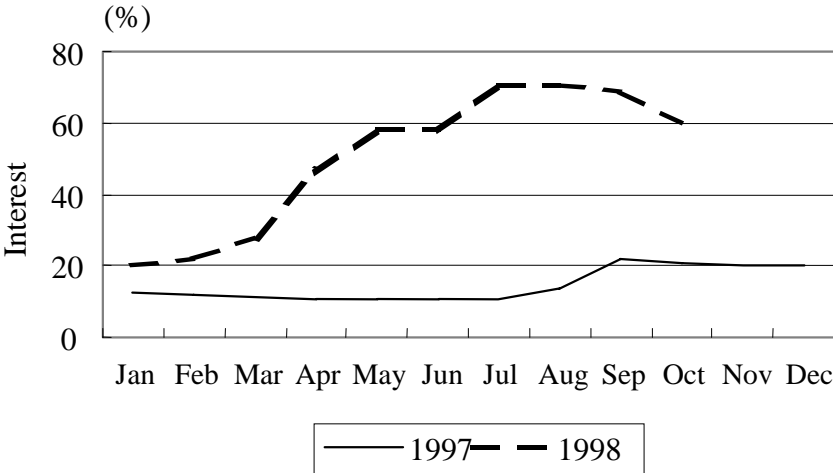
The fourth factor stems from concentrated bank ownership and connected lending, which often increase the vulnerability of private banks. In Indonesia, most of the private banks belong to business groups such as overseas Chinese conglomerates. Within each business group, the firms hold a close relationship similar to a family structure where the members bear "unlimited liabilities" to each other, while the bank in the form of a limited company, bears "limited liabilities" to its depositors and international lenders. It is therefore natural for the

group bank to give priority to firms within the group. When loans to group firms turn into non-performing assets, the bank tends to continue injecting funds, even at the high cost of funding, in order to rescue the troubled firm.

The above factors caused an increase in the number of non-performing loans in the banking sector and thus weakened the banking system in Indonesia. The inefficient and weak banking sector with high non-performing loans continues to put pressure on the domestic interest rates, particularly on lending rates. Because of the higher lending rates, which means higher borrowing cost, Indonesian corporations tended to increase borrowing from overseas, leading to higher external debt.

Consequently, the domestic banking market was left to deal with remaining borrowers, i.e., high risk borrowers, which tended to increase pressures on the bank lending rates even further.

Fig. 3-2-3 Trends in Interest Rate of SBI 28 Days



Source: Bank Indonesia

2.1.3 Trend of the Banking Sector after the Crisis

Since the financial crisis began in July 1997, massive capital outflows have put persistent pressure on the sharp depreciation of the rupiah exchange rate. Towards the end of 1997, when the rupiah had depreciated to less than half of the pre-crisis level, a confidence crisis spread pervasively through the international markets as well as domestic markets. The result

of this was the collapse of the Indonesian economic system including its banking system. Depositors took funds out of the banking system, particularly out of the private banks and converted them into US dollar denominated assets. The total amount of bank deposits in rupiah even on a nominal basis contracted in the third quarter of 1997 and the second quarter of 1998. The change in the amount of the total deposits in nominal rupiah includes inflation and the revaluation of the exchange rates on US dollar denominated deposits. On a real basis, the decline of the bank deposits was much larger than on a nominal basis.

A closer review of the trend of banks' funds and deposits by currency and by group of banks shows unique features for each category of banks. Firstly, the contraction of bank funds and credits was more significant at the private banks. This can be seen clearly in the change of US dollar denominated funds. (US dollar denominated funds comprised around 18% of the total funds of the private banks in June 1997 and 38% in October 1998.) The US dollar denominated funds of the private banks declined from \$14.5 billion in June 1997 to \$3.8 billion in June 1998, about one quarter of the pre crisis level. During the same period, private bank US dollar denominated credits declined from \$12.5 billion to \$7.4 billion. Meanwhile funds denominated in rupiah and US dollars of state owned banks and foreign banks showed some increase, which implies a shift of funds from private banks to state owned and foreign banks. The private banks were most seriously damaged by capital outflows, although the whole banking sector was severely affected by the current financial crisis. The private banks have not been functioning since the beginning of 1998.

Table 3-2-5 Commercial Banks' Funds and Foreign Exchange

Unit: Billions Rupiah, Billions US\$

	State Banks				Private Banks				Foreign & Joint Banks				Total*			
	Rupiah+ Forex	Rupiah	Forex Rupiah	Forex US\$	Rupiah+ Forex	Rupiah	Forex Rupiah	Forex US\$	Rupiah + Forex	Rupiah	Forex Rupiah	Forex US\$	Rupiah + Forex	Rupiah	Forex Rupiah	Forex US\$
1993	61,683	50,258	11,425	5.41	67,541	52,605	14,936	7.08	8,682	3,497	5,185	2.46	142,679	111,100	31,579	14.97
1994	64,283	52,394	11,889	5.40	88,925	68,431	20,494	9.32	11,015	5,484	5,531	2.51	170,406	132,451	37,955	17.25
1995	75,920	63,385	12,535	5.43	117,451	93,318	24,133	10.46	13,581	6,178	7,403	3.21	214,764	170,647	44,117	19.11
1996	90,434	76,165	14,269	5.99	164,979	132,797	32,182	13.50	17,783	8,115	9,668	4.06	281,718	225,547	56,171	23.57
1997.6	91,810	77,342	14,468	5.91	183,006	147,384	35,622	14.54	19,965	8,691	11,274	4.60	303,039	241,620	61,419	25.07
1997.12	133,042	93,249	39,793	8.56	177,193	130,777	46,416	9.98	38,582	14,071	24,511	5.27	357,613	246,836	110,777	23.82
1998.6	265,924	171,856	94,068	6.31	201,957	144,686	57,271	3.84	97,193	25,041	72,152	4.84	573,801	350,233	223,568	15.00
1998.9	262,461	188,074	74,387	6.95	212,745	164,350	48,395	4.52	69,516	15,879	53,637	5.01	554,356	377,869	176,487	16.49

Source: *Indonesian Financial Statistics*, November 1998

Note: *Total includes Regional Gov. Bank

Secondly, the bank funds became larger than their credits for all categories of banks after the crisis. Bank funds were normally smaller than their credits during the pre-crisis period (Banks also relied on Bank Indonesia's liquidity credits as well as equity). It is apparent that the Indonesian banking sector has been neither able nor willing to extend credits since the beginning of 1998. Financial intermediation, a major function of the banking system, is not working at the moment. This is certainly the result of the increasing risks of the private borrowers. However, this is also a result of the Government policies, i.e., tight monetary policies and the restructuring of the banking sector. Under the current policy direction, i.e., the banking sector restructuring program including the government guidance on improving Capital Adequacy Ratio (CAR), the banks are not in a position to take additional credit risks and channel funds to the necessary economic activities.

Thirdly, the interest rate on deposits is much higher than the interest rate on lending for most of the Indonesian banks (except foreign banks) since the crisis. A wide negative margin between deposits and lending became a persistent feature of the state owned banks and private banks. The tight monetary policies, which were introduced with the aims a) to prevent capital outflows and further depreciation of the rupiah exchange rates and b) to curb

inflationary pressures, have pushed up the domestic interest rates. As mentioned, a large number of banks are also suffering from meeting the statutory reserve requirements, thus paying higher interest rates in order to mobilize funds and also to prevent a further drain of the deposits. The Government and banks face a dilemma; high interest rates are necessary for avoiding a further drain of the funds from the banking system, while on the other hand, such high interest rates cause more insolvent borrowers, i.e., higher non-performing loans.

Table 3-2-6 Interest Rates of Three Month Rupiah Time Deposits by Group of Banks

Unit: Percent per Annum

	State Banks	Private Banks	Foreign and Joint Banks	Total*
1993	12.80	15.83	11.40	14.53
1994	9.89	13.81	10.18	12.64
1995	13.93	17.37	14.68	16.80
1996	14.92	17.80	14.01	17.25
1997. 6	13.50	16.31	13.46	15.93
1997.12	19.88	27.76	18.03	23.92
1998. 6	42.25	38.83	26.66	40.63
1998. 9	48.20	47.40	34.69	47.38

Source: Indonesian Financial Statistics

Note: As of the end of period.

*Total includes Regional Gov. Banks

2.2 FINANCIAL POLICY OF INDONESIA

2.2.1 Basic Financial Policy of Indonesia

Traditionally, the Indonesian monetary authority keeps interest rates relatively high to maintain confidence in the rupiah and avoid inflation. However, Indonesia's finance policy basically respects the market mechanism. After the policy package of October 1988 known as PAKTO, Banks Indonesia abolished, in principle, institutional lending schemes which may cause distortion to the money market. During the foreign exchange rate crisis in 1987, the Indonesian monetary authority let the currency float freely without intervention.

2.2.2 Financial Policies Under Economic Crisis

(1) Government Guarantee Program

The Government decided to stand behind the commercial banks of the country in January 1998. Bank Indonesia extends a full guarantee on banks' obligations to depositors and creditors. If any bank encounters difficulty in making payments, BI immediately steps in to make sure that these payments can be made. The guarantee applies equally to private and state owned banks. The bank depositors and creditors are now fully guaranteed.

In exchange for this guarantee, all locally incorporated banks are subject to the enhanced supervisory oversight that is necessary in the present circumstances. The banks are also required to pay a fee based on the value of their liabilities in order to defray the possible costs of the guarantee.

The guarantee will remain effective for at least two years and will not be terminated before the soundness of the banking system can be restored. The guarantee program, however, is planned to be replaced by a deposit protection scheme.

(2) Bank Indonesia's Unlimited Liquidity Support to Banking Sector

To avoid a shortage of money in the banking sector due to withdrawals of deposits or the collection of bank debts, Bank Indonesia supplied unlimited liquidity to the banking sector. The amount of liquidity support is about 189 trillion rupiah in December 1998.

To avoid hyperinflation caused by over-liquidity, Bank Indonesia absorbed liquidity by issuing SBI in large amounts. According to BI, 100 trillion rupiah has been absorbed by SBI, and 89 trillion rupiah converted into foreign currencies for settlement of foreign debts.

2.2.3 Banking Sector Reform Programs

The Government announced a series of bank restructuring programs aimed at restoring the

confidence of domestic and international communities in the Indonesian banking system. However, the program implementation requires legal settlements and administrative arrangements. Meanwhile, payment arrears of the Indonesian banks' obligation still remain. Moreover, since the political situation continues to be fragile and uncertain, public confidence towards the Indonesian banking system has not been restored yet.

(1) Indonesian Bank Restructuring Agency

It was recognized that guarantees, by themselves, are not sufficient to solve the problem. Action must also be taken to resolve the underlying financial difficulties of the commercial banks. Consequently, the Government established a new institution, the Bank Restructuring Agency (IBRA). The main functions of IBRA are:

- i. To supervise banks in need of restructuring, and
- ii. To be the asset management agency that handles the bank restructuring.

Whenever Bank Indonesia discovers that a commercial bank is in financial distress, BI transfers it to the supervisory jurisdiction of the IBRA. The banks placed under the management of IBRA would continue to operate as usual, but IBRA would manage them.

The Government also established an Asset Management Unit to focus on the debt recovery of non-performing assets of the problem banks. IBRA engages in assisting this unit to perform their tasks. This unit will take over the bad assets of the seven banks in which it intervened on April 4, as well as subsequently the bad assets of other IBRA controlled banks.

Table 3-2-7 Number of Commercial Banks under Supervision of Bank Indonesia and IBRA as of March 1998

	Under Bank Indonesia	Under IBRA	Total
State Bank	3	4	7
Private National Foreign Exchange Bank	54	23	77
Private National Non-Foreign Exchange Bank	53	14	67
Local Government Bank	16	11	27
Joint Banks	32	2	34
Foreign Banks	10	0	10
Commercial Banks Total	168	54	222

Source: Bank Indonesia

(2) The Re-capitalization Program

Bank Indonesia, assisted by International Auditors, is conducting due diligence to all banks. Based on this due diligence, BI classified banks into three categories as follows:

- Group A: Sound banks ; Capital Adequacy Ratio (CAR) of higher than 4%
They are not allowed to participate in the re-capitalization scheme.
- Group B: Viable banks ; CAR between 4% and minus 25%
They are obliged to participate in the re-capitalization scheme.
- Group C: Unsound banks ; CAR is worse than minus 25%
They will be given 30 days to comply with an equity injection/cash call or to improve their assets quality so that a revised determination may be made as to whether they can be moved to Group B.
For those that still remain in Group C, there will be a resolution jointly conducted by Bank Indonesia and IBRA.

Banks that fall into Group B will be given one month to prepare a business plan including:

- the resolution of non-performing lending,
- the proposal of a bank quarterly plan through the next three years, and

- the projection of compliance with all prudential regulations.

After Bank Indoensia approves the business plan, the following several actions shall be taken:

- Bank is to resolve the legal lending limit excess to their group within one month.
- Bank's owner is to repay Bank Indonesia Liquidity Support within one month.
- Bank's owner is requested to increase capital or search for a new investor. For every rupiah of capital that the owner and/or investor puts in, the government supplies up to four rupiah. In due course, the government equity investment will be up to 80% of the required capital needed for re-capitalization.
- The government investment will be performed by issuing bonds to respective banks. Upon such investment, the bank will issue convertible preferred stocks whereby the government shall temporarily relinquish its voting rights for the period of three years. In this regard, the government will appoint a professional representative to the board of the bank.
- The bank loans classified as loss are transferred to IBRA at their net-book value (value of nominal outstanding loans minus 100% provision based on the regulations), i.e., zero.
- The bank will also have the right to transfer to IBRA, at zero price, some or all of its loans classified as doubtful.
- All recoveries from the bank workout unit will be applied to enabling the owners to buy back the shares of the government.
- The owners have an option to buy back stocks in cash at any time during the following three years, at the original price plus a fair interest rate.
- After three years, the government will aim to divest its remaining holdings of the shares of the bank.

(3) Tentative Results of Due Diligence

a. Condition of Banks Undergone Due Diligence

On December 8, 1998, Bank Indonesia reported the result of due diligence for 150 national banks as follows:

Category A (CAR of higher than 4%):	54 banks
Category B (CAR of 4% to-25%):	56 banks
Category C (CAR of less than -25%):	40 banks

b. State Owned Banks

All of the seven state owned banks have undergone due diligence and are classified in Category C. It is estimated that the re-capitalization cost for BBD, BDN, BEI, Bapindo, BRI, and BNI could reach Rp. 136 trillion. On the other hand, it is estimated that the liquidation cost could reach Rp. 357.3 trillion or 261% of the re-capitalization cost. For BNI as a publicly listed company, the capital infusion is to be conducted through the equity issue mechanism adhering to the prevailing regulations in the capital market.

c. Regional Development Banks

There are 27 regional development banks, one bank located in every province. The banks are owned by the province and county governments. Of the 27 regional development banks, 12 are in Category A, 11 are in Category B, and four are in Category C.

The regional development banks are owned by the regional governments, and their loan portfolios are concentrated in the small and medium scale business in the regions. Considering these factors, the Central Government will strengthen the capital of regional development banks.

d. Banks under IBRA Supervision

The Government has taken over four banks from IBRA (suspended banks). Besides

that, 20 other banks have undergone due diligence. One bank is now classified in Category A, meaning that the bank succeeded in restructuring its situation. One bank is in Category B. 18 banks are in Category C.

e. Other private national banks

Of 104 private national banks outside of IBRA supervision that have undergone due diligence, 41 are in Category A, 44 are in Category B, and 19 are in Category C.

f. Liquidation of 38 Banks

In March 1999, the Government announced the names of 38 banks which are to be liquidated. These banks are Category C or Category B banks which cannot meet the conditions of the re-capitalization program.

2.2.4 Placement of Bank Indonesia's Funds in Foreign Banks to Confirm L/C issued by Indonesian Banks

After the economic crisis, foreign banks have been very reluctant to receive letters of credit (L/C) issued by Indonesian banks. As a result, Indonesian exporting industries, which import raw materials and/or parts, are experiencing difficulty in manufacturing their products.

To settle this problem, Bank Indonesia set up a scheme to place funds in foreign banks to confirm letters of credit issued by Indonesian banks. Under this plan, BI placed its funds in foreign banks as collateral which confirms L/C issued by Indonesian Banks. In line with this plan, another plan has been put in force under which P.T.Askrindo, a state owned credit insurance company, guarantees to L/C issuing banks the credit risk of importers up to 80% of the L/C amount.

2.2.5 Policy Measures to Support Financing the Small and Medium Scale Enterprises

In Indonesia, there is a special regulation regarding small scale business financing that all

banks including joint banks and foreign banks are responsible for disbursing at least 22.5% to 25% of total lending to small-scale enterprises. This regulation was originally introduced in the 1990 policy package known as PAKJAN. Small business credit under this regulation is called KUK(Kredit Usaha Kecil). Under this regulation, credit to small-scale enterprises with net assets of not more than 200 million rupiah excluding land and buildings or annual sales of not more than one billion rupiah is regarded as a KUK credits, and their maximum lending limit is up to 350 million rupiah per customer. Thus in Indonesia, not only rural credit banks, but also commercial banks have a distribution channel of credit to small-scale enterprises. The interest rate of KUK is the market rate and 100% of the credit risk is borne by the lending bank. Outstanding credit of KUK as of March 1998 was 65.9 trillion rupiah.

The Government tight monetary policy set to address the exchange rate crisis resulted in a sharp decline in new credit extension by banks, particularly credits to small and medium scale enterprises. According to Bank Indonesia, credits to small scale enterprises (KUK) amounted to Rp 1.9 trillion per month before the crisis, while following the crisis it slowed down significantly to only Rp 500 billion a month.

Besides KUK, there are several other institutional loan schemes in Indonesia. However, these institutional loan schemes were introduced from the point of social policy, and not from the point of the industrial development policy. Also eligibility is usually limited to very small business and the credit limit is too low for the industrial sector.

To overcome medium-term and long-term liquidity shortages of small-scale businesses, and to boost non-oil/gas export, the Government obtains foreign financing from international financial institutions through two-step loan programs. Those include i) the Exim Bank of Japan (EXIM VI) for credit to small scale enterprises and venture capital corporations, ii) Exim Bank of China (EXIM Taiwan) for cooperative members through groups and cooperatives, iii) Asian Development Bank for Micro Credit Projects (PKM), and iv) Overseas Economic Cooperation Fund (OECF) for Pollution Abatement Equipment Projects (PAE Stage II).

Since the crisis started, the Government has announced a series of measures to provide a

social safety net benefiting small and medium scale enterprises. The measures include capital support, supplementary programs and establishment of support groups.

The basic elements of the measures encompass the following:

- i. Bank Indonesia encourages banks to step up the extension of programmed credit by carrying out on short-term measures as follows.
 - prioritizing the withdrawal of BI liquidity credit for the use to finance programmed credit to farmers.
 - Resuming the SBPU scheme by giving priority to banks which have extended large amounts of KUK.
 - Raising interest rates for rural credits from 14% to 16% p.a., including a 2% fee for cooperatives, to avoid placing excessive burdens on commercial banks.
- ii. The Government provides a working capital credit facility for small and medium scale enterprises (KMK-UKM)

The Government provides a working capital credit facility for small and medium scale enterprises (KMK-UKM) through state banks and Bank Bukopin, by utilizing state enterprises' funds deposited in those banks. Such a scheme is used to finance labor intensive UKM provided the project is viewed as feasible by participating banks. The scheme is provided primarily for laid-off workers and exporters having both producer/ non producer type of UKM, distributors of staple goods, as well as cooperative members. The maximum credit line is Rp 25 million per worker and Rp 3 billion per UKM with an interest rate of 17% p.a.

2.3 CURRENT SITUATION AND PROBLEMS IN CORPORATE FINANCING

2.3.1 High Interest Rate

According to the bank officers interviewed, the potential needs for bank loans are still stable, however the interest rate is too high to borrow investment credit. They predict that if the interest rate fell to less than 30% (preferably under 25%), the needs for investment credit will be acted on. An economist of Bank Indonesia predicts that the inflation rate will drop to

15.5% by the end of the next fiscal year, and that the final lending rate to customers will be 20 to 25%, accordingly.

2.3.2 Lack of Long Term Funds

In Indonesia, access to long-term funds is quite limited. There are several institutional lending schemes to provide long-term funds, but usually supporting industries are not eligible for such schemes except for very small entities.

2.3.3 Weak Banking System

As a result of the economic crisis, most of the Indonesian banks fell into capital deficiency and were required to cut their risk assets and maintain an acceptable CAR ratio. Therefore, they do not have enough strength to supply new loans. According to one of the bank officers interviewed, many enterprises are required to repay all of their borrowings from bankrupted banks.

2.3.4 Other Findings

Notwithstanding the economic crisis, there are some industrial sectors that have strong needs for raising funds. They are such areas as furniture, garments, agro-industries, fishing, fertilizer, spare-parts, shoes, and mining. Taking advantage of the currency devaluation, most of other export oriented industries also have strong needs for fund raising.

2.4 PROBLEM AREAS OF SUPPORTING INDUSTRIES IN FUND RAISING

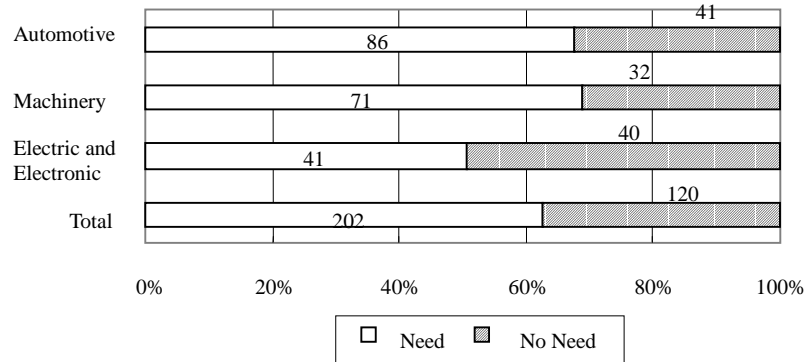
2.4.1 Problem Areas of Supporting Industries in Fund Raising

(1) Needs for Fund Raising

According to the questionnaire survey results conducted by the Study Team, more than

half of the enterprises answered need fund raising in all industry sub-sectors. In spite of the economic crisis, there is stable need for fund raising in the supporting industries of Indonesia.

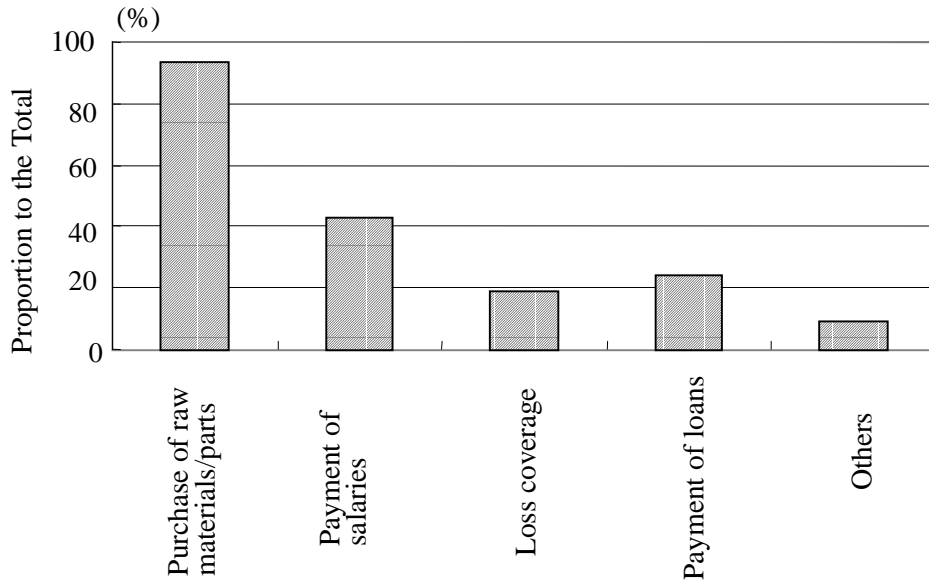
Fig. 3-2-4 Need for Fund Raising



Source: Questionnaire Survey, JICA Study Team

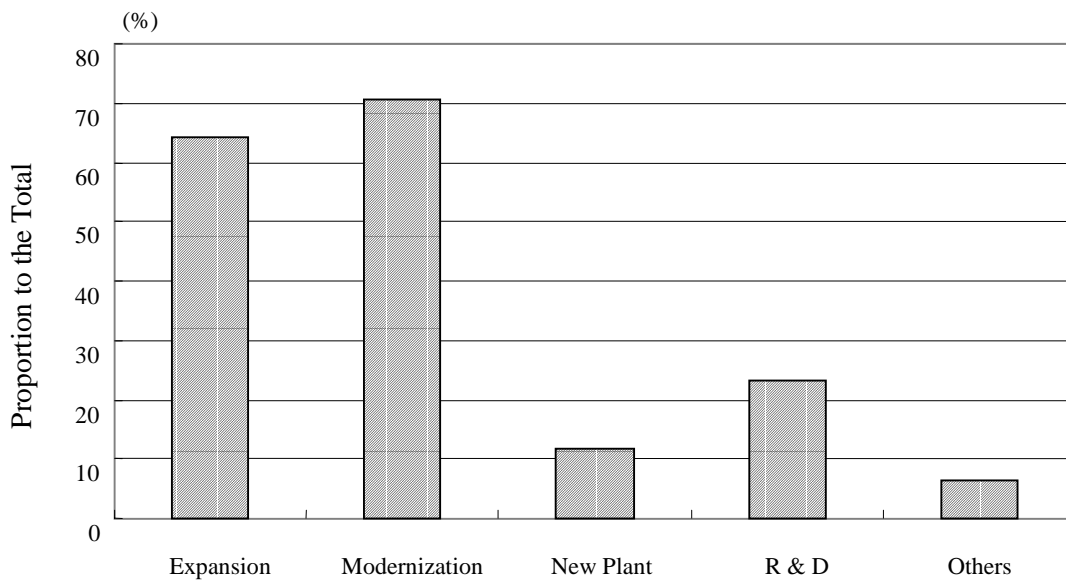
Most of the enterprises answered to the questionnaire survey intend to use working capital for purchasing raw materials and/or parts. The percentage of enterprises intending to use working capital for backward-looking purposes such as payment of delayed salaries or deficit coverage is rather small. In the case of investment funds, most of the enterprises intend to use the funds for investments to increase their manufacturing capacity or to modernize their manufacturing equipment. It is also noted that, the need for export financing is very strong not only in exporting enterprises but also in enterprises which do not now export.

Fig. 3-2-5 Use of Working Capital



Source: Questionnaire Survey, JICA Study Team

Fig. 3-2-6 Use of Investment Funds



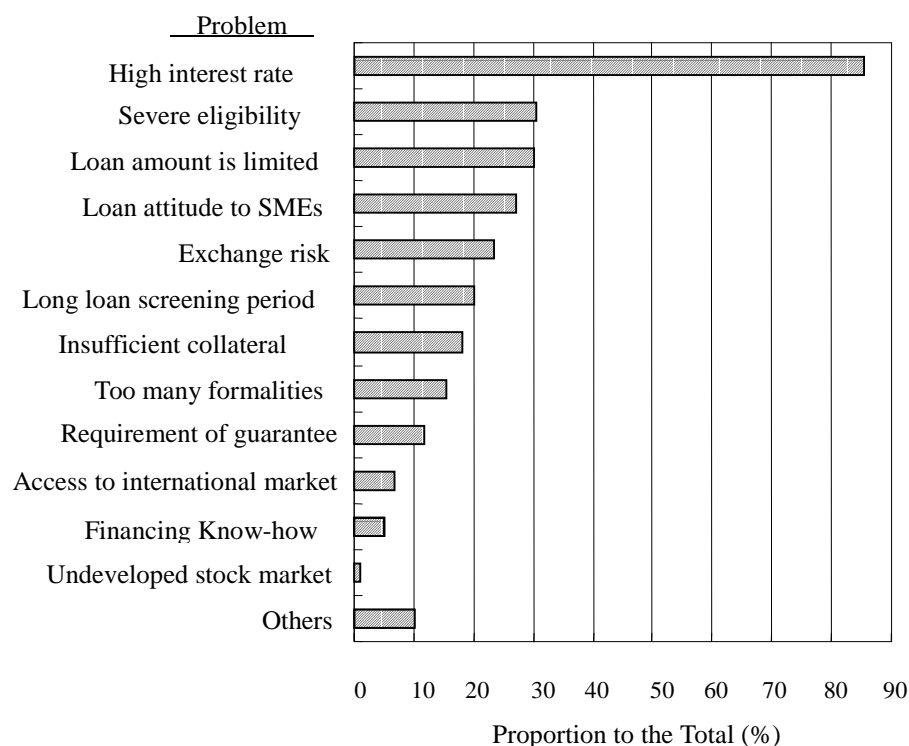
Source: Questionnaire Survey, JICA Study Team

(2) Problem Areas in Fund Raising

According to the questionnaire survey results, the high interest rate is the most serious

problem for supporting industries in Indonesia. The percentage of enterprises that mentioned high interest rate as a problem was about 80%, irrespective of the size of the enterprise. Other than interest rates, small-scale enterprises are mainly in trouble due to loan eligibility and lack of collateral, and large-scale enterprises are mainly in trouble from foreign exchange risk.

Fig. 3-2-7 Problem Areas in Fund Raising

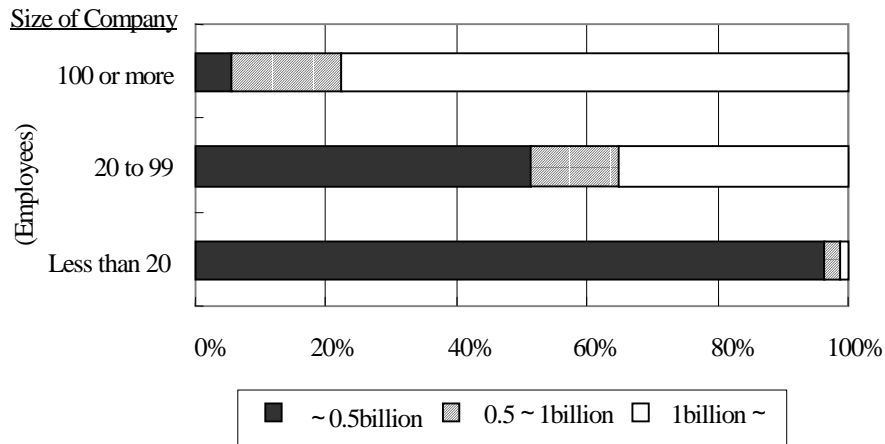


Source: Questionnaire Survey, JICA Study Team

(3) Needed Amount of Fund Raising

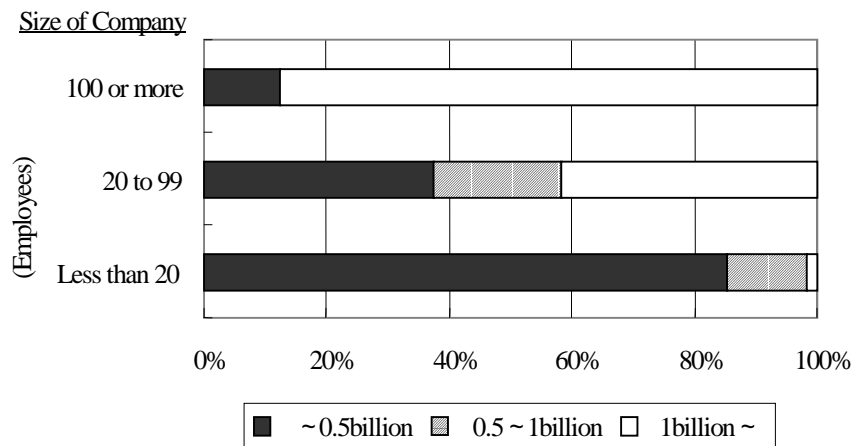
According to the questionnaire survey results, the majority of supporting industries require not more than 500 million Rp. However, the average amount is more than two billion in both working capital and investment fund. The amount of funds needed differs according to the size of the enterprises. Very small enterprises with less than 20 employees seldom need more than 500 million, while almost all enterprises with more than 100 employees require more than one billion rupiah.

Fig. 3-2-8 Amount of Funds to Be Raised (Working Capital)



Source: Questionnaire Survey, JICA Study Team

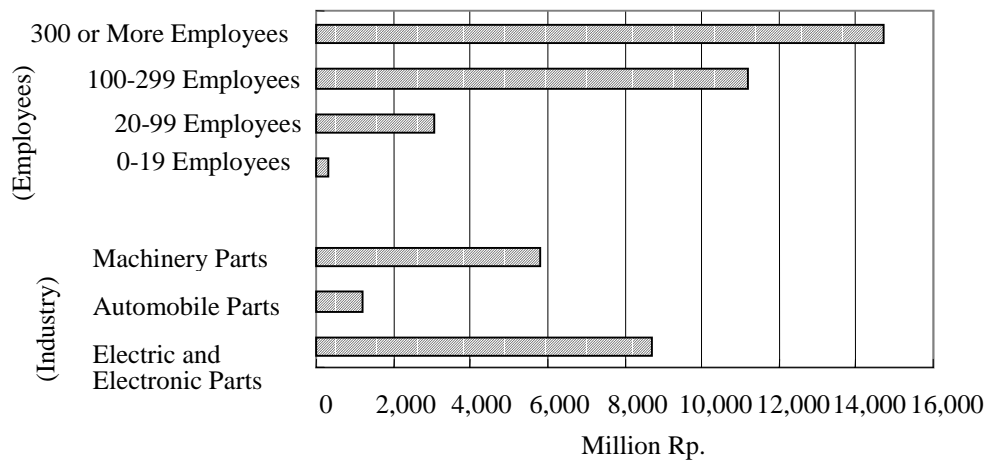
Fig. 3-2-9 Amounts of Funds to be Raised (Investment Funds)



Source: Questionnaire Survey, JICA Study Team

The amount of funds to be raised for working capital differs with the size and type of industry. An enterprise with more than 100 employees requires more than 10 billion rupiah on average. Enterprises in the machinery sector and electronics sector require relatively large amounts of working capital compared to those in the automobile sector.

Fig. 3-2-10 Amount of Funds to Be Raised for Working Capital (On Average)



Source: Questionnaire Survey, JICA Study Team

Besides the automobile parts sector, there is a very large difference in amount of funds required between exporting enterprises and domestic non-exporting enterprises. Exporting enterprises require more than 10 billion rupiah for working capital on average.

Fig. 3-2-11 Amount of Funds to be Raised for Working Capital

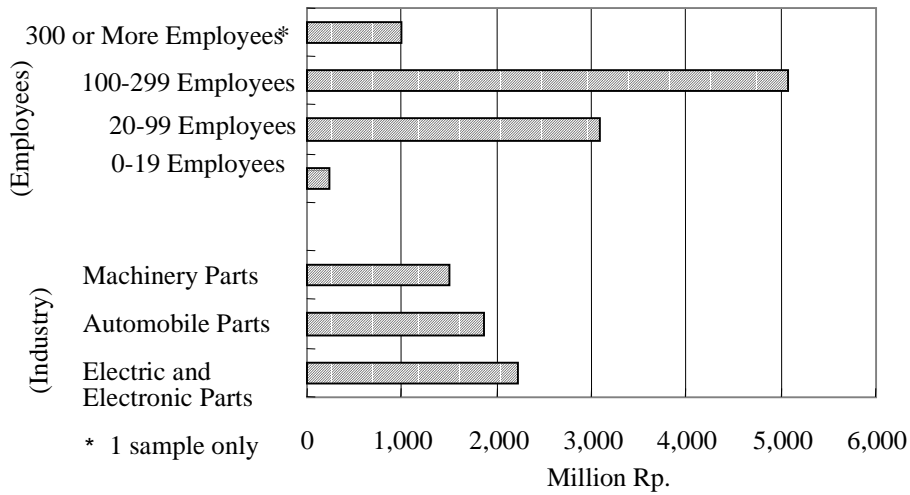


Source: Questionnaire Survey, JICA Study Team

As for investment credit, the required amount of funds increases in proportion to the size of the enterprise, except for enterprises over 300 employees of which there is only one sample. Enterprises with more than 100 employees require more than five billion rupiah

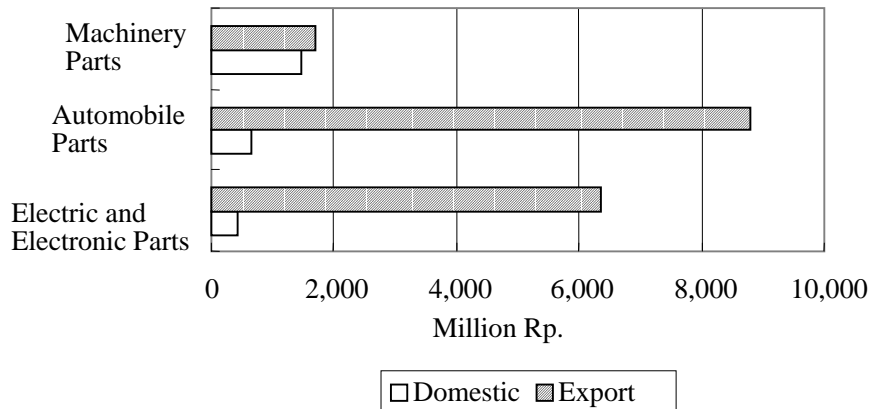
on average for investment credit. The difference between sectors is not so large, although enterprises in the electric parts sector require relatively large amounts of investment funds.

Fig. 3-2-12 Amount of Funds to be Raised for Investment by Size of Company and by Type of Industry



Source: Questionnaire Survey, JICA Study Team

Fig. 3-2-13 Amount of Funds to be Raised for Investment by Exporting Companies and Non-exporting Companies



Source: Questionnaire Survey, JICA Study Team

Besides the machinery parts sector, there is a very large difference in the amount of funds required between exporting enterprises and domestic non-exporting enterprises.

Exporting enterprises require more than six billion rupiah for investment credit on average.

2.4.2 Required Policy Measures

(1) Working Capital Financing Scheme for Small and Medium Industries

After the economic crisis, a considerable number of supporting industries are required to pay cash in advance and they are having difficulty in purchasing raw materials and parts. According to the questionnaire survey, about 75% of the supporting industries have to purchase their raw materials and parts by paying in cash in advance. This requires a large amount of working capital for the supporting industries and represents a heavy burden especially for small scale enterprises that do not have large amounts of self capital nor enough assets suitable for collateral.

For these reasons, several measures have already been taken as a social safety net. These include Working Capital for Rural Banks and Syariah Rural Bank Development (KMK-BPR, KMK-BPRs) and Credit for Micro Scale Entrepreneur through BPR (KPKM) of Bank Indonesia, and Small and Medium Scale Industry Development (IKM) of MOIT. However, these schemes are mainly for micro-scale industries and the lending limit is too low even for small-scale supporting industries.

(2) Enhancement of Export Financing, especially for opening L/C and for credit insurance of L/C

After the economic crisis of Southeast Asian countries in 1997, foreign banks have become reluctant to receive letters of credit (L/C) issued by Indonesian Banks. As a result, Indonesian supporting industries find it difficult to import raw materials and parts. Bank Indonesia and international financial cooperation organizations such as EXIM Bank of Japan, USAID, EXFIC of Australia, and ECGD of United Kingdom have prepared L/C confirmation facilities to take care of this problem. However, as a result of the banking crisis of 1998, domestic commercial banks also became very reluctant to open L/C in order to avoid increasing their risk assets. The L/C confirmation schemes above do not work if

the banking sector will not open L/C. To solve this problem, the Government of Indonesia has announced the establishment of a credit insurance scheme for L/C opened for export purposes. It will be provided by PT. ASKRINDO.

(3) Medium to Long Term Investment Credit Aiming at AFTA in 2002

Indonesian supporting industries will face very tough competition from other ASEAN nations with the enforcement of AFTA in 2002. To survive this international competition, it is necessary for Indonesian supporting industries to improve their products significantly, both in quality and cost, and to increase their international competitiveness.

According to the sector study team, many of the supporting industries use old machines and need increased investment to improve their level. However, for the reasons mentioned above, supporting industries have difficulties in raising long-term funds at an adequate interest rate. It is most essential that a financial assistance scheme to be made available for the capital investments of supporting industries. Under the present economic circumstances, however, it is very difficult for supporting industries to put forward enough collateral. Measures to ensure repayment other than collateral are also indispensable for investment credit schemes to supporting industries. Thus, a financial assistance project is proposed for investment by supporting industries, combined with technical support schemes.

3. EXPORT PROMOTION POLICIES

3.1 CURRENT EXPORT TENDENCY IN INDONESIA

3.1.1 Current Tendency of Non-oil and Gas Industries Export in Indonesia

The flow of Indonesian exports of the 10 biggest products in the five years from 1993 to 1997 is shown in Table 3-3-1.

Table 3-3-1 Exports of Non-oil and Gas Industrial Products by Industry

1993	1994		1995	1996	Unit: Million US\$		Annual Growth Rate 93-97 (%)
					1997	(%)	
1. Wood, Wooden Products	5,844.5	5,632.5	5,502.3	5,739.6	6,180.2	17.7	1.4
2. Textile	6,053.2	5,642.1	6,045.0	6,416.7	5,165.3	15.8	-3.9
3. Electronic Products	1,246.0	1,986.2	2,521.0	3,323.1	3,321.8	9.5	27.8
4. Palm Oil, Palm Products	897.6	1,455.9	1,498.6	1,685.7	2,368.1	6.8	27.4
5. Rubber Products	1,063.2	1,391.5	2,190.8	2,226.6	1,929.2	5.5	16.1
6. Leather Products, Footwear	1,909.2	2,154.1	2,338.0	2,446.1	1,822.8	5.2	-1.2
7. Metal Products, Machines, Automotive	1,280.3	1,376.6	1,806.3	1,978.4	1,807.0	5.2	9.0
8. Paper, Paper Products	538.9	736.0	1,452.0	1,387.4	1,427.8	4.1	27.6
9. Basic Chemical Products	278.3	370.1	660.4	785.6	1,008.7	2.9	38.0
10. Gold, Silver, Precious Metal	423.8	872.6	379.9	615.3	927.8	2.7	21.6
Sub Total	19,535.0	21,617.6	24,394.3	26,604.5	25,958.7	779.4	7.4
Others	3,757.8	4,084.6	4,933.9	5,512.5	6,739.7	20.6	15.7
Total	23,292.8	25,702.2	29,328.2	32,117.0	32,698.4	100.0	8.8

Source: Badan Pusat Statistik

The total export amount of non-oil and gas industrial products increased at the average annual rate of 11.3% during the period from 1993 to 1996. The currency crisis, which started in mid-1997, severely affected Indonesian non-oil and gas product exports, which recorded growth of only 1.8% on a year to year basis in 1997. Exports of 10 major non-oil and gas industrial products decreased by 2.4% compared with the previous year. This was mainly due to the difficulty in importing raw materials, the cautious behavior of foreign buyers who are being afraid of late delivery, and the shrinking demand in the world market which

occurred simultaneously following the currency crisis

The most rapid growth of exports during the period from 1993 to 1997 was seen in “Basic chemical products,” which was brought about by a sharp increase in the export of polymer products from US\$44 million to US\$312 million, and other organic chemicals from US\$54 million to US\$397 million.

“Electronic products,” “Palm products,” and “Paper-related products” also showed significant growth.

Data processing equipment (US\$106 million to US\$897 million), video cassette recorders (US\$328 million to US\$655 million), electricity transmitting equipment and parts (US\$113 million to US\$356 million), and ICs (US\$51 million to US\$232 million) contributed to the sharp rise of “Electronic products” exports.

An increase in palm oil exports (US\$524 million to US\$993 million) and cooking oil (US\$ 59million to US\$ 747million) pushed up “Palm products” to the country’s fourth biggest export product. A big rise came in 1997 after the export tax was reduced from 10-12% to 2-5% in July,1997.

The export of material pulp (US\$ 38million to US\$ 489million), carton products (US\$ 87million to US\$ 207million) and cultural papers (US\$ 321million to US\$ 592million) also increased sharply so that the total amount of “Paper-related products” exported in 1997 was more than 2.5 times as much as in 1993.

On the other hand, exports of well-known Indonesian export products have stagnated. The growth of “Wooden products” during the period 1993 to 1997 was low because exports during 1994 to 1996 were less than that of 1993. Exports of “Textile and Textile products,” which had been recovering since 1994 to 1996, decreased again by 19.5% in 1997 and, therefore, the increase of exports remained at only 14.7% compared to 1993. Exports of “Leather products and Footwear” fell in 1997 although they had been steadily growing during 1993 to 1996. The average annual growth rate of “Leather products” exports during 1993 to 1997 was minus

1.2%.

Exports of “Metal, Machinery and Automotive products” grew by 41.4% but they still remained in 7th position among the 10 biggest export products. Compared with the previous year, their export amount decreased by 8.7% in 1997, falling to the same level as in 1995. In this category, significant increases of exports can be seen only in the components of bicycle and motor vehicles (US\$ 147million to US\$ 292million), heavy-duty vehicles and components (US\$ 38million to US\$ 127million), and steel structures (US\$ 17million to US\$ 172million).

The industries and products, which showed rapid growth during 1993 through 1997, are as shown in Table 3-3-2.

Table 3-3-2 Industries and Products of Rapid Growth in Exports

Industries of Rapid Growth in Export	Products of Rapid Growth in Export
Rubber Products	Powdered Rubber and Tires for Bicycle and Motor Vehicles
Paper Products	Pulp, Waste Paper and Cultural Papers
Palm Products	Palm Oil and Cooking Oil
Metal, Machines and Automotive Products	Components of Bicycle and Motor Vehicles, Heavy-duty Vehicles and Components, and Steel Structures
Gold, Silver and Precious Metal Products	Gold Accessories
Electronic Products	Data Processing Equipment, Video Cassette Recorders, Electricity Transmitting Equipment and Parts, and Ics
Basic Chemical Products	Polymer Products and Other Organic Chemicals

Source: Based on the Data of the Badan Pusat Statistik.

3.1.2 Effect of Economic Crisis on Export of Non-oil and Gas Industrial Products

The growth of exports in 1998 slowed down sharply because the impact of the economic crisis, unstable political situation, and social unrest became significant. The exports from January to October in 1998 were shown in Table 3-3-3. Exports of non-oil and gas industrial products during this period grew only by 0.9% compared with the same period in 1997.

The major reasons for this were the stagnant world demand, shrunken trade financing, and loss of overseas buyers' confidence. The difficulties in trade financing for importing materials, which occurred as a result of the shaky conditions of Indonesian banks, are still negatively affecting the smooth production of some of the export goods. Furthermore, the several riots, which happened in 1998, caused serious anxiety among foreign buyers about the certainty of delivery of ordered goods and many of them hesitated to place orders in Indonesia or canceled the confirmed orders.

Table 3-3-3 Comparison of Export of Non-oil and Gas Industrial Products (1995 - 1998)

Unit: % US\$ Million

Products	Change 95/96	Change 96/97	Export Amount		Change 97/98 Jan. -Oct.
			1997 Jan. -Oct.	1998 Jan. -Oct.	
			Wood, Wooden Products	4.3	
Textile	6.1	-19.5	4,642.5	4,396.1	-5.3
Electric & Electronic Products.	31.8	0.0	2,800.9	2,493.3	-11.0
Metal Products, Machines, Automotive	9.5	-8.7	1,427.9	2,168.1	51.8
Gold, Silver, Precious Metal	62.0	50.8	824.0	2,059.2	149.9
Paper, Paper Products	-4.4	2.9	1,164.2	1,898.2	63.1
Rubber Products	1.6	-13.4	1,636.9	1,321.1	-19.3
Palm Oil, Palm Products	12.5	40.5	1,899.1	1,314.7	-30.8
Leather Products, Footwear	5.1	-29.3	1,638.0	1,310.7	-20.0
Basic Chemical Products	19.0	28.4	831.5	1,268.2	52.5
Sub-total	9.5	5.6	21,992.6	22,052.5	0.3
Others	11.7	22.3	5,311.0	5,501.3	3.6
Total	9.5	8.5	27,303.6	27,553.8	0.9

Source: Badan Pusat Statistik

Thus the economic crisis and the following unrest of the society caused drastic changes in the export structure in 1998. The effect of the economic crisis on the export of each industry has been mixed. Table 3-3-4 shows the growth tendency of the export of each commodity in the period before and during the economic crisis. The industries and products which showed fast growth during January to October in 1998 are shown in Table 3-3-5. The industries and products which failed to grow and their possible reasons are shown in Table 3-3-6.

Table 3-3-4 Growth Tendency of Export of Non-oil and Gas Industrial Products (1993 - 1998)

Products	93-96	97/96	98/97
Wood, Wooden Products	Mixed	Fast	Fairly Negative
Textile	Steady	Fairly Negative	Moderately Negative
Electric & Electronic Products.	Fast	Zero	Fairly Negative
Metal , Machines, Automotive Products	Fast	Moderately Negative	Fast
Gold, Silver, Precious Metal	Mixed	Fast	Fast
Paper , Paper Products	Fast	Steady	Fast
Rubber Products	Fast	Fairly Negative	Fairly Negative
Palm Oil, Palm Products	Fast	Fast	Fairly Negative
Leather Products, Footwear	Fast	Fairly Negative	Fairly Negative
Basic Chemical Products	Fast	Fast	Fast

Source: Based on the Data of the Badan Pusat Statistik.

Table 3-3-5 Industries and Products Which Showed Fast Export Growth

Industry	Commodity
Gold, Silver, Precious Metals and Accessories	Gold accessories (increased to US\$1.65billion)
Paper Products	Pulp materials and cultural papers
Metal, Machinery and Automotive Products	Hot rolled coil, steel wire, heavy-duty vehicles and components, electric motor (moderate growth) Offshore steel structures (The biggest rise of US\$300million, but could be one time order.)
Basic Chemical Products	Organic chemicals

Source: Based on the Data of the Badan Pusat Statistik.

Table 3-3-6 Industries and Products Which Do Not Show Export Growth

Reason	Industry	Commodity
Fragile Market	Electric and Electronic Products	Video Cassette Recorders
	Wooden Products	Plywood and Furniture
	Textile	Textile and Clothing
Supply Problem (Low supply to the domestic market and higher price there)	Wooden Products	Plywood
	Palm Products	Cooking Oil
Deterioration of Trade Finance and Fear of Delivery Risk	Leather Products and Footwear	Footwear
	Textile	Clothing
Long-time Declining Tendency or Back to Original Track of Growth	Rubber Products	Rubber Powder
	Palm Products	Cooking Oil
High Export Tax	Palm Products	Palm Oil, Cooking Oil

Source: Based on the Data of the Badan Pusat Statistik.

Those that are still fast growing are only “Gold, Silver, Precious metal products,” “Paper products,” and “Basic chemical products.” “Electronics products” and “Palm products,” which seemed to have a strong hold due to the drop of the currency value, decreased. “Rubber products” and “Leather products and Footwear” became even weaker.

“Wooden products,” which had recovered in 1997, sank again. Plywood and furniture exports also decreased by US\$1.25 billion and US\$466 million, respectively. The decrease in plywood exports was due to a sharp drop in domestic supplies primarily caused by heavy rains, which disrupted logging activities and the transportation of timber to mills. It is also pointed out as a reason for the export decrease that most companies were reluctant to export products because the domestic prices are much higher. This was caused by the scarcity of the domestic supply of timber. In the case of furniture, the weak overseas market due to the economic recession seemed to affect exports from Indonesia.

“Textile products” exports decreased by 5.3% in the period from January to October of 1998, compared to the same period of 1997. This is mainly because textile production could not be carried out as scheduled, due to the difficulties in opening L/C for imports of materials, the sharp rise in prices of material yarns and fabric, the tightening conditions for dealing in domestic business, and so on. The cautious attitudes of foreign buyers, which have been created by the recognition of the country risk of Indonesia and the weak world market conditions were also reasons for the decrease of textile exports. It is predicted, however, that the total export amount for the year of 1998 would remain at the same level as in 1997.

It is assumed that the sluggish economic conditions in the export market countries are surely curbing the export of “Electric and Electronic products,” which was seen in the fact that the export of videocassette recorders decreased by US\$300 million in 1998.

In “Metal, Machines and Automotive products,” which showed fast growth in 1998, the export of hot rolled coil, steel wire, heavy-duty vehicles such as bulldozers or forklifts and their components and electric motors made moderate growth. The biggest rise came from the export of offshore steel structures of US\$300 million, which had never exceeded US\$115 million in the past. This might be because the cheaper rupiah made the domestic portion of

the manufacturing cost more competitive. Encouraged by a lowering value of the currency, many Indonesian suppliers of machine parts and components, who are mostly foreign affiliates, are trying to diversify their production to the export market. Contrary to those expectations, their international competitiveness is limited to an extent much lower than it should be, because of such negative factors as the relatively low efficiency of Indonesian workers, the limited variety of materials obtainable domestically, more expensive freight, and so on.

Exports of “Precious metal accessories,” which are mostly of gold products and compete with Malaysia, kept growing fast. Although Indonesia relies on imports for one third of the total supply of gold materials, it succeeded in utilizing the decreased value of the Indonesian currency, which made the labor cost relatively cheaper. The export amount soared to US\$1.65 billion, an increase of US\$900 million. This boosted the export amount of the products in the category of “Gold, Silver, Precious metal products.”

Among “Paper products,” the export amount of pulp materials and cultural papers jumped by more than 80%, that is, US\$ 709 million in the period up to October 1998. This is a drastic change in the export pattern because exports had been staggering for two to three years before the economic crisis occurred and the value of the rupiah dropped. The lower value of the currency directly contributed to the increase of exports after the economic crisis occurred. Contrary to the favorable effect on exports, the lowered value of the currency damaged the financial conditions of those who borrowed foreign currency to expand production facilities in order to keep up with the rapid growth of demand. Some manufacturers in this field are suffering from the difficulty of opening letters of credit for importing materials, because of the worsening financial conditions. The weakening demand in the foreign market would be another negative factor for export.

Exports of “Rubber products” became even weaker. Rubber powder export, which fell US\$200 million in 1998, has been decreasing since 1995.

Among “Palm products,” the export of palm oil decreased by 54.6%, or US\$ 414 million, in the first 10 months of 1998 and is going to be well under the past export level of US\$700 million. Cooking oil export, which suddenly jumped by 120% in 1997, has decreased by

50.1%, or US\$303 million, and returned to its original track of growth. This up and down was due to the change in export tax rates. After the export taxes were reduced to 2 - 5% from the preceding rates of 10 - 12% in July 1997, the export of palm products jumped and then the domestic prices rose sharply. Afterwards, the government hastily put a tentative limitation on the export of palm products. Export taxes were raised up to 15 - 40% in April 1998 and again to 15 - 60% in July 1998, although it was agreed with the IMF to reduce them down to 10% by the end of 1999. Recently the government decided to reduce the export tax rate on palms, in order to boost exports again.

The "Footwear" industry, which imports 65% of its materials and exports 85% of its total production, is a typical victim of the financial and economic crisis and political and social unrest in the country. The export amount of footwear in 1997 decreased by 30% to US\$ 1,531 million from US\$ 2,195 million in the previous year. In the period from January to October of 1998, it further decreased by 26% to only US\$ 1,035 million from US\$ 1,398 million in the same period of 1997. The Indonesian Footwear Association (APRISINDO) explains that this decline of export is due to the fact that foreign buyers are anxious about the insecure situation of the material import of the Indonesian manufacturers and consequent uncertain delivery of final products. The refusal by foreign banks to accept L/C opened by Indonesian banks was the start of the uneasiness in foreign trade finance. The following confusion of trade financing policies in Indonesia related to the measures to cover up the L/C problems and the reluctance of Indonesian private banks to open L/C are surely causing serious damage not only to footwear industries but also to the Indonesian export industries in general.

Among "Basic chemical products," organic chemical products such as polymer products and miscellaneous organic chemical products kept growing so that the total export amount of basic chemicals products increased by more than 50%. The sluggish world market also places a ceiling on the increase of chemical exports as well as for the export of other products.

3.1.3 Tendency of Exports by the Small-Scale Industries in Indonesia

The export trend of the small-scale industries (SSIs) of Indonesia from 1993 to 1997 is shown in Table 3-3-7. During this period, SSIs had failed to show steady export growth. While SSIs exports grew only by 13.9% in the period from 1993 to 1997, the total industrial products export increased by 40.4%. Consequently, the share of SSIs exports in the total non-oil and gas industrial commodity export has declined from 9.5% in 1993 to 7.7% in 1997.

Table 3-3-7 Export Records of Small-Scale Industries

Unit: Million US\$, %

	1993	1994	1995	1996	1997	Change 1993/97
Various Industries	1,253 (56.6)	1,120 (44.1)	1,206 (55.8)	1,294 (51.7)	1,032 (40.9)	-17.6
- Garments	773 (34.9)	684 (26.9)	713 (33.0)	762 (30.4)	615 (24.3)	-20.4
- Batik	156 (7.0)	190 (7.5)	206 (9.7)	205 (8.2)	195 (7.7)	25.0
- Others	324 (14.6)	245 (9.6)	286(13.2)	327 (13.1)	222 (8.8)	-31.5
Metal, Machinery, Chemicals	455 (20.6)	919 (36.1)	422 (19.5)	659 (26.3)	96 5(38.3)	112.1
- Precious Metal, Accessories	250 (11.3)	733 (28.8)	340 (15.7)	533 (21.3)	708 (28.1)	183.2
- Gold Products	180 (8.1)	146 (5.7)	4 5(2.1)	88 (3.5)	224 (8.9)	24.4
- Others	25 (1.1)	40 (1.6)	37 (1.7)	38 (1.5)	33 (1.3)	32.0
Agricultural Industry	505 (22.8)	503 (19.8)	532 (24.6)	550 (22.0)	525 (20.8)	4.0
- Dried Fish	49 (2.2)	77 (3.0)	59 (2.6)	77 (3.1)	46 (1.8)	-6.1
- Wooden Products	133 (6.0)	152 (6.0)	179 (8.3)	178 (7.1)	154 (6.1)	15.8
- Rattan	48 (2.1)	49 (1.9)	62 (2.9)	53 (2.1)	34 (1.3)	-29.2
- Others	275 (12.4)	224 (8.8)	231 (10.7)	241 (9.6)	290 (11.5)	5.5
TOTAL	2,213 (100.0)	2,542 (100.0)	2,160 (100.0)	2,503 (100.0)	2,522 (100.0)	14.0

Source: Compiled by MIS Division, Center for Data and Information, MOIT.

Note: Figures in () indicate the proportion to the total.

Agricultural industries, as a whole, have maintained the export level of around US\$500 million. But wooden products, which showed steady export growth until 1996, again went down in 1997. Only the export of gold products, precious metal products and accessories rose considerably in 1997. Other industries including garments and batik also decreased

exports in 1997. This might be because of their failure to attract buyers in terms of quality, design and cost performance, and because of insufficient marketing, the uncertainty in delivery of goods, the weak market condition and so on.

Table 3-3-8 shows the change in SSIs exports between 1997 and 1998. Exports of SSIs products, except for gold and precious metal products and accessories, decreased in 1998.

The possible reasons for the continuous decrease of exports during the economic crisis are as follows.

- i. Difficulty in opening L/C to import raw materials has led to the suspension of production in many SSIs.
- ii. Sharp drops in domestic sales made difficult for SSIs to maintain normal production and sometimes forced the closure of factories.
- iii. Many SSIs have a weak sales network and are unable to have close and frequent contacts with overseas customers.
- iv. SSIs have not established stable and good reputation for their products in the overseas markets.
- v. SSIs can not keep up with the quickly changing financial situation.

**Table 3-3-8 Change in Export Amount of Small-Scale Industries
(1997 and 1998)**

Unit: Million US\$, %

	Export Amount		Change 97/98 Jan. – Oct.
	Jan. – Oct. 1997	Jan. - Oct. 1998	
Various Industries	923.52	797.44	-13.7
- Garments	546.93	482.95	-11.7
- Batik	176.55	143.99	-18.4
- Others	200.04	170.51	-14.8
Metal, Machinery, Chemicals	858.56	2,083.82	142.7
- Precious Metal, Accessories	665.38	652.80	148.4
- Gold Products	161.81	410.26	153.5
- Others	31.37	20.77	-33.8
Agricultural Industries	444.83	466.79	4.9
- Dried Fish	41.73	28.62	-31.4
- Wooden Products	145.76	86.31	-40.8
- Rattan	32.17	10.65	-66.9
- Others	225.17	341.20	51.5
Total	2226.91	3348.056	50.3

Source: Compiled by MIS Division, Center for Data and Information, MOIT.

3.1.4 Export Trends of the Related Industries

Table 3-3-9 shows the trends in imports and exports of items related to this Study, that is, parts and components for the machinery, automobile, and electric and electronic industries.

The product items the annual growth rate of which were over 10% during the period 1995 – 1997 are shown in Table 3-3-10, those below 10% are shown in Table 3-3-11.

Table 3-3-9 Trends in Export and Import of Products Related to the Study

Unit : US\$ Million

SITC No.	Item	1995		1996		1997		1997 (Jan-Oct)		1998 (Jan-Oct)	
		Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
71	Power-driven machinery and parts	90.5	1,827.6	144.0	1,968.6	170.6	1,877.0	147.4	1,563.8	278.9	916.0
73	Metalworking equipment	5.0	600.4	6.0	598.3	5.6	515.2	3.7	423.3	12.2	342.7
74	Industrial machinery and parts	159.2	2,746.4	205.0	3,293.3	190.6	3,381.1	178.0	2,859.4	177.2	1,885.5
75	Office equipment and parts	501.4	241.1	800.0	301.7	919.8	353.0	802.6	303.4	692.2	129.6
751	Office equipment	78.6	54.4	39.7	65.8	35.8	56.8	31.9	50.0	31.9	11.3
752	Computers and peripheral devices	169.9	121.7	403.2	189.4	264.6	235.1	253.9	201.5	74.3	97.8
759	Parts for office equipment	252.9	65.0	357.1	46.5	619.3	61.1	516.9	52.0	586.0	20.5
76	Communication equipment and parts	1,634.3	1,086.2	2,067.1	1,766.2	1,752.8	1,778.8	1,539.2	1,550.5	1,197.2	380.4
761	Televisions	33.2	5.9	45.1	3.7	64.9	6.8	56.7	5.7	41.3	2.6
762	Radios	519.5	13.0	460.8	24.9	254.5	50.9	225.0	42.3	183.9	14.5
763	VCRs and tape recorders	692.6	6.3	837.2	13.1	803.7	13.9	710.2	12.4	406.8	2.4
764	Communication equipment and parts	389.0	1,061.0	724.0	1,724.4	629.7	1,707.2	547.3	1,490.2	565.1	360.9
77	Electric equipment and parts	795.0	1,979.1	1,075.5	1,890.6	1,073.2	2,160.4	921.2	1,821.4	893.6	1,031.5
775	Household electrical appliances	14.9	94.6	18.8	69.2	30.2	88.5	27.4	72.3	38.3	35.3
776	Cathodes and semiconductors	145.3	398.1	220.4	333.7	220.7	216.6	195.2	191.2	163.7	65.3
778	Others (including electrical equipment)	386.8	436.8	465.6	427.8	412.5	483.7	365.3	407.2	330.4	257.6
78	Automobiles	372.2	2,983.7	348.2	2,673.5	324.8	2,592.9	285.9	2,201.0	269.0	830.9
781	Passenger vehicles	21.4	159.8	27.8	227.6	22.1	253.1	20.1	223.7	14.9	51.6
782	Commercial vehicles	3.0	303.1	3.2	368.3	8.2	331.9	5.7	284.2	14.2	236.8
784	Auto parts	48.1	1,843.2	62.4	1,359.5	101.7	1,297.2	90.6	1,099.0	84.6	336.8
785	Motorbikes	246.9	557.8	183.6	639.8	171.2	646.2	149.7	543.9	144.7	171.4

Source: *Indonesia Foreign Trade*, Badan Pusat Statistik

Table 3-3-10 List of Export Increase Items

SITC	Product	Average Annual Growth Rate 1995 - 1997	Growth Rate 1997 – 1998 (Jan. – Oct.)
782	Commercial vehicles	65%	149%
759	Parts for office equipment	56%	13%
784	Automotive parts	45%	-7%
775	Household electrical appliances	42%	40%
761	Televisions	40%	-27%
71	Power-driven machinery and parts	37%	89%
764	Communication equipment and parts	27%	3%
752	Computers and peripheral devices	25%	-71%
776	Cathodes and semiconductors	23%	-16%

Source: Based on Indonesia Foreign Trade, Badan Pusat Statistik

Table 3-3-11 List of Export Stagnant Items

SITC	Product	Average Annual Growth Rate 1995 - 1997	Growth Rate 1997 – 1998 (Jan. – Oct.)
74	Industrial machinery and parts	9%	0%
763	VCRs and tape recorders	8%	-43%
73	Metal-working equipment	6%	230%
778	Others (including electrical equipment)	3%	-10%
781	Passenger vehicles	2%	-26%
785	Motorcycles	-17%	-3%
762	Radios	-30%	-18%
751	Office equipment	-33%	0%

Source: Based on Indonesia Foreign Trade, Badan Pusat Statistik

3.1.5 Current Status and Impact of Economic Crisis on the Supporting Industries’ Exports from the Results of the Questionnaire Survey

(1) Effect of Economic Crisis on Exports of Supporting Industries

During the study by the JICA Study Team, a questionnaire survey was carried out to review the effect of economic crisis on, and the current status of, exports of supporting industries in

the fields of automotive, electric and electronics, and industrial machinery parts and components.

Among 334 companies who gave effective answers, 103 companies have an export record and 101 companies gave effective answers to the questions about the effect of the economic crisis on exports.

Table 3-3-12 Effect of Economic Crisis on Exports (By type of capital)

Unit: No. of Companies

			Answer			No. of Respondent Companies
			Decreased	No Change	Increased	
By Type of Industry	Electric & Electronics	Domestic	14	3	8	25
		Foreign	14	10	3	27
		Total	28	13	11	52
	Automotive	Domestic	3	5	3	11
		Foreign	6	2	3	11
		Total	9	7	6	22
	Industrial Machinery	Domestic	7	4	3	14
		Foreign	1	2	8	11
		Total	8	6	11	25
	Others	Domestic	1	-	1	2
		Foreign	-	-	-	-
		Total	1	-	1	2
Total		Domestic	25	12	15	52
		Foreign	21	14	14	49
		Total	46	26	29	101

Source: Questionnaire Survey, JICA Study Team

Among the electric and electronics parts and components companies, there are more domestic companies which increased their exports after the economic crisis. Most of the foreign companies in that field failed to increase exports. This may be a reflection of the scheduled production system of their parent companies, based on the distributed production among other countries, weak overseas market and/or the anxieties of parent companies about the security of delivery from Indonesia. In industrial machinery parts companies, about 70% of foreign companies succeeded in increasing their exports. This might stem from their urgent efforts to diversify the markets from the slowing domestic market to the export market or the

improved price competitiveness due to the decrease in the value of rupiah.

In electric and electronics, and automotive parts fields, there are more companies, both domestic and foreign, that decreased their export and failed to utilize the improved price competitiveness.

Table 3-3-13 Effect of Economic Crisis on Exports by Size of Companies

Unit: No. of Companies

		Answer			No. of Respondent Companies
		Decreased	No Change	Increased	
By Number of Employees	19 or Less	7	2	1	10
	20-99	9	3	7	19
	100-299	4	7	8	19
	300 or More	20	13	12	45
Total		40	25	28	93

Source: Questionnaire Survey, JICA Study Team

Among 38 companies, which have 20-299 employees, 15 companies or 40% increased exports. There are five in electric and electronics and seven in industrial machinery parts fields. On the other hand, 20 companies or 45% decreased exports among 45 large companies with 300 or more employees. 15 companies of the above the 20 are electric and electronics companies.

In the category of medium sized companies with 20-299 employees, the responses of “decreased,” “no change” and “increased” accounted for approximately one third each. The managerial ability of top management might be the decisive factor determining into which category a company falls. On the other hand, large companies might have difficulties in responding to the crisis and be late in taking appropriate countermeasures.

Among those which decreased exports, 31% of the companies decreased exports by 25-50%, and 40% of the companies by 50-75%. Many companies in this category are in the electric and electronics and the automotive industry groups and have 300 and more employees. Thus, electric and electronics and automotive parts exports have suffered most.

Nine companies out of 24 companies, which increased exports, doubled their exports. Of those nine companies, five have 300 or more employees and four have 20-299 employees. In terms of industry, five companies are in the electric and electronics parts industry.

The economic crisis brought about opposite consequences depending on the position of the companies: whether they need imported materials and can secure import finance, or whether they can expect assistance for export promotion from their parent companies or not.

(2) Problems Concerning Exports of Supporting Industries

There are 103 companies which currently export. Among 231 companies with no experience in exports, 75 companies wish to start exports, of which 34 companies are in the machinery parts industry, 26 in the automotive parts industry, 14 in the electric and electronics parts industry, and one in the other industry. Among 75 companies wishing to start exports, 63 companies are small companies employing 99 or less employees.

Based on the fact mentioned above, it is considered that 178 companies have an interest in export promotion. 152 companies answered the question concerning the problems of export promotion. The results of the questionnaire survey are shown in Table 3-3-14.

Table 3-3-14 Problem of Export Promotion

Unit: No. of Companies, %

Problem	No. of Companies	Proportion to the Total* (%)
Lack of ability for export promotion	70	46.1
Lack of ability to handle the export procedures	32	21.1
Trade infrastructure	34	22.4
Tax scheme	25	16.4
Foreign exchange market	33	21.7
Finance	53	34.9
Governmental policies	27	17.8

Source: Questionnaire Survey, JICA Study Team

Note: * The number of total companies which responded this question was 152.

Most of the companies with employees of 99 or less said they lack the ability for export promotion and the ability to handle export procedures. Governmental support to make up such inability of small enterprises is very vital. The government should provide them with overall and complete market information, supporting and cooperative efforts for marketing, and more opportunities for education and training on export procedures.

At the same time, the government should set up more tax incentives for exports and plan financial assistance measures for the supporting industries, in order for them to have a financial basis for export activities. The present problems in financing the import of materials and in financing for working capital for exports should be solved as soon as possible.

(3) Requests of the Supporting Industries for Assistance in Export Promotion

More than 305 companies out of 334 answered the questions regarding desired governmental assistance for export promotion activities of the supporting industries. The following tables show the answers to the question.

**Table 3-3-15 Evaluation of Export Promotion Support Measures
(For Total Companies)**

Assistance	Answer		
	Very Important	Important	Not Important
Dispatch of overseas trade mission	34.1%	36.9%	29.0%
Subsidy for the participants of overseas trade fairs	29.1%	49.4%	21.5%
Providing overseas market information	48.4%	43.4%	8.2%
Exporter registration scheme	16.7%	47.5%	35.7%
Consulting services for trading	29.4%	57.5%	13.1%
Expansion of trade training courses	29.4%	56.8%	13.9%
Export incentive/ Financial assistance	40.9%	48.4%	10.7%
Export incentive/ Tax reduction	43.0%	49.5%	7.5%

Source: Questionnaire Survey, JICA Study Team

**Table 3-3-16 Evaluation of Export Promotion Support Measures
(For Companies with Employees of 19 or Less)**

Assistance	Answer		
	Very Important	Important	Not Important
Dispatch of overseas trade mission	29.3%	25.0%	45.7%
Subsidy for the participants of overseas trade fairs	25.9%	50.0%	24.1%
Providing the overseas market information	41.4%	52.6%	6.0%
Exporter registration scheme	16.1%	37.5%	46.4%
Consulting services for trading	36.2%	54.3%	9.5%
Expansion of trade training courses	38.8%	53.4%	7.8%
Export incentive/ Financial assistance	33.6%	57.5%	8.8%
Export incentive/ Tax reduction	36.9%	57.7%	5.4%

Source: Questionnaire Survey, JICA Study Team

Many of the supporting industries do not have enough strength to access the overseas markets, and are unable to acquire market information directly. This is an area in which the government must provide assistance. In addition, the smaller sized enterprises have a stronger desire for consulting services and trade training courses. In order to fulfill their requests, NAFED and IETC have to seek ways to provide cooperative or joint services and they must expand their services both in quality and quantity.

At the same time, many companies request such export incentives as financial assistance and tax reductions to promote their exports. The bigger companies have more earnest requests in these areas.

On the other hand, more than one third of the total companies do not see the positive meaning in the exporter registration scheme. It may be because the object of the scheme is not clear or is out dated, and the scheme has not been utilized to the fullest extent.

It is also very meaningful that about 30% of the total answers and more than half of those from companies with 19 or less employees were negative regarding the dispatch of overseas trade missions by the government.

3.2 MAJOR PROBLEMS IN INDONESIAN EXPORTS AND COUNTER-MEASURES

3.2.1 Short Term Problems and Counter-Measures

- (1) The obstacles and problems of Indonesian exports in the short term
 - i. Growing concern about delivery caused by political instability and social unrest

Because of the political unrest in recent days, overseas buyers have become very cautious about placing orders with Indonesian exporters, because of worries about their inability to provide secure and steady delivery of ordered goods. According to an article in "Bisnis Indonesia," US\$182million worth of export contracts were canceled in December 1998 and January 1999.

Maintaining delivery terms is vital in any transaction, especially in export. Once a social system has deteriorated so much that the promised delivery terms can not be met, buyers' confidence in the country is lost and will not return for a considerable time.

As a general election is scheduled to take place in the beginning of June and the presidential election will be held in November 1999, many people predict that social and political unrest will not be improved before the year-end. Therefore, overseas buyers' concern may remain throughout 1999.

- ii. Difficulties in importing the materials for export products, due to trade finance problems

After the currency crisis occurred in the summer of 1997 in Thailand, it spread over to Indonesia in the latter half of the same year. Consequently, many of the Indonesian banks had to face the problem of capital shortage and then of bad loans. Due to doubts about the soundness of Indonesian banks, foreign banks started to

refuse accepting L/C opened by Indonesian banks. This sudden change in the L/C situation caused Indonesian exporters to have difficulty in acquiring imported materials for producing export products.

To prevent L/C problems from becoming worse, Bank Indonesia declared that it would set up funds for confirming L/C opened by Indonesian banks, aiming to make for the weakness of Indonesian L/C. In line with BI's effort, such foreign governments as Japan, USA, Australia, Germany, and Canada cooperated in supplying funds for L/C confirmation. As of January 1999, Holland, China, Britain and Singapore also started talks with BI about the supply of trade financing of same nature. BI also decided to provide 80% of guarantee on trade financing for the small and medium industries.

Contrary to expectations, however, neither countermeasure worked well. The former failed to function because the private banks were reluctant to apply to BI for confirming L/C, as they were afraid that they might accumulate more bad loans due to the opening new L/C. In addition, there was the lack of technical guidance to the L/C opening banks, the limited information on the export finance facilities, or the unsuitable terms and conditions such as the short duration and high confirmation charge of the L/C confirmation. The latter did not work as BI expected, because the interest rates for SMI trade loans is set at merely 16% whereas the ordinary loan interest is nearly 50% p.a. Another factor is that banks are asking 100% collateral for opening L/C to eliminate their risks.

The inability to solve the trade finance problem had a severe impact on the export industries that have to import their materials. As seen before, the export of footwear, which imports 65% of its materials and exports 85% of finished goods, declined by 30% in 1977 and 26% in 1998.

There are now plans to establish a government sponsored Export Financing Agency. The agency is expected to provide short-term financing for exports, which will include pre-shipment working capital, export credits, and export insurance. It will

also operate as an export information and data center. The question is whether the agency is able to secure the financial soundness, the necessary expertise and the sufficient service network in time.

iii. Weak export market

The economic crisis in Asia made the purchasing power of Asian countries, including Japan, weaker. This is one of the reasons that the export of such consumer goods as textiles, footwear, electric and electronics goods and furniture tended down in 1998. As the value of the rupiah went down considerably, the export of those products should have increased a great deal if the economies of the market countries had remained stronger.

It also brought hard competition in such export markets of those products as the US and Europe. The competition is not limited only with other developing countries but also harder competition among Indonesian exporters.

iv. Lack of export promotion policies

The country has no complete, integrated and strategic export promotion policies. Because of this, it seems that the integrated and coordinated export promotion efforts along with the designated direction can hardly be attained among the various governmental organizations.

v. Vulnerable marketing abilities and the NAFED scheme

While the country badly needs the promotion of exports, the Government closed NAFED-controlled Indonesian Trade Promotion Centers in 13 countries last year. Thus, Indonesia came to have no direct and regular market penetration scheme other than the emporium in Batam. The periodic participation in international trade fairs or the occasional dispatch of trade missions seems not enough as positive marketing measures.

Market information provided by NAFED is not enough to provide the exporters with the full knowledge of export markets. To promote exports, the exporters should have full knowledge of market conditions, market requirements, marketing routes, and marketing practices in the market countries. There is no full range library in Indonesia in this field and most of the market information is scattered in personal databases. In addition, the supply of information on export procedures to those who want to try to export is insufficient.

Many of the NAFED staff lack practical knowledge of and experience in the export business and also lack marketing research and analysis abilities. Further, there is no systematic and integrated training or education program for the NAFED staff.

vi. Confused development scheme of export products by NAFED

Under the present organization structure of NAFED, each market development center is responsible for developing the export products which meet the market necessities. In this, overlapping efforts among market centers will become inevitable and this will make it more difficult for NAFED to obtain the cooperation of each industry.

vii. Tax incentives for indirect export, drawback system of VAT on exported goods and other taxes and charges

Regarding export competitiveness, manufacturing cost is obviously one of the most vital factors. All possible efforts to reduce costs have to be made in-house by exporters and, at the same time, the governmental policies and schemes have to be geared to cooperate with them.

There are two principal forms of export: direct export and indirect export. When a certain vendor manufactures and sells products (materials, parts or components) to a customer and the customer manufactures its own products using the vendor's

products and exports the final goods, the products of the vendor should be deemed as export products as well. Even in this case, Value Added Tax (PPN) is still levied on the vendor's products and therefore the cost of the final products becomes higher.

There are many tax incentive policies applicable to direct exports while, there is almost nothing for indirect exports. VAT exemption would encourage small vendor business and strengthen the export competitiveness of final products.

Many exporters still complain about the drawback system of VAT levied on export products. They complain that it takes too long for the VAT levied on exported goods to be paid back from the Government. The calculation of refunded amount is said to be not clear either.

Terminal handling charge, documentation fee, IPA (Indonesian Port Additional) and VAT on port service are also claimed to be too high. The tax for overseas travelers also makes overseas business trips for export promotion more difficult.

(2) Counter-measures to short term problems

i. Reverse trade fair

To tackle the market problems and to make up for the marketing inability, the foreign buyers should be invited to Indonesia to display the industrial products they want to procure from Indonesia. At the same time, Indonesian manufacturers are also invited to display their products to the foreign buyers for their procurement opportunities.

In this way, a wider range of Indonesian manufacturers of industrial goods may have a chance of sales contacts. They are also able to learn the quality and price levels of industrial products that foreign firms are interested in procuring. It may also serve to upgrade the competitiveness of Indonesian industrial goods by showing the

Indonesian manufacturers what the export quality of the products is and encouraging them to catch up.

ii. Intensive study on export promotion measures

It is urgently needed that complete, integrated and strategic export promotion policies be studied and drawn up. The study should be based on a practical analysis of the strength and weakness of Indonesian products, their competitiveness over competing countries' products, the horizontal division system of production and procurement policies of multi-national companies, etc.

Some target industries should be selected as model sectors and the promotion models be established through the study, which should be applied to other sectors later. Those selections have to be made under inter-ministries' consent and the best possible framework of study should be sought out.

The target industries should include not only the strategic ones but also the export industries in which the immediate growth of exports can be expected.

iii. Recovery of trade finance system

In order to solve trade finance problems, the soundness of Indonesian banks must be restored. For this, the government should take steps toward the recapitalization of banks and the closure of unsound banks

Responding to this need, the Japan International Cooperation Agency (JICA) dispatched in February 1999 an advisory team specializing in trade finance, in order to find real problems, to coordinate various funds to meet the situation and to make a revised scheme of trade finance, if needed and possible.

Any export subsidy scheme or policies targeting limited objects can be the subject of claims from neighboring or related countries under the treatment of WTO.

When trade finance schemes are to be considered, WTO regulations have to be taken into account very carefully.

iv. Utilization of and cooperation with Indonesian Export Training Center (IETC)

IETC has already started adapting the case study and role playing methods and inviting the foreign lecturers with experiences in trade, in order to give more practical training on market requirements and marketing strategy to the participants.

The government needs to provide full support to IETC to widen the opportunities of giving such practical export training. The promotion and early introduction of a nation-wide network of "Distance Learning System," which IETC has just started, will be very vital because many Indonesian exporters are in islands other than Java. At the same time, such practical export educational classes have to be provided more often. The further assistance of international technical cooperation agencies may be needed for strengthening the activities of IETC in those areas.

NAFED should try to enhance the function of IETC so that they could perform the practical special training programs, which would meet the needs of the industry, and dispatch NAFED staff, as well, to those programs. This may make up for the lack of market research and analysis abilities of NAFED staff. The classes should be open to ordinary participants as well.

v. Setting-up of a coordinating section by commodity in NAFED to develop the export commodities

In order to avoid confusion among each market center for establishing plans for certain commodities and to make the promotional efforts of each market center more efficient, a coordinating section responsible for an over-all development plan of export commodities should be set up in NAFED.

vi. Public relations activities of the government

The government should widen and strengthen its PR (public relations) activities about its total commitment to the importance of exports. Appropriate measures of the government to ensure social stability is also urgently needed to ease the doubts of foreign buyers.

vii. Export promotion policies giving the adequate consideration to big enterprises

Under the “People’s Economy” policy, more emphasis seems to be put on the development of SMIs and their exports. However, for fast recovery and the sound growth of the country’s economy, adequate consideration should be given not only on SMIs but also on the traditional export industries, which are in many cases big industries.

viii. Early reshuffles of tax incentive schemes for export

Under the emergent circumstances like today, any possible means to boost exports have to be considered. More tax incentives should be given to exporters to encourage their exports.

It may be better to eliminate PPN on the materials, parts, components or semi-finished products for the final exported goods (PPN on the indirect exports) on the declaration base. There should be a quicker improvement in the tax obstacles mentioned before. Although the complaint about the drawback system was already pointed out in the previous study, no improvement has been made so far.

From the viewpoint of export promotion, the abolishment of Indonesian Port Additional (IPA) and VAT on the port services should be also examined. Reduced corporate tax may be levied on the exporters with certain export records.

3.2.2 Medium and Long Term Problems and Counter-Measures

- (1) The obstacles and problems of Indonesian exports in the medium and long term
 - i. Lack of brand image

Most Indonesian export products are at the low-end of the pricing zone in the international markets so that they have to inevitably face hard competition in terms of price, delivery terms, etc. In order to improve the situation, “Indonesian brands” have to be established with higher quality images.

- ii. Lack of means for regular and enforced marketing activities

To develop exports, one of the most important measures is a positive penetration into the prospective markets. The most effective way to do this is to have the trade specialists stationed in the targeted markets. Considering this, the closure of ITPC was a great loss for the trade promotion activities of Indonesia, and the alternative measures that the government is now taking may not produce the expected results because of their insufficiency.

13 Indonesian Trade Promotion Centers (ITPC) have been closed down in 1998, due to the limitations of the governmental budget. This means that Indonesia now has no specialized export promotion agency in foreign countries. As an alternative, commercial attaches in Indonesian embassies are now in charge of the export promotion activities and, in addition, NAFED opened a display center of Indonesian commodities in Batam Island, which reportedly has brought US\$2 million in contracts by February 1999.

According to an article in a local paper, “Observer,” of March 15, 1999, the establishment of a trading house called “House of Indonesia PTE Ltd.,” which would run marketing points named “House of Indonesia Emporium (HIE),” is now being planned. House of Indonesia will be a joint venture of the Indonesian

Chamber of Commerce and Industry (Kadin) and local private companies in the countries where HIE will operate.

HIE would function as a promotion and distribution center of Indonesian products marketed abroad. In HIE's programs, Kadin plans to unite the activities of ITPC, Indonesian Trade Distribution Center (ITDC), Emporium and Trade, Tourism and Investment (ITT). HIE would also hold double functions, as both profit and non-profit oriented. Non-profit activities are said to include giving information on overseas potential markets, competitors, and qualification of products sought by the overseas markets including the price, and other information needed by the Indonesian business community.

The first HIE would be opened in Johannesburg, South Africa and Amman, Jordan, followed by Los Angeles, Istanbul and Rotterdam. This project is to be purely a private initiative and NAFED is said only to play a facilitator role, encouraging, supporting and always helping whenever needed.

Such trade promotion activities by private companies as described above are naturally very effective ways to restore the direct access to the market countries. But in this case, securing the profitability of such a company will be difficult. It will not be easy for HIE to earn enough funds to cover their activities, since they include a considerable volume of non-profit activities as mentioned above.

Another problem would be whether HIE could be profitable when they are supposed to deal with not only big volume business but also small business of Indonesian SMI products. In any business, the work volume would be more or less the same. If they have to deal with a large number of small-sized export businesses, it would be difficult to secure their profitability.

iii. Heavy reliance on imported materials

The trade finance problem mentioned above is very vital for Indonesian exports

because almost all export industries in the manufacturing sector depend heavily on imported materials. For example, the country produces only SS, an ordinary steel iron, for machining. In textile industries, the raw materials for a part of synthetic fibers, cotton, and other auxiliary chemicals are imported. A typical export-oriented industry, footwear, imports 65% of the materials.

This is why the shortage of hard currencies and the difficulty of opening L/C to import materials causes foreign buyers to have fears about the delayed delivery and ends up causing the cancellation of many export contracts.

Heavy dependence on imported materials also pushes up the manufacturing cost of export goods. Most Indonesian imports are made through sea routes and, because of the distance from major suppliers of imported materials, the sea freight usually costs much more than that of Indonesia's competitors.

Thus, heavy reliance on imported materials reduces Indonesia's international competitiveness considerably and creates the vulnerability of Indonesian export industries, although it has now the advantage of lower labor costs compared to its competitors such as China or Thailand.

iv. Service range of NAFED

NAFED provides various trade supporting services. Sponsoring trade fairs and export forums, providing market information to Indonesian exporters, renting trade fair space to participating companies, forming periodic trade missions to foreign markets, introducing foreign buyers to Indonesian companies, publishing exporters' catalogs and PR materials and opening home pages on the Internet are among their activities.

However, NAFED activities as a database source of such export market information as buyers' names, trade practices and market requirements in the export markets, etc., and as a market research executor are not sufficient enough.

v. Hard competition among Indonesian exporters

Although Indonesian exporters are now in a stronger position in terms of manufacturing cost, which was brought down due to the decline of its currency value compared to their competitors in China or Thailand, they are still not able to enjoy comfortable business. World demand is sluggish and the competition among Indonesian exporters has become harder. This is because Indonesian exports are concentrated in price-sensitive commodities or products and many of them have not established their own brand yet.

vi. Improvement of export procedures and services

The customs clearance procedures and the export application documentation are criticized as being too complicated and not transparent.

Although the EDI system has been introduced as a means of customs clearance, the exporters, who import the materials for their products, are not satisfied yet. The EDI systems have created some confusion and do not provide the smooth and quick customs clearance services they intend. Human judgement still prevails for determining the taxation on imported goods as well.

vii. Export quality and technical level of workers

Many products which are exported from Indonesia are said to be of inferior quality compared to the similar products of competitors in the global market. Contrary to the general understanding, not only the products of small- and medium-scale industries but also many of those of large-scale industries have not reached export quality yet. The biggest reason for this is considered to be that, because of job-hopping by workers, it is very difficult for the exporters to accumulate sufficient technological experience and transfer that experience to other workers in a factory.

Failure to achieve export quality may result in a big loss due to market claims and the buyers' dissatisfaction with the products.

viii. Efficiency of workers

Also pointed out as a very common weakness in Indonesian industries is the low efficiency of laborers. A drop of the value of the Indonesian currency helps a great deal to strengthen export competitiveness by lowering labor cost but the inefficiency of laborers offsets this advantage to some extent.

Most of the industrial sectors in which Indonesian exporters are engaged are very much cost conscious industries, so they can not keep depending only on the low currency value. When the Indonesian currency value rebounds, the difference in labor cost between Indonesia and China or Thailand will quickly become smaller and the competitiveness of the country be lost.

ix. Trade infrastructure

One of Indonesia's vulnerabilities in export is the sea transportation problem. Vessel schedules are not as frequent as needed. This makes it more difficult to meet promised delivery terms and also to make flexible procurement plans of imported materials. High shipping freights are another vulnerability of Indonesia.

(2) Counter-measures to medium and long term problems

i. Building up Indonesian brands

In order to establish "Indonesian brands," strategic products have to be chosen, and an integrated export promotion policy has to be consented by various export-related governmental organizations.

Besides the collection of a full range of market information based on preliminary

market research, the most up-to date manufacturing technologies have to be made available, and design and quality control activities have to be improved and encouraged.

In the design field, the capabilities and abilities of the existing design center have to be improved to meet the demands and trends of the target products in the export markets.

Appropriate methods of quality control should also be introduced and applied precisely in the manufacturing process of the target products. Setting-up of a nation-wide rewards system for implementing quality control may be one way to encourage the manufacturers.

The most important is to create a successful model of the manufacture of export products with a high Indonesian brand image and more added value, and present it to other exporters in different fields. Only in this way will it become possible to realize the export quality of Indonesian products, ease the hard competition among Indonesian exporters at low-end pricing zones, and improve the efficiency of Indonesian laborers.

ii. Expansion of export promotion activities

Re-opening of ITPC

To ensure the direct, regular and enforced marketing activities in the export market countries, the best way would be to reopen ITPC in the following manner.

- Emphasizing not only the display of the products but also trade mediation activities
- Setting the work quota for trade mediation activities by the number of projects or the amount materialized (The responsibility for fulfilling the quota shall be shared by the head of each market center in NAFED headquarters and the head of each ITPC.)
- Putting more emphasis on the products of supporting industries

- Being equipped with a full range of information on Indonesian exporters
- Executing the preliminary market research of Indonesian products on a contract basis with Indonesian manufacturers
- Functioning as collection centers of over-all and integrated market information and feeding back the information for updating the databases of NAFED
- Being responsible for studying the market requirements and responding to inquiries about them

Roving Trade Fairs

Roving trade fairs using a ship may be considered as a means of enforcing the presence of Indonesian products and securing direct access to markets. By using a ship, a greater variety of products such as even very large or heavy products can be transported easily and shown to the possible buyers in the markets. A ship can also carry a large staff so that practical trade training can be given both to the government officers and the employees of the private sector en route. In addition, the staff members would have chances to practice the knowledge they have learned when they arrive at their destination. The financial burden may be lightened if the roving trade fairs are held jointly with other countries such as members of ASEAN.

iii. Strengthening of NAFED

It is very vital to strengthen NAFED as a center of implementation of full-scale export promotion policies, strategies and practices.

NAFED should have a full range of market information including market requirements, as NAFED is the only public trade promotion organization in the country and there are not many trading houses that can supply the necessary market information. It is expected to provide trade mediation services by supplying foreign buyers with a full range of information on Indonesian exporters. It also should provide small scale exporters with the market research services on a contract basis at a reduced costs. In order to carry out those missions, it needs to have well-trained staff with practical experience in market analysis and marketing research.

Privatization of NAFED

Privatization of NAFED and making it a trading house is also a realistic idea for the middle- or long- term. The biggest problem here will be how to cover the initial operating cost before the organization can become profitable. Since a new trading house would have the mission of increasing the export of SMI products, which are expected to be cheaper in price and lower in quantity, government subsidization would be inevitable. It may be practical for the government to become the major shareholder at the initial stage and reduce its share gradually as the business picks up. During the initial stage, the government should subsidize the basic expenses and the company should cover the incremental expenses.

iv. Setting up of quality and design appraisal bodies

In order to attain export quality and to establish “ Indonesian brands,” setting up an organization to appraise the quality and design of Indonesian export products is advisable. It does not have to be compulsory but it might be sufficient to be a voluntary appraisal system. Any exporter, wishing to upgrade its product images in the export market, could come to this organization and ask for appraisal of the quality and design of its products.

An organization has to have top quality engineers, designers, teachers or professors for appraisal, those who have the ability to judge the level of product quality and design on a fair base so that the appraisal result will be convincing. The government should support such an organization and be responsible for providing worldwide publicity of this system especially to overseas buyers.

v. Establishing a one-stop export service station

To enforce the export assistance functions, it may be useful to set up a one-stop export service center, where all the necessary functions for export activities are

available and the exporters and the buyers could meet and do business on the spot. As the core of the service center, it should be equipped with the most up-to-date international telecommunication facilities including the Internet.

The functions to be installed and the companies or government organizations to be invited to participate in the center are as follows.

Functions:

- Telecommunication services including the internet
- Regular display rooms of Indonesian export products and sample products that the foreign buyers want to procure
- Periodic trade fairs
- Governmental export assistance services
- Consulting services for trade practices, export promotion, financing, quality control, work efficiency, etc.
- Market research services
- Database function and library services on export market information, buyers information, Information on Indonesian exporters
- Quality testing, inspection or assurance
- Designing services for both commercial designs, including PR activities, and industrial designs
- Transportation services such as freight forwarding, business trips, or packing
- Interpretation services including both verbal services and document translation
- Trade financing services
- Trade negotiation support services with negotiation rooms
- Secretarial services
- Seminar rooms
- Banquet hall and dining facilities

Organizations and Companies :

- NAFED
- MOIT

- Ministry of Finance (BEACUKAI)
- Ministry of Transport (Port Authority)
- Trade fair organizers
- Exporters
- Importers
- Foreign buying offices
- Representatives or agents of foreign manufacturers
- Foreign trade promotional bodies
- Quality inspection or assurance organizations
- Research companies: Marketing and Credit
- Banks
- Freight forwarders
- Design companies and PR agents
- Language service companies
- Printing companies
- Branch offices and classrooms of colleges or schools: Business school, design school, etc.
- Network service companies

Location :

The effective use of such premises as Jakarta International Trade Fairs for the above purpose should be examined.

vi. Improvement of export procedure and services

Customs clearance procedures and export application documentation must be more simplified. Also, the regulations on cargo handling have to be made clearer. On top of this, the related handling charges including VAT on port services have to be eliminated or reduced.

vii. Encouraging the activities of foreign trade companies

The export sales activities of foreign trading houses were liberalized. The encouragement of their activities is very vital for promoting and improving the international trade of Indonesia. Many of them already have the established marketing networks in major countries, as well as marketing experience and know-how. For examining and drawing up export promotion strategies, cooperation with them is recommendable.

viii. Promotion of local shipping companies

Because expensive freight is a consequence of the distance from the destination, there is not much that can be done about this problem. If Indonesia could build competitive shipping companies of its own by utilizing its relatively lower cost of manpower, it might be a great help for the country's export capability.

ix. Improvement of incentives on indirect export

The eliminating of the Value Added Tax (PPN) on materials, parts and components manufactured by Indonesian domestic manufacturers and sold to export manufacturers were requested by SMIs. Even if it is realized, they must go through a long and complicated process to handle the application for tax exemption. The computerization of application procedures may be the only answer for quicker processing. It may be useful as well in case some measures are taken to improve the drawback system of PPN on the exported goods.

CHAPTER IV. PRESENT SITUATION OF THE PARTS AND COMPONENTS INDUSTRY IN INDONESIA

1. MACHINERY PARTS AND COMPONENTS INDUSTRY

1.1. PRESENT SITUATION OF THE MACHINERY INDUSTRY

1.1.1 Situation Regarding the Economic Crisis

The machinery industry in Indonesia is underdeveloped, as may be inferred from the fact that gross production in the industry in 1997 amounted to no more than US\$1,185 million (approximately 144.6 billion yen; assuming the exchange rate in 1997 of US\$1 = 122 Yen). Of this gross production, parts and components production accounted for US\$370 million, roughly equivalent to one-third of the total. Concerning the agricultural machinery sector, on which the Indonesia government of Indonesia places high priority, production was very small at just US\$29 million (3.5billion yen), accounting for a mere 2.5% of production in the machinery industry as a whole. In contrast, according to the Ministry of Industry and Trade, imports of machinery in 1997 amounted to US\$9.6 billion (approximately 1,171 billion yen). Of this, imports of agricultural machinery accounted for US\$0.8 billion (approximately 97 billion yen).

The economic crisis that occurred from the second half of 1997 had a major impact on all areas of the economy including the machinery industry. According to the Ministry of Industry and Trade, gross production in the machinery industry in 1998 was estimated as US\$670 million (approximately 86.4 billion yen; assuming the exchange rate in 1998 of US\$1 = 129 Yen), representing a decline to 44% of the previous year's value in US Dollar terms. The agricultural machinery industry, too, was no exception to this. Despite the fact that production of agricultural machinery in 1997 was already 40% lower than the peak

production of US\$47 million in 1996, it fell by a further 30% to US\$20 million (approximately 2,600 million yen) in 1998.

On a company to company basis, some companies have maintained steady demand and production levels because they manufacture repair parts and components. However, concerning the overall situation, due to the rapid falloff in demand, the overwhelming majority of companies are just managing to sustain operations through reducing work forces, cutting costs, temporarily suspending production, and so on. Among foreign affiliated companies, there are some which have increased exports through receiving support from their parent companies. However, due to the low international competitiveness of Indonesian products, such companies are still few in number.

In the agricultural machinery sector, although there is a strong need for mechanization, this is not being translated into actual demand. Many companies have pointed out 1) low income level of farmers, 2) small size of cultivated land due to a preponderance of small-scale farming, and 3) underdevelopment of farm roads, as factors impeding the advance of mechanization.

These companies stated a desire to see policies designed to promote the joint purchase and joint use of agricultural machinery, and policies for advancing infrastructure development in rural villages. Moreover, some foreign affiliated companies stated that, due to restrictions on the introduction of foreign capital to marketing and distribution areas, little progress is being made in the development of agricultural machinery suited to the local needs.

Furthermore, companies producing pumps and diesel engines, which occupy a relatively large weight within the machinery industry, pointed to intense competition with cheap Chinese products. Through developing products suited to local needs and raising the quality and price competitiveness of cast parts and components, which are the major parts and

components for the machinery sector, it is desirable for such companies to first raise competitiveness in relation to imports.

Concerning foreign affiliated machinery manufacturing and retailing in 1997, business was good in the first half of the year in the areas of plant, transportation machinery and construction machinery. However, in the second half, due to the postponement of government projects, unwillingness to carry out equipment investment and other effects caused by depreciation of the rupiah, there was a sudden fall in orders. Having said that, as a result of special demand conditions brought about by the need for drought countermeasures, the demand for pumps remained steady throughout 1997, and the demand for agricultural machinery was also relatively stable.

Concerning foreign affiliated general machinery manufacturing in 1998, as a result of the domestic economic recession, domestic production and sales fell by between 30-70%. However, because of price increases brought about by depreciation of the rupiah, reverse exports to parent companies, and implementation of parts processing, etc., there are some companies which enjoyed increased revenue in rupiah terms. More companies are shifting sales from the domestic market to overseas markets. Since there is little prospect for recovery of the domestic economy and it is forecast that production will fall by 50-70% in the coming years, some companies are resorting to employee layoffs in an effort to cut costs.

1.1.2 Situation of the Industries Related to the Machinery Industry

The situation of the major user industries of machinery is as follows.

i. Textile Industry

As a result of the growing fashion consciousness that accompanied the increase in income in urban areas, clothes consumption had increased in terms of both quantity and quality. However, due to the economic recession, it is unlikely that sales will perform well (both quantitatively and qualitatively) in the immediate future.

Leading companies that possess cost and quality competitiveness and financial strength have grown stronger in the field of exporting and, providing that the political situation settles down, it is anticipated that plant investment will recover and the textile exports will grow even more.

ii. Agriculture

Indonesia has basically maintained self-sufficiency with respect to rice, which is the staple foodstuff of the Indonesian people. However, in 1997, following a drought of unprecedented proportions and the currency crisis that swept through the country, large quantities of rice had to be imported.

Estate crops not only provide an important source of cash income for the Indonesian people, but exports of these crops play a major role in acquiring foreign currency. Production volumes of important products in 1996 were as follows: 250,000 tons of cacao, 3,680,000 tons of palm oil, 1,510,000 tons of natural rubber, and so on. As a result of the rapid depreciation of the rupiah triggered by the currency crisis of 1997, the rupiah-based income of palm and cacao farmers, etc., increased suddenly and their business environment improved dramatically.

iii. Iron and Steel Industry

The merits of exporting are rather small due to the very high ratio (60-70%) of foreign currency-based production costs such as those of raw materials (iron ore, iron nitrate, gas supplied by Pertamina). However, the industry is aiming to take advantage of the depreciated rupiah and is revising its sales policy with a view to raising the export share from 20% to 60%. With the domestic market almost in a state of ruin, the only way the industry can overcome the current crisis is to sustain operations through exporting at low prices and wait for the domestic market to recover while advancing restructuring.

iv. Construction Industry

As a result of the currency crisis that swept through Asia from July 1997, the value of the Indonesian rupiah slumped, at one point in January 1998 falling to less than one-fifth its previous year's value, and it has continued to fluctuate wildly since then. This had a grave impact on the construction market and a whole series of government and private sector projects have either been suspended, postponed or reduced in scale. It is forecast that a fair amount of time will be required for the Indonesian economy to recover and the immediate future will be an extremely difficult period for the construction industry.

1.1.3 Trends in Domestic Production of Machinery Industry

The value of manufacturing in the overall machinery parts and components industry in 1996 was US\$1,435 million. This represents an increase of 11% compared to 1995. However, growth rates started to fall from July 1997, and in 1998 the value plunged to US\$665 million, down 44% from the previous year.

The largest subsector in the machinery industry in 1998 is the machinery components sector, accounting for a share of 32%. This is followed by the steel construction sector with a share of 27%, the fabricated machinery sector, 18%, and then the electronic machinery sector, 14%. These four subsectors account for 91% of production in the overall machinery parts and components industry.

Table 4-1-1 Production Value of Machinery Industry by Type of Industry

Unit: Thousand US\$

No.	Sub-Category of Machinery Industry	1995	1996	1997	1998	
						%
1	Fabricated Machinery Industry	279,652	340,394	198,579	117,624	18
2	Agricultural Machinery Industry	46,114	47,198	29,172	20,168	3
3	Electronic Machinery Industry	234,206	264,505	181,507	96,350	14
4	Machine Tools Industry	12,033	11,383	7,558	7,555	1
5	Steel Construction Industry	272,260	285,317	251,588	178,318	27
6	Construction Machine Industry	9,253	9,010	6,531	5,498	1
7	Component Industry	398,928	417,625	370,345	214,012	32
8	Engineering Industry	43,291	59,651	54,205	25,610	4
9	Office & Household Furniture Industry	79,134	- *	- *	- *	- *
Total (Annual Growth Rate)		1,374,871	1,425,083 (4%)	1,184,862 (-17%)	665,135 (-44%)	100

Note : Sources : Activity Report 1997 and Data for Activity Report 1998 of MOIT

* From 1996 onward, the Office & Household Furniture Ind. is managed by the Directorate of Metal Industry

Table 4-1-2 Performance of Machinery Industry by Type of Product

Unit: Thousand US\$

Product		No. of Companies	Capacity/ Year	Production Volume		Production Value		Value Added		
				Unit	1997	1998	1997	1998	1997	1998
I. Fabricated Machinery Industry										
1	Sugar Processing Machine	4	11,000	Ton	6,356	1,271	3,810	3,596	1,835	1,079
2	Oil Palm Processing Machine	44	11,000	Ton	5,484	1,097	6,333	3,420	1,895	1,026
3	Plastic Machine	8	200	Ton	40	4	176	83	87	25
4	Textile Mill Machine	8	75,000	Ton	187	19	138	66	67	20
5	Tea Processing Machine	5	2,500	Ton	1,278	256	982	927	526	278
6	Rubber Processing Machine	7	2,000	Ton	1,897	219	121	113	64	34
7	Coffee Processing Machine	9	1,500	Ton	434	87	552	521	274	156
8	Wood Processing Machine	8	2,000	Ton	660	132	532	502	279	151
9	Diesel up to 25 KW	7	197,000	Unit	18,500	1,850	24,228	11,437	7,753	3,431
10	Diesel 25 – 375 KW	6	24,500	Unit	440	0	9,607	0	2,505	0
11	Small Compressor	8	7,500	Unit	7,520	1,880	14,285	16,858	6,100	5,058
12	Boiler < 5 ton steam	9	750	Unit	300	30	4,110	1,940	2,010	582
13	Boiler > 5 ton steam	14	400	Unit	50	5	7,744	3,657	5,422	1,097
14	P.Vessel, Heat Exchanger, Tank	33	30,000	Unit	11,476	3,443	13,914	19,704	7,274	5,911
15	Sewing Machine	2	150,000	Unit	100,000	10,000	816	385	256	116
16	Cooling Machine	8	80,000	Unit	60,000	15,000	27,457	32,403	9,244	9,721
17	Wellhood, Christmas Tree, Valve	6	25,000	Unit	5,500	2,200	2,200	4,155	700	1,246
SUB TOTAL I		186	620,350		220,122	37,493	117,007	99,771	46,294	29,931
II. Machine Tools Industry										
1	Lathe	8	1,800	Unit	-	0	0	0	0	0
2	Desk Drilling Machine	6	5,000	Unit	150	0	12	0	1	0
3	Press Machine	11	2,000	Unit	50	0	106	0	16	0
4	Plain Grinder Machine	4	1,500	Unit	150	0	52	0	6	0
5	Cutting Machine	4	850	Unit	80	4	55	7	14	3
6	Saw Machine / Chainsaw	2	200	Unit	150	8	17	3	3	1
7	Plate Bending Machine	3	850	Unit	200	10	100	13	15	5
8	Roll Machine	2	700	Unit	75	4	65	8	9	3
9	Dies, Mold, Jig & Fixture	17	6,600	Ton	3,000	900	2,585	1,965	1,553	786
SUB TOTAL II		57	19,500		3,855	926	2,992	1,995	1,618	798
III Agricultural Machinery Industry										
1	Hand Tractor	11	12,000	Unit	5,550	1,110	4,303	4,060	2,520	1,218
2	Mini Tractor	2	3,500	Unit	0	0	0	0	0	0
3	Pump	51	110,000	Unit	35,000	7,000	6,078	5,735	1,877	1,721
4	Rice Milling	9	2,500	Unit	250	50	373	377	181	113
5	Huller	11	5,500	Unit	2,200	440	222	209	289	63
6	Thresher	12	6,000	Unit	1,950	390	360	340	146	102
7	Polisher	7	2,500	Unit	500	100	177	168	53	50
8	Hand Sprayer	2	1,500,000	Unit	600,000	120,000	10,310	9,729	3,093	2,919
SUB TOTAL III		105	1,642,000		645,450	129,090	21,823	20,619	8,160	6,186

Source: Activity Report 1998, MOIT & JICA Study Team

Table 4-1-2 Manufacturing Performance by Product (Continued)

Unit: Thousand

Product	No. of Companies	Capacity/Year	Unit	Production Volume		Production Value		Value Added		
				1997	1998	1997	1998	1997	1998	
IV. Electronic Machinery Industry										
1	Generator	14	40,000	Unit	6,000	1,200	4,784	4,523	3,127	1,357
2	Generator Set	13	10,500	Unit	850	170	4,702	4,446	3,075	1,334
3	Distribution Transformer	8	55,000	Unit	25,000	3,750	24,177	17,145	15,808	5,143
4	Power Transformer	5	150	Unit	60	9	1,168	828	764	249
5	Other Transformer	7	100,000	Unit	45,000	9,000	276	261	173	78
6	Electric Panel/Switch Gear	27	400,000	Unit	14,800	1,480	12,635	5,973	5,949	1,792
7	KWH Meter	6	5,600,000	Unit	500	50	15,467	7,312	3,011	2,194
8	Electric Motor	13	350,000	Unit	60,000	12,000	3,960	3,744	2,649	1,123
9	Welding Generator	2	13,500	Unit	1,500	225	1,362	966	713	290
10	Mini Circuit Breaker	4	7,600,000	Unit	1,500,000	150,000	1,727	817	373	245
11	Switches	5	150,000	Unit	4,227	423	3,485	1,648	1,258	494
12	Cable Shoes/Cable Plug	1	500,000	Unit	350,000	35,000	63	30	43	9
13	Fuse	2	400,000	Unit	240,000	24,000	858	406	450	122
14	Cut Out	2	820,000	Unit	492,000	49,200	58	27	34	8
15	Lighting Arrester	4	450,000	Unit	87,500	8,750	912	431	546	129
16	Load Break Switch	1	1,500	Unit	900	90	599	283	238	85
17	Circuit Breaker	5	12,000	Unit	9,600	960	737	348	462	105
19	Ceramic Insulator	11	6,500,000	Unit	500,000	100,000	9,099	8,603	2,391	2,581
20	Electric Water Pump	8	700,000	Unit	525,000	52,500	14,228	6,726	4,743	2,018
SUB TOTAL IV		138	23,702,650		3,862,937	448,807	296,079	64,517	45,809	19,355
V Construction Machine										
1	Stone Crusher	12	650	Unit	50	5	869	861	234	258
2	Molen Concrete	17	5,000	Unit	1,000	100	435	431	217	129
3	Asphalt Mixing Plant	4	90	Unit	20	2	325	325	150	97
4	Plate Compactor	3	350	Unit	100	10	102	103	50	31
5	Asphalt Sprayer	3	600	Unit	100	10	634	628	293	188
6	Crane	11	500	Unit	75	8	1,095	1,084	516	325
7	Asphalt Finisher	3	400	Unit	25	3	365	361	171	108
SUB TOTAL V		53	7,590		1,370	138	3,825	3,792	1,633	1,138
VI	Steel Construction Industry	30	480,000	Ton	175,000	26,250	251,588	178,256	150,953	53,477
VII	Component Industry	10	45,000	Ton	600	150	386,397	213,974	123,744	85,589
VIII	Other Industries		873,000	Ton	525,000	131,250	252,112	56,536	50,422	16,961
IX	Engineering Industry	30	15,000,000	Mhr	6,000,000	600,000	54,201	25,275	35,082	7,582
Total		609	42,390,090		11,434,334	1,374,104	1,190,242	664,736	463,714	221,018

Source: Activity Report 1998, MOIT & JICA Study Team

1.1.4 Export and Import Trends

(1) Export Trend

Total exports in the machinery parts and components industry amounted to US\$722 million in 1996, representing a sharp increase of 158% over the US\$445 million of 1995. In the wake of the economic crisis that started in July 1997, however, the Ministry of Industry and Trade estimates that exports in 1998 will revert back to around US\$700 million, roughly the same level as in 1996. According to the annual report of the Ministry of Industry and Trade, the reason for this is that imports are still relied on to provide raw materials for the machinery parts and components industry in Indonesia.

Typical exports which increased in 1997 include structures (steel structures), iron pressure tanks, plant machinery and tools, sewing machines, boilers, transformers, electric motors, circuit breakers, etc. The main export destinations are Singapore, Japan, Malaysia, the United States, Taiwan, Germany, Hong Kong, Korea and Australia.

Table 4-1-3 Trend of Machinery Exports

Unit: Thousand US\$

No.	Commodity Group	1995	1996	1997	1998 (Forecast)
1	Fabricated Mach.	127,252	209,572	201,641	233,683
2	Agricultural Mach.	1,656	2,891	5,052	2,796
3	Electronic Mach.	102,202	166,212	155,723	121,288
4	Machine Tools	942	4,336	2,347	3,790
5	Steel Construction	47,067	72,266	152,671	27,285
6	Construction Mach.	91,622	145	23,392	16,348
7	Component	74,386	122,853	165,634	294,810
8	Engineering Industry	N.A.	N.A.	N.A.	N.A.
TOTAL		445,127	722,662	706,459	700,000

Source: PusdataData, MOIT

The exports by the machinery industry to Japan are as follows.

Table 4-1-4 Machinery Exports to Japan

Unit: Million US\$

Year	Value
1994	291
1995	475
1996	804
1997	694

Source: JETRO, BDC System

(2) Import Trends

Concerning import trends in the machinery parts and components industry in 1996, there was great activity in the areas of construction, infrastructure and industry as a result of the rapid expansion of domestic economic activity. Since the local machinery parts and components industry was unable to satisfy market demand, the value of imports increased every year. Major imported items were sewing machines, machine tools, generators, machinery components, pumps (stainless steel, alloy steel), assembly equipment for chemical plants, water cocks, AC, pumps, raw materials, and other manufacturing equipment. The major exporters to Indonesia were Singapore, Japan, Germany, Korea, Taiwan, China, the United States and the Netherlands.

In line with the slump in domestic production activity that occurred in the wake of the economic crisis of July 1997, imports of machinery parts and components fell in the same way as exports.

Table 4-1-5 Trend of Machinery Imports

Unit: Thousand US\$

No.	Commodity Group	1995	1996	1997	1998 (Forecast)
1	Fabricated Mach.	3,735,702	4,444,366	4,489,604	2,317,267
2	Agricultural Mach.	47,501	47,584	83,750	10,562
3	Electronic Mach.	827,936	1,018,302	970,093	502,333
4	Machine Tools	444,607	523,426	487,837	265,099
5	Steel Construction	88,997	104,685	330,317	253,346
6	Construction Mach.	320,032	380,674	632,778	351,369
7	Component	2,518,654	2,997,806	2,582,777	1,300,023
8	Engineering Industry	N.A.	N.A.	N.A.	N.A.
TOTAL		7,983,429	9,516,845	9,577,156	5,000,000

Source: Pusdata, MOIT

The flow of major imports of the machinery parts and components from Japan was as is shown in the follow Table 4-1-6.

Table 4-1-6 Machinery Imports from Japan

Unit: Million US\$

Item	1994	1995	1996	1997
Machine tools	5,290	6,910	6,180	6,951
General machinery	2,618	3,467	3,149	3,390
Engines and turbines	879	1,216	928	1,027
Construction and mining machinery	196	231	206	201
Metalworking machine tools	138	240	208	222
Industrial machinery	617	786	721	647
Textile machinery	391	374	220	281
Office equipment	18	47	85	109
Machinery parts and components	267	344	371	458

Source: JETRO, BDC System

(3) Level of Localization

According to the 1998 annual activity report of the Directorate of Machine Engineering Industry, Ministry of Industry and Trade, the localization levels of the machinery industry are as follows:

- | | | |
|------|-------------------------|-----------------|
| i. | Machine devices: | From 47% to 91% |
| ii. | Agricultural machinery: | From 85% to 90% |
| iii. | Electronic machinery: | From 20% to 85% |
| iv. | Machine tools: | From 20% to 52% |
| v. | Construction machinery: | From 20% to 85% |

According to the 1997/98 annual report of the Jakarta Japan Club, conditions regarding domestic production and exports in the general machinery industry are as indicated below.

- i. Diesel Engines (excluding Automobile engines)
 - Small diesel engines (less than 50 HP) are almost totally produced domestically, except for some imported engines which require precision cast and forged parts and components.
 - Concerning medium-size diesel engines (50-500 HP), there are some manufacturers which locally produce cast and forged parts and components.
 - Concerning large-size diesel engines (more than 500 HP), there are three manufacturers (two state-owned enterprises and one private company), but these are at the stage of locally conducting machine processing (partially) and also assembly and operation.
 - Products are exported to a small extent.

ii. Generators

- Small capacity generators (less than 500 KVA) are produced locally.
- Concerning medium capacity generators (500-10,000 KVA), although casting and forging materials and insulation materials, etc. are imported, the localization rate of production ranges between 50-90% depending on the capacity of generators concerned.

iii. Pumps

- Not including special steel pumps and other special products, general purpose pumps (50-100) are almost totally produced locally and are even exported to ASEAN countries and the Middle East, etc.
- An attempt is being made to localize production of some special steel parts.

iv. Machine Tools

- Some small-size general purpose machine tools are locally produced using imported drive units, hydraulic machines and control devices, but such production is still in the trial stage.
- Concerning some machine tools operated by CNC control, only CNC control sections are imported and other parts are locally produced. Many machine tools, however, are imported as finished products.
- All specialized machine tools are imported.

v. Agricultural Machinery

- Large tractors are still only assembled locally, however, production of hand tractors is 100% localized and more local manufacturers are emerging in addition to Japanese affiliated companies. General agricultural machinery such as hulling machines, threshers and polishing machines, etc. has traditionally been produced locally.

vi. Haulage Machinery (Fork lifts)

- Imports are still relied on to provide drive units, hydraulic machines and control devices, etc. However, in line with the intensification of price competition and the improvement of industrial standards, the range of localization is steadily expanding from sheet metal structures to batteries, tires, sheets and fenders, etc.
- Some components such as sheet metal structures are also exported.

vii. Construction Machinery (Bulldozers, Excavators, Wheel loaders, etc.)

- Imports are relied on to provide drive units, hydraulic machines and control devices, etc. However, localization is advancing with respect to mainly small sheet metal structures.
- There are some companies which are already conducting the localized production of large sheet metal structures. Concerning cast and forged materials, the issue of heat treatment is the main impediment to future localization.
- The exporting of already localized components is carried out, and there are no imports of finished products except for special cases.
- Concerning excavators, some companies have achieved a local procurement rate as high as 55%.

- Export of Indonesian finished machinery was started in earnest in 1994, and such exports are directed to the neighboring countries of Thailand and Malaysia.

1.1.5 Internal and External Investment in the Machinery Parts and Components Industry

Internal and external investment in the machinery parts and components industry grew steadily in 1995. However, it fell by 4.7% over the previous year in 1996, and in 1997 plummeted by 59.7% in the wake of the economic crisis that started in July that year. In 1998, it further fell by 36.8% compared with 1997.

Table 4-1-7 Trend of Investment by Machinery & Engineering Industry

Year	No. of Company	Non-PMA/PMDN (Million Rp)	PMDN (Million Rp)	PMA (Thousand US\$)	TOTAL (Million Rp)	Growth (%)
1994	82	512,192	288,650	192,515	993,357	30
1995	76	616,998	107,103	193,360	1,161,337	17
1996	72	450,152	198,165	198,641	1,106,191	-4.7
1997	73	156,914	21,759	111,030	445,145	-59.7
1998	18	159,400	50,554	6,714	281,131	-36.8

Note: Source: Dit. IMP & BKPM

Among domestic and foreign investments to the machinery and engineering industry in 1997, 53% of the total was directed to the machinery assembly sector. This was followed by a 17% share to the electronic machinery sector, and a 9% share to the components sector.

Table 4-1-8 Investments by Type of Industry

No.	Product		1995	1996	1997	1998 (Jan - Oct)
1	Fabricated Machinery	Rp Million	83,512	334,516	73,331	102,420
		US\$ Thousand	21,745	76,219	39,605	4,760
2	Agricultural Machinery	Rp Million	4,480	350	-	-
		US\$ Thousand	-	-	6,575	-
3	Electronic Machinery	Rp Million	85,824	23,330	55,691	57,000
		US\$ Thousand	23,323	78,300	34,998	-
4	Machine Tools	Rp Million	4,300	2,500	21,983	-
		US\$ Thousand	4,600	-	-	-
5	Steel Construction	Rp Million	4,824	81,006	15,934	-
		US\$ Thousand	-	-	300	-
6	Construction Machinery	Rp Million	27,732	-	15,934	50,550
		US\$ Thousand	1,000	-	300	1,350
7	Component	Rp Million	91,000	-	-	-
		US\$ Thousand	141,600	40,922	29,551	-
8	Engineering Industry	Rp Million	355,429	800	10	-
		US\$ Thousand	-	2,900	-	-
Total		Rp Million	1,161,337	1,106,191	445,145	449,310

Source: MOIT

Note: Exchange Rate Applied

1995: Rp 2,273 /US\$ 1996: Rp 2,300 /US\$

1997: Rp 2,400 /US\$ 1998: Rp 9,780 /US\$

The main regional spread of the machinery parts and components industry between 1995 and 98 took place in West Java Province and Jakarta City. Main areas of investment outside of Java Island are South Sumatra and Batam Island.

According to the 1998 annual report of the Ministry of Industry and Trade, this regional spread results from disparities in such areas as market size, infrastructure, labor supply capacity, raw materials procurement, components procurement, and ease of distribution.

Table 4-1-9 Location of New Investments

No.	Location	Number of Companies			
		1995	1996	1997	1998
1	DKI Jakarta	17	23	14	5
2	West Java	40	37	49	9
3	Central Java	1	-	1	-
4	East Java	9	8	6	1
5	North/South Sumatra	5	-	2	-
6	South Sulawesi	-	1	-	-
7	Batam Island	4	2	1	2
8	East Kalimantan	-	-	-	1
9	West Nusa Tenggara	-	-	-	-
10	Yogyakarta	-	1	-	-
TOTAL		76	72	73	18

Source: MOIT

The following gives a breakdown of registered members of the Federation of Association of Indonesia Metal Works and Machinery Industries in 1998.

i.	The Agricultural Machinery Association of Indonesia:	
	(Registered nationwide)	17 companies
	(Registered in Western Sumatra)	18 companies
	(Registered in Sulawesi)	21 companies
ii.	The Internal Combustion Engine Manufacturing Industry Association of Indonesia:	13 companies
iii.	The Steel Structure Manufacturing Industry Association of Indonesia:	26 companies
iv.	The Federation of Association of Indonesia Metal Works and Machinery Industries:	61 companies
v.	The Metal Casting Industry Association of Indonesia:	38 companies
vi.	The Industrial Tools Manufacturing Industry Association of Indonesia:	9 companies
vii.	The Construction Machinery Industry Association of Indonesia:	10 companies
viii.	The Pump Industry Association of Indonesia:	8 companies
ix.	The Machinery Industry Association of Indonesia:	25 companies
x.	The Pressure Tank Industry Association of Indonesia:	22 companies
xi.	The Elevator and Escalator Manufacturing and Installation Industry Association of Indonesia:	13 companies
xii.	The Machinery and Instrument Recycling Industry Association of Indonesia:	19 companies
xiii.	The Precision Tool Industry Association of Indonesia:	10 companies

In all there are 310 registered companies, but very few of these are in a position to pay their membership fees. PT. Pindad, the state-owned enterprise which has presiding power, bears a large portion of the operating costs.

1.1.6 Indonesian Industrial Standards (SII)

According to the 1998 activity report of the Directorate of Machine Engineering, Ministry of Industry and Trade, the following industrial standards in the area of the machinery & engineering industry have been prepared:

i. Engineering standards:	137 standards
ii. Machine tool standards:	45 standards
iii. Agricultural machinery standards:	84 standards
iv. Electronic machinery standards:	29 standards
iii. Machinery components standards:	144 standards
iv. Fabricated machinery standards:	79 standards

1.1.7 Present Situation of the Machinery Assembly Industry

Domestic sales fell to almost zero in the wake of the financial crisis of July 1997, and there are some foreign affiliated companies which are burdened with inventories that were previously equivalent to one or two months' production but are now equivalent to two to three years. Generally speaking, companies are striving to survive by carrying out mutual supplementation of parts and materials with overseas production centers in accordance with instructions from head offices. Companies are resorting to the temporary stoppage of plant operations and employees layoffs in an effort to survive.

1.1.8 Present Situation of the Machinery Parts and Components Industry

In the wake of the financial crisis of July 1997, small enterprises have stopped their operation and there are many companies which have not responded to questionnaire surveys conducted by the Ministry of Trade and Industry. The worst possible operating conditions for

companies continued from January through June of 1998. However, at the time of the Study, some machinery parts and components manufacturing companies were receiving increased orders for repairs in line with efforts by machinery customers to reduce costs. Parts and components makers have not invested in production equipment in recent years, and faced with the lack of working capital. They have been operating on their own funds, e.g., past accumulated profits, without borrowing funds from banks due to the high interest rates in Indonesia.

1.1.9 Problems Faced by the Machinery Parts and Components Industry and Future Countermeasures

The machinery parts and components industry was enjoying increased production, exports and additional investment every year up until July 1997. However, following the economic crisis, the prospects for economic recovery are bleak and the industry faces an uncertain future. The following factors are currently acting as major problems for the industry.

Major Findings Identified from the Field Interview Survey

- i. Domestic supply of basic materials is insufficient in terms of both quantity and variety.
- ii. Bureaucratic procedures for importing basic materials and components are time consuming, and import prices are high.
- iii. Both Investment and working capitals are insufficient.
- iv. Bank interest rates are too high.
- v. The domestic market has shrunk due to a stagnated local demand.
- vi. Low level of production activities has led to a reduction in orders.
- vii. The quality of products do not satisfy the standards required by the international market.

- viii. Indonesian machinery parts and components manufacturers can not keep delivery deadlines in exporting their products.
- ix. Companies are unable to flexibly respond to the ever-changing demands of the international market.
- x. Domestic infrastructure is underdeveloped and, in areas outside of Java especially, there are not sufficient supporting industries.
- xi. Levels of investment promotion and information dissemination remain low concerning both the internal and external business world.
- xii. In the machinery parts and components industry, there are still not enough public agencies for introducing business opportunities to investors.
- xiii. Concerning labor supply, there are not enough workers who satisfy certain skill and qualification levels.
- xiv. Local partners of joint ventures still do not possess sufficient specialist know-how.
- xv. There are insufficient incentives for ambitious investors.
- xvi. The relationship between major and large companies and small enterprises is still not established.
- xvii. Many companies have not yet reached optimum levels of manufacturing activity.
- xviii. Levels of skill acquisition among workers are still low.
- xix. Only a few companies are able to carry out research and development.
- xx. Few companies carry out manufacturing activities upon paying sufficient attention to product quality standards.

The machinery parts and components industry still requires support. The support is particularly needed in the areas of improving industrial conditions and developing design and engineering. In order to develop the domestic machinery parts and components industry as quickly as possible, a foundation should be laid to enable new investment into product areas which have so far been beyond the scope of domestic manufacture. For this reason, it is necessary to implement the following kinds of measures.

Major Countermeasures Identified from the Field Interview Survey

- i. Reduce import tariffs for basic materials.
- ii. Encourage investment through exempting value added tax, reducing corporate income tax, rebuilding the re-investment system, providing guarantees for capital investment, promoting depreciation, and so forth.
- iii. Encourage the adoption of technical standards, including the acquisition of the ISO 9000 series (with a view to promoting exports).
- iv. Provide data and information concerning export market of less developed countries. This should also comprise export encouragement programs, etc.
- v. Promote technical exchange between education organizations (universities, etc.) and industry.
- vi. Utilize the technical support facilities of government agencies and universities in order to encourage skill acquisition.
- vii. Establish a low interest rate loan system to enable companies to sustain operations.
- viii. Establish patent rights.
- ix. Establish a low interest loan system for domestic users of manufactured products.
- x. Protect domestic products from unhealthy competition with similar foreign products.

1.2 PRESENT SITUATION OF THE PARTS AND COMPONENTS INDUSTRY

With respect to the present situation of the parts and components industry in Indonesia, the following sections describe the findings of the field interview survey made to representative member companies of the Federation of Associations of Indonesian Metal Works and Machinery Industries.

1.2.1 Number of Metal Works and Machinery Industries Registered

The following gives a breakdown of the registered member companies of the Federation of Associations of Indonesian Metal Works and Machinery Industries in 1998.

Table 4-1-10 Members of Federation of Associations of Indonesian Metalwork and Machinery Industries

Industry	No. of Companies	Industry	No. of Companies
Agricultural machinery	17	Pump	8
Internal combustion engine	13	Plant equipment industry	25
Construction steel industry	26	Boiler and pressure equipment	22
Machine processing	61	Elevator and escalator	13
Casting	38	Copper and aluminum	13
Machine tool	9	Equipment (device) repair	19
Building equipment	10	Precision tool	10

Source: Federation of Associations of Indonesian Metalwork and Machinery Industries

1.2.2 Demand Trends

If the current economic conditions in Indonesia remain unchanged or deteriorate further, there will be no demand for new products. Accordingly, in automobile and shipbuilding-related sectors, it is thought that demand for repairs and overhauls, etc. will increase, leading to

slightly more business for service parts manufacturers and overhaul-related companies. However, demand in industrial machinery-related sectors as a whole will be stagnant and the chances of business recovery be slim.

1.2.3 Domestic Production Trend

Concerning domestic production conditions, all companies are responding to the current economic downturn by reducing work forces by 25-50% and suspending line operations, etc. Japanese affiliated companies are managing to sustain their present operation through carrying out global mutual supplementation with support from their parent companies. Local manufacturers are sustaining operations through diversifying into the production of such products as recycling ship engines and processing four-wheel and two-wheel service parts, etc. On the contrary, among manufacturers of plastic injection molds, there are some companies which are increasing orders from Japanese affiliated companies due to its good reputation, and maintain the number of employees avoiding the effects of economic crisis

During the company visit survey, the followings are pointed out as the major impact of the economic crisis on the machinery parts and components industry.

- i. Production of pumps plummeted from 100,000 units in 1997 to 20,000 units in 1998.
- ii. Boiler production was previously 100 units per year, but has since plummeted by 90%.
- iii. Although the demand for ship engines declined, demand for overhauls increased.
- iv. Production of a gear manufacturer dropped to 0% for automobile-related areas, 20% for agriculture-related areas, and 30% for other sectors.

- v. Since demand for automobile-related products was zero, a manufacturer of large metal sheet for automobiles started to make sheet metal dies for conveyor belt use.
- vi. Manufacturers of barbed wire and galvanized steel sheet reduced production by 50% over the previous year.
- vii. Four textile machinery manufacturers, including their parent company, reduced their combined work force by 25% from 400 to 300.
- viii. A machinery processing manufacturer reduced its work force by 25% from 200 to 150.
- ix. A fabricated gear manufacturer reduced its work force by 35% from 360 to 200.
- iv. A boiler and tea manufacturer reduced its work force by 50% from 900 to 450.

1.2.4 Export and Import Trends

Companies in the industrial machinery industry hardly export at all and are struggling to survive through conducting minor recycling and repair works for domestic customers.

There are some exports by the industrial machinery industry. A second-tier Japanese-affiliated vendor received orders according to the global mutual supplementation scheme, although their overall production was down. A local manufacturer was importing cheap wire (primary product) from Russia and the Ukraine, etc., and refined this into barbed wire for export to Japan.

1.2.5 Trends of Technologies and Quality

Companies in supporting industries are unable to manufacture reliable quality products because they do not possess control systems due to the obsolescence of their equipment and

absence of measuring equipment. Some leading company groups have installed measuring equipment for joint use.

Many leading companies aim to realize a high level of manufacturing through the introduction of such modern machinery as NC and CNC, and CAD/CAM, and the acquisition of such international standards as ISO. However, they can not borrow funds for investments under the current situation. This is the most serious problem in technology upgrading. As a result, they seem to be unable to catch up with the technological level of competitors in Malaysia, Thailand and the Philippines.

The followings are major technological problems pointed by the companies visited by the Study Team during the Study.

- i. Craftmanship could not be developed from large companies. In the future, it will be necessary for Indonesian supporting industries to have a technology transfer from Japanese small and medium enterprises.
- ii. Some companies want to introduce NC and CNC machinery. However, this is not possible at the moment due to the difficulty of raising funds and the shortage of skilled engineers.
- iii. Because the number of die manufacturing engineers is insufficient, the production expansion is not taking place.
- iv. Almost all companies use such standards as DIN and JIS. However, because there are no technical manuals in the Indonesian language, high school graduates working on lines are unable to study and improve their knowledge.
- v. Indonesian students in the top level of engineering fields are unable to improve their knowledge unless they study abroad.

- vi. Since the inspection equipment possessed by supporting industry is limited to such simple equipment as micro gauges, calipers and spirit levels, they are not capable of raising quality levels.

1.2.6 Raw Materials Supply Trend

Companies in the casting sector are able to make a wide range of products from small items to such large items as automobile sheet metal press die sets, but few makers conduct reliable quality assurance.

General steel materials (construction steel) can be procured locally. However, many companies in industrial machinery-related sectors use special steel materials, all of which have to be imported. Injection die materials cannot be procured unless customers supply such materials to the makers. Korean materials are cheaper than those from other countries. However, because the chemical composition quality of such materials is poor, they cannot be used by Japanese affiliated companies.

Concerning resin materials, because these are also all imported, the cost ratio of raw materials is high, making it difficult to fully utilize the benefits of cheap labor costs.

1.2.7 Situation of the Machinery Parts and Components Manufacturers Based on the Results of the Questionnaire Survey

(1) Location of the Target Companies

Table 4-1-11 shows the regional distribution of the 129 machinery parts and components companies that responded to the questionnaire survey. 62 of the companies, or 48% of the total, are located in Jabotabek and West Java, indicating an extremely high degree of

concentration in these areas. A major reason for this is thought to be the fact that many assemblers and thus much of the market for the machinery parts and components industry are concentrated in West Java including Jabotabek.

Table 4-1-11 Regional Distribution of Respondent Companies

Area	No. of Companies
Jabotabek	43
West Java	20
Central Java	48
East Java	9
North Sumatra	6
Batam	1
Other	3
Total	129

Source: Questionnaire Survey by JICA Study Team

(2) Scale of Companies

Table 4-1-12 shows the scale of companies in terms of the size of work force. Only 7 companies have 300 or more employees. 13 companies have between 100-299 employees, 50 companies have between 20-99 employees, and 568 companies employ 19 workers or less. These data show that the machinery parts and components industry is mainly composed of locally based small and very small enterprises.

Table 4-1-12 Respondent Companies by Size of Employees

	No. of Companies
19 Employees or Less	56
20-99 Employees	50
100-299 Employees	13
300 Employees or More	7
Total	126

Source: Questionnaire Survey, JICA Study Team

(3) Impact of the Economic Crisis

a. Impact on Company Business

As is indicated in table 4-1-13, 98 of the 128 companies that responded to the questionnaire survey, or 77% of the total, reported that the impact of the economic crisis on the businesses of machinery parts and components companies was “very serious” or “serious”. Four companies reported “good impact”, however, these seem to be local companies specializing in parts for the after-sales market. It is considered that they have benefited from the fact that customers have switched to repairs instead of replacing parts and components.

Table 4-1-13 Impact of Economic Crisis on Company Business

Unit: No. of Companies

		Very Serious Impact	Serious Impact	Some Impact	No. Impact	Good Impact	No. of Responses
Total		50	48	16	10	4	128
Capital	Domestic	38	43	14	9	4	108
	Foreign Affiliated	12	5	2	1	-	20
Sales	Domestic	37	40	12	9	4	102
	Export	13	8	4	1	-	26
Number of Employees	19 or Less	19	19	7	7	3	55
	20 to 99	19	22	5	3	1	50
	100 to 299	7	3	3	-	-	13
	300 or More	4	3	-	-	-	7

Source: Questionnaire Survey by the Study Team

b. Impact on Domestic Sales

Similarly, as is indicated in Table 4-1-14, 107 out of the 129 companies that responded to the questionnaire survey, or 83.6% of the total, reported that the currency crisis and

economic crisis have had an immense effect on domestic sales, leading to a decline in sales performance. The average rate of decline was found to be 83.6%, which was almost at the same level as the results of the company visit survey.

Table 4-1-14 Impact of Economic Crisis on Domestic Sales

Unit: No. of Companies

		Decreased	No. Change	Increased	No. of Responses
Total		107	12	9	128
Capital	Domestic	89	12	7	108
	Foreign Affiliated	18	-	2	20
Sales	Domestic	86	10	6	102
	Export	21	2	3	26
Number of Employees	19 or Less	44	8	3	55
	20 to 99	43	3	4	50
	100 to 299	11	-	2	13
	300 or More	6	1	-	7

Source: Questionnaire Survey by JICA Study Team

c. Impact on Exports

It is thought that the number of responses concerning exports was small because the machinery parts and components industry has traditionally been based on selling to the domestic market. As is indicated in Table 4-1-15, whereas 12 companies reported that exports have decreased, 13 companies reported an increase in exports. It is thought that these are foreign affiliated companies that are striving to survive through exporting by receiving support from their parent companies abroad.

Table 4-1-15 Impact of Economic Crisis on Exports

Unit: No. of Companies

		Decreased	No Change	Increased	No. of Responses
Total		12	12	13	37
Capital	Domestic	7	4	3	14
	Foreign Affiliated	1	2	8	11
Sales	Domestic	3	-	-	3
	Export	5	6	11	22
Number of Employees	19 or Less	3	-	-	3
	20 to 99	4	1	2	7
	100 to 299	-	3	5	8
	300 or More	-	2	4	6

Source: Questionnaire Survey by JICA Study Team

d. Impact on Company Profits

As is indicated in Table 4-1-16, 96 out of 122 companies, again accounting for 78.7% of all companies surveyed, reported a fall in profits. Concerning the 8 companies that reported an increase in profits, as was made clear in the company visit survey, some companies have secured higher returns from repair work, while other exporting companies have benefited from depreciation in the rupiah.

Table 4-1-16 Impact of Economic Crisis on Company Profits

Unit: No. of Companies

		Decreased	No Change	Increased	No. of Responses
Total		96	18	8	122
Capital	Domestic	81	16	6	103
	Foreign Affiliated	15	2	2	19
Sales	Domestic	78	14	5	97
	Export	18	4	3	25
Number of Employees	19 or Less	41	10	3	54
	20 to 99	38	6	3	47
	100 to 299	8	2	2	12
	300 or More	7	-	-	7

Source: Questionnaire Survey by JICA Study Team

e. Impact on Employment

At the 71 companies which gave a response with respect to employment, as is indicated in Table 4-1-17, the average number of employees has fallen by 42% from 92 before the economic crisis to 53 after the economic crisis. The reduction in employees is not sharp compared with the drastic drop in sales. It is thought that companies are trying to minimize the number of layoffs with a view to the time of recovery in the future, because they are faced with a shortage of skilled workers. This point was also confirmed during the company visit survey.

Table 4-1-17 Reduction in Number of Employees

Unit: No. of Companies

		Number of Employees				No. of Res-ponses	Average Number of Employees (Persons)	
		9 or Less	10 to 49	50 to 99	100 or More			
Total		Before Crisis	7	39	8	17	71	92
		After Crisis	22	33	6	10	71	53
Capital	Domestic	Before Crisis	7	37	7	14	65	84
		After Crisis	22	30	6	7	65	46
	Foreign Affiliated	Before Crisis	0	2	1	3	6	181
		After Crisis	0	3	0	3	6	131
Sales	Domestic	Before Crisis	7	38	8	10	63	67
		After Crisis	21	33	5	4	63	35
	Export	Before Crisis	0	1	1	7	8	290
		After Crisis	1	0	0	6	8	202
Number of Employees	19 or Less	Before Crisis	7	29	0	0	36	17
		After Crisis	22	14	0	0	36	9
	20 to 99	Before Crisis	0	10	8	7	25	73
		After Crisis	0	19	6	0	25	25
	100 to 299	Before Crisis	0	0	0	8	8	310
		After Crisis	0	0	0	8	8	189
	300 or More	Before Crisis	0	0	0	2	2	820
		After Crisis	0	0	0	2	2	440

Source: Questionnaire Survey by JICA Study Team

(4) Countermeasures to Economic Crisis

Concerning countermeasures to the economic crisis, as is indicated in Table 4-1-18, 63% of the responding companies have resorted to employee layoffs, 59% have attempted to develop new domestic markets, and 33% have carried out diversification of products. However, only 24% of companies reported that they have attempted to overcome the crisis by developing new export markets overseas. This is thought to be due to the fact that the companies' products lack international competitiveness as a result of technical deficiencies.

Table 4-1-18 Countermeasures in Response to Economic Crisis

Unite: No. of Companies

		Development of Domestic Markets	Development of Overseas Markets	Product Diversification	Temporary Closing Down	Employee Layoffs	Parent Company Support	Financial Agency Support	Others	Effective Respondents
Total		71	29	40	9	76	24	17	12	120
Capital	Domestic	64	18	36	5	67	12	14	11	100
	Foreign Affiliated	7	11	4	4	9	12	3	1	20
Sales	Domestic	60	12	33	7	66	15	13	11	95
	Export	11	17	7	2	10	9	4	1	25
Number of Employees	19orLess	31	6	19	3	36	9	9	4	48
	20to99	31	8	14	4	27	9	6	6	49
	100to299	5	7	3	1	9	3	-	2	13
	300orMore	3	6	4	1	4	2	2	-	7

Source: Questionnaire Survey, the Study Team

(5) Demand for Funds after the Economic Crisis

a. Demand for Funds

As shown in Table 4-1-19, 68% of the respondent companies need to raise funds. Especially, the demand for funds is higher among domestic companies, 72% of which

need to raise funds. On the contrary, 58% of foreign companies do not find it necessary to raising funds.

Table 4-1-19 Need to Raise Funds after Economic Crisis

Unit: No. of Companies

		Needed	Not Needed	Effective Respondents
Total		86	41	127
Capital	Domestic	78	30	108
	Foreign Affiliated	8	11	19
Sales	Domestic	71	32	103
	Export	15	9	24
Number of Employees	19 or Less	41	15	56
	20 to 99	35	15	50
	100 to 299	8	5	13
	300 or More	1	5	6

Source: Questionnaire Survey by JICA Study Team

b. Demand for Working Capital

After the economic crisis occurred, 67% of the companies which responded need working capital in the amount of less than 5 million Rupiah as shown in Table 4-1-20. The majority of such demand comes from domestic companies. Table 4-1-21 summarizes the use of required working capital. The largest demand is for procurement of materials, second is for salary payment, and third is repayment of loans.

Table 4-1-20 Amount of Required Working Capital

Unit: No. of Companies

		500 Million Rupiah or Less	500 to 999 Million Rupiah	1,000 Million Rupiah or More	Effective Respondents
Total Respondents		53	8	18	79
Capital	Domestic	50	8	13	71
	Foreign Affiliated	3	-	5	8
Sales	Domestic	49	6	11	66
	Export	4	2	7	13
Number of Employees	19 or few	38	2	-	1
	20 to 99	15	5	11	31
	100 to 299	-	1	5	6
	300 or more	-	-	1	1

Source: Questionnaire Survey by JICA Study Team

Table 4-1-21 Use of Working Capital

Unit: No. of Companies

		Buying Materials	Paying Salaries	Covering Deficits	Repaying Loans	Others	Effective Respondents
Total		79	34	16	19	5	83
Capital	Domestic	72	30	13	18	5	75
	Foreign Affiliated	8	4	3	1	-	8
Sales	Domestic	65	29	13	15	5	68
	Export	14	5	3	4	-	15
Number of Employees	19 or Less	40	18	5	3	4	40
	20 to 99	30	13	7	14	1	33
	100 to 299	8	2	3	2	-	8
	300 or More	1	-	-	-	-	1

Source: Questionnaire Survey by JICA Study Team

c. Demand of Investment Funds for Facilities

The need for investment funds for facilities after the economic crisis is shown in Table 4-1-22. The 61% of companies which responded need funds in the amount of less than 5 million rupiah. The majority of these demands are from domestic companies.

Table 4-1-23 summarizes the use of investment funds for facilities. The major purposes are the reinforcement of existing facilities and renewal of machinery.

Table 4-1-22 Amount of Required Investment Facilities Funds

Unit: No. of Companies

		500 Million Rupiah or Less	500 to 999 Million Rupiah	1,000 Million Rupiah or More	Effective Respondents
Total Respondents		38	9	15	62
Capital	Domestic	35	8	13	56
	Foreign Affiliated	3	1	2	6
Sales	Domestic	36	8	11	55
	Export	2	1	7	8
Number of Employees	19 or Less	29	4	-	38
	20 to 99	9	5	11	25
	100 to 299	-	-	4	4
	300 or More	-	-	-	-

Source: Questionnaire Survey by JICA Study Team

Table 4-1-23 Use of Investment Funds for Facilities

Unit: No. of Companies

		Addition to Existing Facilities	Renewal of machinery	Construction of New Factories	R & D Equipment	Others	Effective Respondents
Total Respondents		46	42	13	7	3	64
Capital	Domestic	44	36	12	5	3	58
	Foreign Affiliated	2	6	1	2	-	6
Sales	Domestic	41	34	9	6	3	56
	Export	5	8	4	1	-	8
Number of Employees	19 or Less	28	19	4	2	2	33
	20 to 99	17	19	8	3	-	26
	100 to 299	1	4	4	2	1	5
	300 or More	-	-	-	-	-	-

Source: Questionnaire Survey by JICA Study Team

1.3 PROBLEMS AND NECESSARY IMPROVEMENT MEASURES IN THE MACHINERY PARTS AND COMPONENTS INDUSTRY

1.3.1 Marketing

Since the sales activities of almost all leading companies are conducted by the company owners themselves, and there are many companies which have no salesmen, they pay little attention to market development and find it difficult to diversify into new product lines.

The machinery parts and components manufacturers interviewed during the Study carry out the following sales promotion measures:

- i. A company has exhibited its products at the international trade fair in Hanover and received orders there.
- ii. A company aims to achieve customer satisfaction based on the philosophy summed up in the slogan, "The fundamental premise is cheap, high quality manufacturing."
- iii. A company receives many orders from Japanese affiliated companies and these are increasing because its reputation for making high quality products has spread by word of mouth among Japanese affiliates.
- vi. A company tries to increase orders by raising operating rates and reducing prices.

The following were pointed out by the companies visited as problems of marketing.

- i. Almost all manufacturers conduct direct selling and find it difficult to expand sales activities.
- ii. It is difficult for agricultural machinery manufacturers to make sales forecast and a production plan because dealers do not make orders based on their sales forecast but make orders only when they receive orders from customers.

- iii. Due to the narrowness of farm roads, the expansion of demand for two-wheel cultivators and haulage machinery is unlikely.

For the expansion of agricultural equipment sales, it would be effective to give distributorship rights to foreign affiliated manufacturers. If they can sell by themselves, they will actively develop agricultural equipment suited to cultivation conditions in Indonesia based on their marketing research and they will order attachment production from local subcontractors. At the same time, for the expansion of the demand for two-wheel cultivators and yield haulage machinery, it is necessary to develop farm roads in order that they can be used in the fields.

1.3.2 Financing

Companies are unable to obtain loans unless they have guarantees from a parent company, but parent companies do not provide guarantees in the present economic situation. They can purchase raw materials only by cash in advance. Thus, they have to take measures as follows:

- i. To borrow from family groups and reduce borrowing from banks.
- ii. To manage on accumulated internal funds.
- iii. To use initial payment money upon receipt of an order receipt as working capital.

1.3.3 Production Management

Foreign affiliated companies and their subcontractors have established a basic and acceptable level of management setup. At local companies, production management systems do not exist except for completion date control. However, local companies which have foreign advisors are improving their production management level.

1.3.4 Quality Control

Many local manufacturers do not possess measuring equipment and have not established quality control setups. Local companies which export or sell to foreign affiliated companies must establish a quality control system because, without it, they can not continue to receive orders.

1.3.5 Raw Materials Procurement

Companies face high costs because almost all raw materials are imported. Because cheap local raw materials, in particular special steel materials, cannot be used due to poor quality, companies rely on imports from Japan, Europe and America and thus face problems in terms of both delivery and cost. It would be desirable for the domestic production of high quality and low cost special steel materials to become possible in the near future. Local procurement of resins is also difficult.

1.3.6 Product Development

At present in Indonesia, it is difficult for companies to carry out product development. Local companies do not possess the human resources, equipment, devices and measuring equipment, etc., needed to perform product development. Market research to identify the kinds of products to be developed is also difficult for local manufacturers.

It is important for them to start with the preparation of necessary personnel, and then proceed to the introduction of new facilities and equipment. Therefore, it is necessary to expand education and training institutions to develop R&D personnel.

1.3.7 Design

Indonesian companies have few designers. People involved in design must actively come up with new development ideas and must be capable of conducting repeated trial and error from the fabrication of prototypes through to testing and confirmation before completing products. It is not possible for them to carry out design without a basic understanding of manufacturing theory and industrial standards. Therefore, it is necessary to expand education and training institutions to develop capable designers.

1.3.8 Reexamination of Priority Parts and Components

(1) Evaluation of the Machinery Industry

The evaluation of the Indonesian machinery industry by sub-group from the viewpoint of market potential, entry barriers, and current competitiveness is shown in Table 4-1-24.

Based on the comparison of sub-groups in terms of competitiveness, market attractiveness, and localization needs, the priority for development should be given to agricultural machinery, metal works machinery, food processing machinery, metal cutting tools, and dies.

The level of the machinery parts and components industry in Indonesia is currently lower than that of other ASEAN countries. The immediate recovery of the market can not be expected because the economic recovery will still take several years. However, it is necessary to promote the development of internationally competitive machinery parts from the long-term perspective, because the growth period will come after the economic recovery.

Table 4-1-28 Comparison of Priority Level by Product Area in the Industrial Machinery Sector

	Economic Merit			Technical Impact	Ease of Market Entry		International Competitiveness			
	Locali- zation Situation	Market Size	Market Growth Potential	Techno- logical Syner- gistic Effect	Ease of Introduc- ing Tech- nology	Produc- tion and Invest- ment Scale	Domestic Related Technol- ogy Level	Mass Pro- duction Effect	Cost Competitiveness	
									Raw and Basic Materials	Labor Cost
	A: High B:Medium C: Low				A:Difficult B:Medium C:Easy		A: High B:Medium C: Low		A:Low B:Medium C: High	
Boilers	B	B	B	C	C	C	A	B	A	B
Steam engines and turbines	C	C	C	C	C	C	B	B	A	B
General purpose engines	C	A	A	C	B	B	B	A	A	B
Agricultural machinery	C	A	A	B	B	A	C	A	A	B
Construction machinery	C	A	A	B	B	A	B	A	B	B
Metal works machinery	C	A	A	A	A	A	C	A	A	B
Textile machinery	A	A	B	B	A	B	C	A	B	B
Food processing machinery	A	A	A	B	A	B	C	B	B	B
Timber, woodwork and plywood machinery	B	B	C	C	B	B	B	B	B	B
Pumps	B	B	A	C	C	C	A	B	B	C
Compressors and blowers	C	B	B	C	C	C	B	A	B	B
Cranes and conveyors, etc.	B	B	B	B	C	B	B	B	B	B
Office machinery and equipment	A	A	A	A	B	A	C	A	B	B
Sewing machines	C	C	C	C	C	B	B	A	B	B
Air conditioners and coolers	C	A	B	B	B	A	B	A	B	B
Game sets and other equipment	C	B	B	B	A	B	C	A	C	B
Metal cutting tools	C	B	A	A	A	B	C	B	A	B
Dies	B	A	A	A	A	A	C	B	A	B
Packaging and packing machinery	A	B	A	B	B	B	C	A	B	B
Industrial robots	C	B	B	B	A	A	C	A	A	B

(2) Action for the Promotion of Agricultural Machinery

The agriculture sector is a key industry, providing food to 200 million people. It is necessary to develop agricultural machinery and equipment with high quality and high productivity for the diffusion of agricultural machinery and equipment in the agriculture sector. The diffusion of agricultural machinery and equipment has the effect of correcting the disparity among urban and local areas as well as enabling a stable provision of foods.

Considering the above, it is recommended that inexpensive, durable, and easy-to-operate agricultural machinery for small-hold farmers be developed. The products to be developed at the initial stage are two-wheel hand tractors (cultivators), attachments for carrying out digging, leveling, planting and cutting, and crop haulage equipment for use with hand tractors.

For the development of the above mentioned agricultural machinery and equipment, it is recommended that cooperation among agricultural machinery dealers, agricultural machinery manufacturers, government R&D institutions, and universities be promoted. It is an effective R&D method for agricultural machinery to test prototype machinery under development at model villages where nearby institutions are conducting R&D

1.4 MACRO FRAMEWORK FOR FUTURE DEVELOPMENT

The most serious problems of the machinery industry in Indonesia are the inability to keep delivery time and to preserve high quality stability. Assemblers exporting their products do not purchase parts and components from suppliers which do not satisfy these two conditions. Even when parts and components manufacturers do not directly export to overseas markets, they are required to satisfy these conditions. The second most important problem is that there are several kinds of essential technologies needed by assemblers but which still can not be provided by local manufacturers.

The necessary measures to improve the QCD (quality, cost, and delivery) level of local machinery parts and components manufacturers are the change of workers' minds and renewal of machinery and equipment. If they are satisfied with the existing level, these companies can not produce high quality products acceptable to assemblers or can not export their products. Therefore, it is necessary to carry out a company-wide renovation of attitude toward QCD, and improve QCD step by step. In addition, as long as workers use obsolescent machinery and equipment and do not use proper inspection equipment, they can not improve their quality level. It is also necessary to introduce new machinery and equipment, and at the same time, improve factory management systems.

Secondly, it is necessary to develop essential technologies currently lacking in Indonesia and enrich the variety of the supporting industry to achieve higher localization of the assembly industries. Although the government is promoting localization of the machinery industry, there are many essential technologies not satisfying assemblers' requirements in quality, cost, strength, and durability. The following seven essential technologies are to be developed for the machinery industry. For reference, the parts that could be manufactured by these technologies were also selected from those of a multi-purpose engine.

- i. Hot forging: crank shafts, connecting rods, lock arms, gears, knuckles, etc.
- ii. Cold forging: constant velocity joints, transmission shafts, counter shafts, gears, etc.
- iii. Die casting: cylinder blocks, cases, covers, clutch housings, etc.
- iv. Low pressure casting: cylinder heads, two-wheel shock absorbers, pistons, etc.
- v. Sintering: final drive gears, meter gears, etc.
- vi. Fine blanking: clutch plates, shift plates, final drives, etc.
- vii. Nitriding treatment: transmission shafts, deaf pins, molds and dies, etc.

The basic strategy for the development of the machinery parts and components industry should consist of two points. First is the promotion of the machinery assembly industry which can serve as the core for the development of the machinery parts and components industry. This is important because the machinery industry, as a whole, is under developed and it can not offer good business opportunities for the parts and components industry. Second is the development of important essential technologies. The priority essential technologies are hot forging and cold forging.

In line with the above basic strategy, the following short-term development measures are proposed.

- i. Nurture the agriculture machinery industry. Although potential demand for agricultural machinery exists within the country, it is not being expressed in the form of market needs due to various impediments.
- ii. Since small-scale metals processing companies are concentrated in specific districts in Indonesia, adopt comprehensive support measures, incorporating marketing, business management and technology, in these districts.

- iii. Provide financial support to companies that have succeeded in developing markets but are unable to take on orders due to a lack of funds.

As medium and long-term measures, the following are proposed.

- i. Enhance the capabilities of official testing and research agencies and vitalize development technology dissemination activities, in order to raise elementary technology levels with respect to metal processing.
- ii. In view of the fact that many small-scale companies operate in poor working environments, construct industrial estates and establish a relocation financial support system for small-scale metals processing companies.
- iii. In the metal processing field, promote financial and technical cooperation with overseas companies that possess high level technology.
- iv. Develop a high technology core machinery industry through attracting overseas companies.

Table 4-1-25 Framework for the Development of the Machinery Parts and Components Industry

Framework for the Development of the Machinery Parts and Components Industry

(1) Basic Strategy

- a. Development of a core machinery industry
- b. Improvement of basic technology relating to metals processing

(2) Short Term Countermeasures

- a. Provide comprehensive support in the areas of marketing, management and technology in districts where numerous metals processing companies are concentrated.
- b. Provide financial support for manufacturing where there is a market demand.
- c. Develop such machinery industries as agricultural machinery, where potentially large demand exists.

(3) Medium to Long Term Countermeasures

- a. Enhance the capabilities of public product development support organizations and disseminate basic technology for metals processing.
- b. Improve working conditions in the metals processing industry through applying relocation funds and constructing industrial estates suited to the small-scale metals industry.
- c. Promote capital and technology provision between overseas manufacturing companies and local manufacturing companies.

Table 4-1-26 Current Conditions, Problems and Countermeasures in the Machinery Parts and Components Industry

Technology	Current Problems	Short Term Countermeasures	Long Term Countermeasures	
Molding and Forming	Hot forging	Problems exist concerning yield, quality and delivery deadlines	Equipment renewal and improvement of mold and die precision	Acquisition of hot precision forging technology
	Cold forging	Although there is demand in the machinery parts and components industry, no companies exist		Introduction of cold forging and fostering of technology
	FC casting	There are numerous companies, but quality levels (including material quality) are low	Fostering of skilled workers through technical guidance	Introduction of casting automation
	Die casting	There are few companies and quality levels are low	Improvement of quality through die and mold fabrication and tie-ups	Equipment renewal
	Low pressure casting	There are few companies and quality levels are low	Fostering of skilled workers through technical guidance	Introduction of low pressure casting automation
	Sintering	There are numerous companies, but quality levels (including material quality) are low		Introduction of sintering lines and fostering of technology
	Pressing	There are numerous companies, but quality and deadline problems exist	Equipment renewal and improvement of mold and die precision	Introduction of transfer presses
	Fine blanking	Although demand from the assembly industry exists, there are no companies		Introduction of fine blanking
	Resin molding	There are numerous companies, but quality and deadline problems exist	Fostering of skilled workers through technical guidance	Introduction of large-scale equipment
	Lathe working	There are numerous companies, but quality and deadline problems exist	Equipment renewal and improvement of cutting tools	Introduction of NC lathes and fostering of skilled workers
Metal Cutting	Polishing	There are numerous companies, but quality and deadline problems exist	Equipment renewal and improvement of grindstones	Introduction of NC cutting machines and fostering of skilled workers
	Rolling	Although there is demand in the machinery parts and components industry, no companies exist	Introduction of rolling machines and fostering of engineers	Introduction of automated lines
	NC	Quality is poor because the few companies that possess this equipment cannot fully utilize it	Fostering of skilled workers and encouragement for equipment introduction (maintenance parts)	Introduction of general purpose automated lines (mass production)

Table 4-1-26 Current Conditions, Problems and Countermeasures in the Machinery Parts and Components Industry (Continued)

Technology	Current Problems	Short Term Countermeasures	Long Term Countermeasures
Metal Cutting	CNC	There are only a few companies, and there is a lack of skill in die and mold-related departments	Fostering of skilled machine workers
	CAD/CAM	There are only a few companies, and there is a lack of skill in die and mold-related departments	Fostering of CAD/CAM engineers
Heat treatment	Carbonization quenching	There are few companies, quality is poor, and skills are lacking	Fostering of batch furnace workers
	Nitriding	There is demand in the assembly industry, but hardly any companies exist	Introduction of equipment and fostering of skilled workers
Surface treatment	Plating	There are few companies and quality and deadline problems exist	Fostering of skilled workers, introduction of equipment and improvement of operating environments
	Coating	Companies exist, but operating environments are poor and there are quality and deadline problems	Improvement of operating environments, establishment of control setups and fostering of skilled workers
Mold/Die	Forging dies	Dies give poor yields and low precision	Fostering of skilled die workers and introduction of equipment
	Casting dies	Dies give poor yields and low precision	Fostering of skilled die workers and introduction of equipment
	Die casting dies	Dies give poor yields and low precision	Fostering of skilled die workers and introduction of equipment
	Pressing dies	Form quality is poor and there are fluctuations in dimensional precision	Fostering of skilled die workers and introduction of equipment
	Fine blanking		
	Resin dies	Dies give poor yields and low precision	Fostering of skilled die workers and introduction of equipment

If new equipment can be successively developed locally through technical assistance from overseas and high quality machinery can be produced, this will enable local procurement to be carried out and will lead to industrial growth

2. AUTOMOTIVE PARTS AND COMPONENTS INDUSTRY

2.1 PRESENT SITUATION OF THE AUTOMOTIVE INDUSTRY

2.1.1 Trend of Domestic Market

The Domestic market of cars had increased rapidly since 1993, though it decreased from the level of the previous year in 1992 and 1996. Annual growth rates were 52.7% in 1994, 17.7% in 1995 and 16.5% in 1997. Annual growth rates of commercial car sales were 57.8% in 1994, 21.1% in 1995 and 8.8% in 1997. The growth rates of passenger car sales were 24.8% in 1994 but dropped to -5.9% in 1995, then again up 16.1% in 1996 and up 66.7% in 1997. A slight reduction of the whole market in 1996 and an increase in passenger car sales was caused by the confusing situation after the implementation of the national car policy. However, sales of total cars decreased sharply in 1998 due to the Asian economic turmoil.

Table 4-2-1 Domestic Market of Cars

Unit: No. of cars

Category	1991	1992	1993	1994	1995	1996	1997	1998
Commercial Cars	215,569	139,527	178,448	281,541	340,859	288,121	313,476	46,380
Category I	157,153	108,758	137,592	225,695	270,303	217,675	38,453	35,650
Category II	40,061	16,194	21,582	33,802	46,826	52,018	5,967	5,444
Category III	11,850	4,432	7,416	15,970	16,714	12,330	1,045	955
Category IV	6,482	10,130	11,855	5,523	6,263	5,451	805	782
Category V	23	13	3	551	753	647	110	62
Passenger Cars	45,783	30,006	32,231	40,219	37,835	43,914	73,215	11,941
Total	261,307	169,533	210,679	321,760	378,694	332,035	386,691	58,321

Source: GAIKINDO

Note: Category I: GVW(Gross Vehicle Weight) 5 tons

Category II: 5 tons < GVW 10 tons

Category III: 10 tons < GVW 24 tons

Category IV: General purpose 4X4 (Jeep)

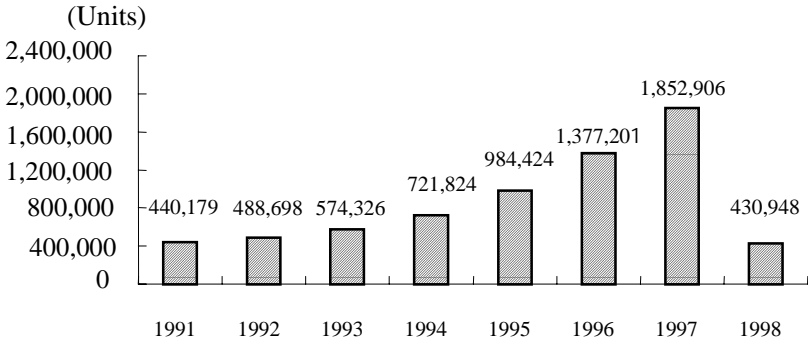
Category V: 24 tons < GVW

In 1997, commercial cars occupied 81% and category I occupied 64.6% of the total sales.

On the contrary, passenger cars occupied only 18.9%.

The sales volume of motorcycles increased continually until 1997. Above all, the increase in sales volume since 1993 was remarkable. Sales volume rose to over one million units in 1996, up 39.9% from the previous year and over 1.8million units in 1997, up 34.5%. The sales volume was expected to be more than 2 million units in the near future. However, sales of motorcycles decreased sharply in 1998 mainly due to extraordinarily high interest rates and drastic income reductions caused by the economic crisis.

Fig. 4-2-1 Sales of Motorcycles



Source: PASMI

2.1.2 Trend of Domestic Production

The annual production volume of cars had also increased rapidly since 1993, except for the years of 1992 and 1996. Annual growth rates were 59.6% in 1994, 19.2% in 1995, -16% in 1996 and 19.5% in 1997. Annual growth rates of commercial car production were 64.6% in 1994, 22.8% in 1995, -16.5% in 1996 and 15.1% in 1997, while those of passenger car production were 32.4% in 1994 but dropped to -4.7% in 1995 and -11.4% in 1996, and then up 55.6% in 1997. The production volume of passenger cars was greatly influenced by the national car policy at that time. However, production volume of cars decreased sharply in 1998 due to the significant slump in domestic car sales.

Table 4-2-2 Production of Cars

Units: No of cars

Category	1991	1992	1993	1994	1995	1996	1997	1998
Commercial Cars	207,890	142,866	172,006	283,214	347,702	290,191	333,951	49,678
Category I	159,607	115,195	131,414	226,426	275,202	220,106	43,156	34,839
Category II	29,829	13,565	21,381	34,182	47,392	52,754	4,699	3,510
Category III	10,046	4,761	7,400	16,185	18,401	11,158	528	364
Category IV	8,166	9,181	11,561	5,921	6,079	5,598	1,257	1,198
Category V	242	164	250	500	628	575	38	11
Passenger Cars	46,607	29,368	31,582	41,807	39,839	35,304	54,925	8,401
Total	254,497	172,234	203,588	325,021	387,541	325,495	388,876	58,079

Source: GAIKINDO

The percentage of production volume by each category of cars is as follows:

Table 4-2-3 Percentage of Production Volume by Category (1998)

Commercial cars	85.5%
Category I	74.3%
Category II	8.1%
Category III	0.9%
Category IV	2.2%
Category V	0.1%
Passenger cars	14.5%
Total	100.0%

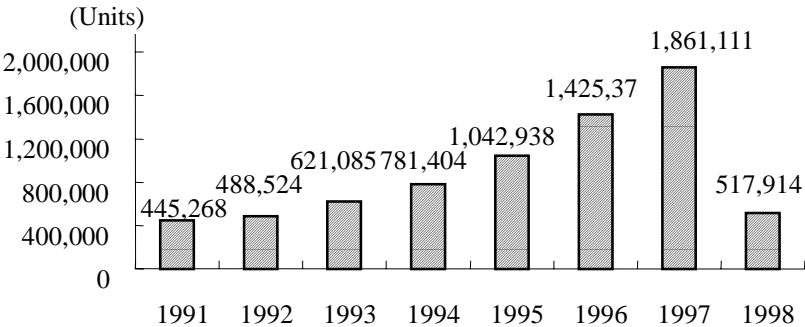
Source: GAIKINDO

While the percentage of commercial cars to the total production has been decreasing, the percentage of passenger cars has tended to increase. In 1998, however, commercial cars still occupied 85.5% and passenger cars occupied only 14.5% of the total production. Of commercial cars, category I still occupied 74.3% of the total production and 86.9% of the commercial car production. Extreme concentration on commercial cars, especially on the Category I cars, is one of the specific characteristics of car production in Indonesia.

The production volume of cars was predicted to expand to 600,000 units in 2000 before the Asian economic turmoil became provident in Indonesia. As a result, most automotive assemblers expanded their production capacity to respond to market expansion before the crisis. This made the situation worse as production decreased. The operation rates of assembling lines reduced to the level of 10 to 15%, while those of stamping lines to 20%, casting to 50% and engine to 60%. However, such operation rates are estimated to be becoming lower.

The situation is quite the same for production of motorcycles. The production volume of motorcycles increased constantly until 1997 and was expected to be more than 2 million units in the near future. However, production volume decreased sharply in 1998 due to the drastic sales reduction in the domestic market.

Fig. 4-2-2 Production of Motorcycles



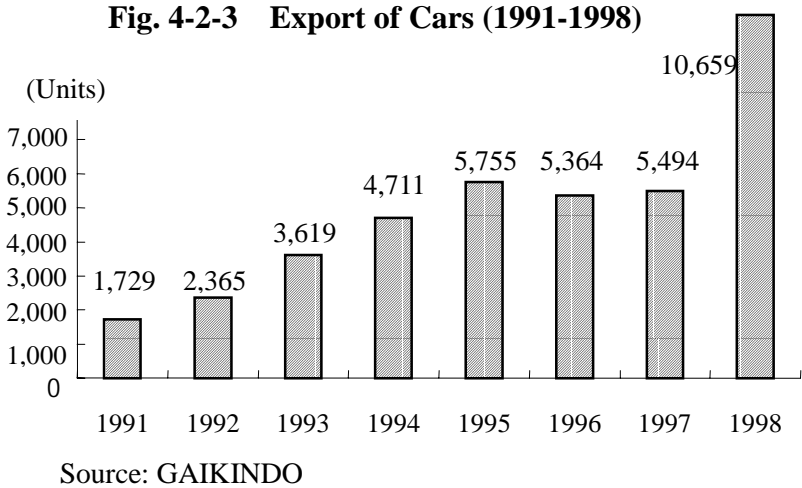
Source: PASMI

2.1.3 Trend of Export

The export volume of cars has been increasing year by year, but the share of the export volume to the total production volume was only 1.4% in 1997.

Because the Indonesian economy is not predicted to recover in the short run, domestic demand for cars will continue to slump at least for the next few years. Therefore, most assemblers in Indonesia are considering exports in response to a significant decrease in domestic demand. However, they had concentratrff on domestic marketing and introduced models which were

only suitable for the domestic market, such as commercial vehicles, right hand drive models, and so on. As a result, there are not many models which have suitable specifications and competitiveness for export to other countries. Actually, the volume of export is very small and cannot cover the sharp reduction in the domestic market.



2.1.4 Situation of Parts and Components Procurement

In Indonesia, under the new localization policy, the assemblers had increased their local production or procurement of parts and components by calculating the local content points for each type of car category. Based on a consideration of the tax incentives given corresponding to the calculated points, they had chosen items to be locally manufactured or procured, so that it had been able to create the highest cost advantage.

In 1997, the average amount of local content for category I was 37.95 points, which was the highest among each type of car category. The amounts of local content for some commercial car models have already reached more than 40 points which allows assemblers to import materials, parts and components without paying import duties. In the case of motorcycles, the average amounts of local content were 48.90 points in 1997. The amounts of local content for some models have already reached more than 70 points.

Table 4-2-4 Average Amount of Local Content by Category

Unit: Points

Category	1994	1995	1996	1997
Commercial Cars	-	-	-	-
Category I	32	40.11	36.94	37.95
Category II	34	31.93	28.30	31.87
Category III	33	32.37	30.31	31.50
Category IV	20	7.06	14.03	16.43
Passenger Cars	15	10.90	10.87	11.23
Motorcycles	45	51.85	47.02	48.90

Source: MOIT

On the other hand, the major manufacturers in Japan, Europe and the United States, having expected the Asian markets to grow, are currently moving ahead with business strategies to develop specific types of vehicles exclusively directed for the Asia region, and to increase the local procurement of parts and components by building regional complementary supply systems of components and parts. Thus, the automotive parts and components companies newly entering into Indonesia are tending to build production bases that will not just meet the domestic demand of Indonesia but also of other Asian markets. Since the production volume of automobiles in Indonesia is still small, it would be difficult for them to rely only on the domestic market. Thus, they are required to develop technology and products that could become leaders, in terms of quality and cost, in the ASEAN countries. Therefore, in addition to the above-mentioned Indonesian domestic factors, the selection of parts and components to be developed in Indonesia has to be conducted taking into consideration the business strategies of the major overseas automotive manufacturers, which would also affect the development course of the supporting industries in Indonesia.

2.1.5 Major Problems and Measures of the Industry

(1) Major Problems

Major problems of the Indonesian automotive industry are as follows:

a. Domestic Market Crash

As already mentioned, the domestic market for cars and motorcycles has been influenced significantly by the Asian economic crisis. The economic crisis caused depreciation of rupiah, price hikes, high interest rates and reduction of purchasing power. Because the Indonesian economy is not predicted to recover in the short run, domestic demands for cars and motorcycles will continue to slump for at least the next few years.

b. Low Utilization of Over Capacity

Because the market was expected to expand to approximately 600,000 units in the case of cars in 2000 and 2 million in the case of motorcycles in the near future, most assemblers have already completed expansion of their capacity in response. The financial burden on such recent expansion in investment is very heavy and low utilization rates of over capacity make the situation worse.

c. Increase in Production Costs

Because the rupiah depreciated sharply, the costs of imported materials and parts increased significantly. However, it is very difficult for assemblers to transfer additional costs to the sales price of finished products under the current economic turmoil.

d. Phase out of the Local Content Incentive Program

In January, 1998, the Indonesian government signed a memorandum with IMF by which the current local content incentive program would be phased out by 2000. In addition, in July, 1998, the WTO panel decided that the incentive program should be adjusted based on the WTO rules. According to the series of agreements, the government is now reviewing the current program. If the current incentive program is replaced with another which does not link lower or zero import duty rates with the

degree of local content of assemblers, assemblers would no longer consider further increase of the local procurement of parts and components that are internationally non competitive.

e. Advanced Implementation of the CEPT-AFTA Schedule

The ASEAN Free Trade Area (AFTA) is scheduled to be introduced with implementation of the Common Effective Preferential Tariff (CEPT) of between 0% and 5% in 2002. In addition, the ASEAN Industrial Cooperation is aiming at advanced implementation of the regular schedule for CEPT-AFTA by reducing import duties of automotive parts and components approved by the member countries. Reduction of import duties on automotive parts and components would enable assemblers to procure them from within the ASEAN region. This might prevent assemblers from a further increase in local content ratio of parts and components.

f. Extreme Concentration on Commercial Car Production

Commercial cars occupy approximately 86% of the total production volume. As background, the fact that the localization policy targeted mainly at commercial cars had been promoted by the government for a long time has had great influence. The local content ratios of parts and components for commercial cars has become relatively high, while those for passenger cars has remained at a relatively lower level. However, because assemblers have been concentrating on domestic marketing and introducing models which are only suitable for the domestic market, there are not many models which have suitable specifications and competitiveness for export to other countries.

g. Dependency on Principals

The Indonesian automotive industry is still dependent on overseas principals for technology for manufacturing cars and motorcycles, and the supply of important parts and components.

(2) Measures Taken by the Industry

Measures taken by the industry are as follows:

- i. Cost reduction activities
- ii. Postponement of investment schedule
- iii. Exploration of export market
- iv. Reduction of manpower
- v. Closing-down of idle production lines

In addition, principals are also considering assistance such as:

- i. Support for accessing the export market
- ii. Price reduction of imported components
- iii. Training for potential engineers and managerial staff

Most principals are making their efforts to increase exports. Examples of these activities are as follows:

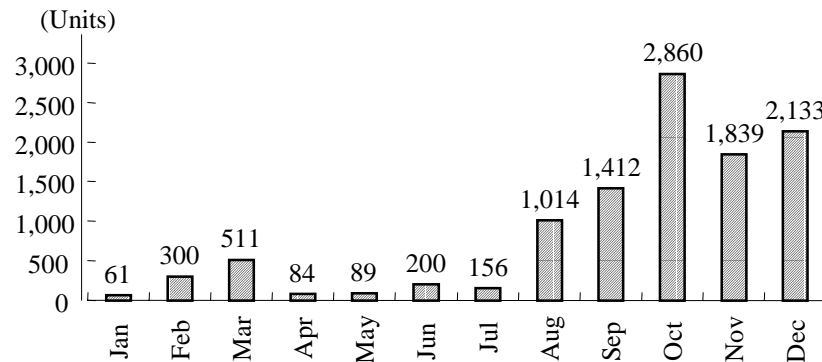
Table 4-2-5 Export Expansion Efforts of Principals

Principals	Major Activities
Daihatsu	-Plans for expanding exports of “Hijet”-based vans to China
Hino	-Export of complete vehicles to Africa -Export of parts to Japan and within the ASEAN region (components, steel materials, and so on)
Honda	-Expansion of exporting engine parts and components for “City,” “Civic” and “Accord” within the ASEAN region through the AICO scheme
Isuzu	-Plans for export of diesel engines and casting parts, such as cylinder blocks and heads, to Japan and other countries -Plans for export of transmission cases to the Philippines -Plans for export of press parts for “Panther” to Taiwan and the Philippines
Mitsubishi	-Export of mutual complementation parts for “Dynamic Family Wagon”, such as sheet panel parts and machining parts, to the Philippines Export of disk brakes for pick-up trucks to Thailand
Suzuki	-Export of CKD for passenger cars to Pakistan -Plans for export of body parts for passenger cars, such as door panels, etc., to Pakistan (Starting in 1999) -Plans for export of engines and transmissions to other ASEAN countries (150 units per year, starting in 1999)
Toyota	-Export of complete (CBU) “Kijang” models to Brunei and South Pacific islands (1,420 units in 1997) -Export of CKD parts for “Kijang” to Malaysia (Started in March, 1998) -Export of CKD parts for “Kijang” to the Philippines (Started in September, 1998) -Export of gasoline engines especially to Japan (planning approximately 17,000 units in 1998 and 38,000 units in 1999) -Plans for export of dies and jigs for production equipment to India and other countries

Source: JAMA

As the result of efforts made by principals, the export volume of cars has been increasing since August, 1998.

Fig. 4-2-4 Export of Cars in 1998

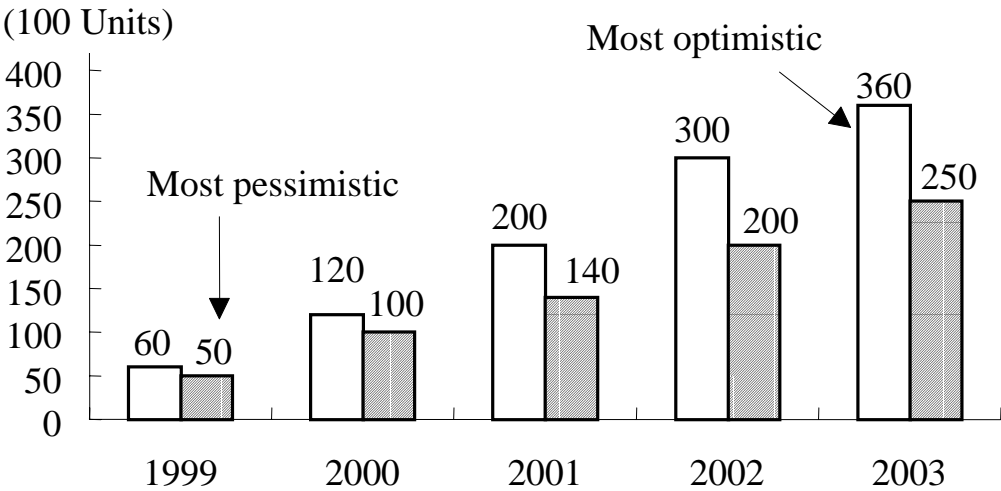


Source: GAIKINDO

2.1.6 Future Development Outlook

According to the prediction of GAIKINDO, the sales volume of cars cannot be expected to recover to the market level of 1997 in 2003 even by the most optimistic forecast. If the most pessimistic forecast is taken, the market size in 2003 would remain at the pre-1994 level. Because the Indonesian economy is not predicted to recover in the short run, domestic demand for cars will continue to slump at least for the next few years. In addition, GAIKINDO has recently published prediction in which the market scale is estimated to be 60 to 70 thousand units in 2000. On the other hand, PASMI predicted the domestic market size of motorcycles would reach 600 thousand in 1999, 720 thousand in 2000, 830 thousand in 2001, 1,020 thousand in 2002 and 1,200 thousand in 2003. Judging from the present situation of the Indonesian economy, however, this prediction could still be said optimistic.

Fig. 4-2-5 Market Forecast of Cars (1999-2003)



Source: GAIKINDO

2.2 PRESENT SITUATION OF THE PARTS AND COMPONENTS INDUSTRY

2.2.1 Industrial Structure and Trend of the Industry

(1) Industrial Structure

The automotive parts and components manufacturers are classified into two types: manufacturers supplying parts and components to the original equipment market and those supplying the spare parts for the replacement market. Further, OEM parts manufacturers can be divided into first tier manufacturers, and other second and third tier ones.

On the other hand, in the case of engines or large press parts, assemblers manufacture by themselves or related companies established by assemblers manufacture, process and/or assemble them in many cases.

(2) Number of Automotive Parts and Components Manufacturers

In 1997, the number of companies that were members of the GIAMM was 125. On the other hand, according to the MOIT, the number of automotive parts and components manufacturers is currently estimated at 171. Other than the GIAMM member companies, there were approximately 50 companies that produced automotive parts and components. As a result, it is estimated that there are approximately 155 manufacturers of parts and components. This number includes mainly the first tier suppliers but also includes a part of the second tier suppliers.

At the end of 1998, the member companies of the GIAMM fell to 113, after twelve companies quit operation. Of the 113 member companies, 53 companies are joint ventures with foreign manufacturers, while the remaining 60 are local companies. However, even in the case of local companies, most of them have received technical transfers or assistance from foreign parts and components manufacturers.

Table 4-2-6 Production Value of Automotive Parts and Components

Unit: Million Rp.

	1994	1995	1996	1997
Engines	618,395	768,231	817,372	985,800
Batteries	-	-	174,750	284,577
Transmissions	155,288	193,943	202,731	246,450
Cabins	68,664	88,901	179,019	225,510
Drive Shafts	109,979	137,207	163,430	203,142
Steering Systems	100,144	125,914	159,039	197,160
Chassis Frames	101,914	128,375	132,779	154,090
Air Conditioners	68,732	89,932	211,419	148,138
Axles & Propeller Shafts	55,635	75,275	87,608	115,010
Brake Systems	74,964	102,451	89,511	112,755
Stamping Parts	-	-	97,507	87,749
Starters	30,188	45,758	72,195	64,110
Radiators	27,219	34,791	52,052	57,585
Alternators	24,696	40,191	45,382	57,538
Spark Plugs	34,205	45,151	58,753	57,097
Clutch Systems	41,160	61,152	40,102	56,378
Seats & Seat Frames	9,750	131,157	40,687	49,988
Filters	21,609	30,258	41,217	47,438
Exhaust Systems	31,673	36,234	33,765	44,094
Door Trims	-	-	46,156	42,722
Shock Absorbers	27,382	33,772	35,412	41,875
Wiring harnesses	22,310	61,595	33,699	38,913
Fuel Tanks	18,637	24,712	30,922	35,706
Leaf Springs	51,102	67,455	23,292	31,281
Rubber Parts	16,834	25,779	28,356	26,940
Control Cables	37,389	45,989	25,175	26,637
Brake Drums	40,000	48,960	13,400	14,972
V-belts	9,535	11,187	13,832	14,867
Pistons	26,745	36,106	9,011	11,498
Rear Bodies	16,507	21,372	7,230	9,305
Brake Shoes	7,771	10,102	6,831	8,062
Horns	2,860	4,150	8,478	7,630
Gaskets	2,160	3,645	7,144	7,423
Coil Springs	-	-	5,295	7,005
Jacks	1,376	2,202	6,022	6,953
Clutch Facings	-	-	7,986	4,899
A/C Compressors	-	-	9,203	3,593
Brake & Fuel Tubes	10,684	17,399	2,432	2,599
Seat Belts	-	-	2,054	2,368
Piston Rings	3,568	4,520	1,997	2,314
Bumpers	-	-	778	1,964
Washer Tanks	1,842	3,223	1,952	1,756
Reserve Tanks	-	-	1,017	528
Total	1,870,917	2,557,089	3,041,411	3,558,372

Source: MOIT

(3) Trend of Domestic Production

The production value of automotive parts and components increased continually until 1997. Annual growth rates in value terms were 36.7% in 1995, 18.9% in 1996 and 17.0% in 1997. The production value of engines occupied 27.7% of the total value in 1997, followed by batteries (8.0%), transmissions (6.9%), cabins (6.3%), drive shafts (5.7%) and steering systems (5.5%). However, the production value fell by 22.3% year on year in 1988.

The member companies of the GIAMM produce 135 kinds of parts and companies for cars and motorcycles. However, this number does not include press parts manufacturers. Of these 135 parts and components, 44 are supplied to other parts and components manufacturers. In general, about 60% of parts and components are supplied to the OEM market, while the remaining 40% to the replacement market. Not only raw materials, but also many parts necessary for manufacturing the products are still imported.

Before the economic crisis occurred, the member companies of the GIAMM supplied their products as follows:

Table 4-2-7 Market for the GIAMM Member Companies Before the Crisis

Number of Companies	Market		
	OEM	Replacement	Export
39	X	X	X
27	X	X	-
18	X	-	X
2	-	X	X
31	X	-	-
7	-	X	-
1	-	-	X

Source: GIAMM

Note: X shows products are supplied to the market.

In response to on-going increases in the production of cars and motorcycles until 1997, turn-over and export of parts and components manufacturers also increased continually as shown in Table 4-2-8.

Table 4-2-8 Situation of Parts and Components Manufacturers Before the Crisis

Year	Turn-over (Trillion Rupiah)	Export Value (Million US\$)
1995	5.30	199.9
1996	6.63	255.8
1997	7.28	321.0

Source: GIAMM

2.2.2 Technological Level

Moving away from the traditional efforts to improve localization rates and conventional management policies that were based on providing a level of quality suitable for the Indonesian market, in order to respond to the market shrinkage that has accompanied the economic crisis, companies are aiming for improved competitiveness in terms of a level of quality suitable for mutual complement of parts and components within the ASEAN region and export, and reduced costs. This has resulted in demands for product specifications to be reviewed in order to encourage the manufacture of products of which quality can meet global standards, as well as cost reductions and lowering of failure rates. Enterprises in the parts and components industry have widely differing levels of technological competency, and may be grouped as follows.

Group 1 : This group comprises component manufacturers that manufacture a completed part or component, as part of a joint venture or technical tie-up, and those which export fabricated parts as an assembler, and have a technical level that is globally competitive in QCD. Some 85% of the parts manufacturers with which assemblers deal are either joint ventures or technical tie-ups.

Group 2 : This group comprises companies that produce sub parts and components, and supply to parts and component manufacturers and assemblers, and whose technical levels

vary over a considerable range. There are joint venture and technical tie-up companies, as well as local enterprises. In order to keep pace with parts export trends, considerable reductions in failure rates, and improvements in yield, are required.

Group3 : These are small, local enterprises that require improvements in production facilities and production management, as well as in the area of quality management. In particular, there are many whose production facilities tend to be in dilapidated condition and are unable to provide products with the consistent accuracy required by the automotive industry, and who carry out adjustments and finishing by hand. These companies are unable to handle orders for added value products. In addition, they suffer from a lack of capital and management resources, and have little scope for improvement, due to reduced orders.

Table 4-2-9 Parts and Components Manufacturer Classifications

Classification			Manufacturing	Export	
Group 1	Assemblers		JV	Specified lines	P
	Components Manufacturers		JV/Technical assistance	Specified lines	P
Group 2	Sub Parts Suppliers	Casting	JV/Technical assistance	-	P
		Presswork	Technical assistance	-	P
		Dies/ Jigs & Fixtures	JV/Technical assistance	-	D
Group 3	Sub Parts Suppliers	Casting	Indonesian	-	P
		Presswork	Indonesian	-	D
		Machining	Indonesian	-	D
		Dies/ Jigs & Fixtures	Indonesian	-	D

Source: The Study Team

Note: P shows possibility and D shows difficulty

2.2.3 Situation of Raw Materials Procurement

Most raw materials are imported. The general supply conditions are described in Table 4-2-10. In the case of imported raw materials, manufacturers usually maintain three months

inventory as it takes about three months to receive the ordered materials. Because of this, the recent drop in demand means that most manufacturers have from 6 months' to a year's inventory in stock.

Table 4-2-10 Supply of Raw Materials

Raw Materials		Domestic Procurement	Import
Iron & Steel	Pig Iron for Cast Iron	-	P
	Hot Rolling Steel	P	-
	Plating Steel	-	P
	Carbon Steel / Alloy Steel	-	P
Non-ferrous Metals	Aluminum Alloy Ingot	P	-
	Copper	P	-
Others	Plastics	-	P
	Synthetic Rubber	-	P
	Coke	-	P
	Casting Binder	-	P

Source: The Study Team

Note: P shows possibility of supply

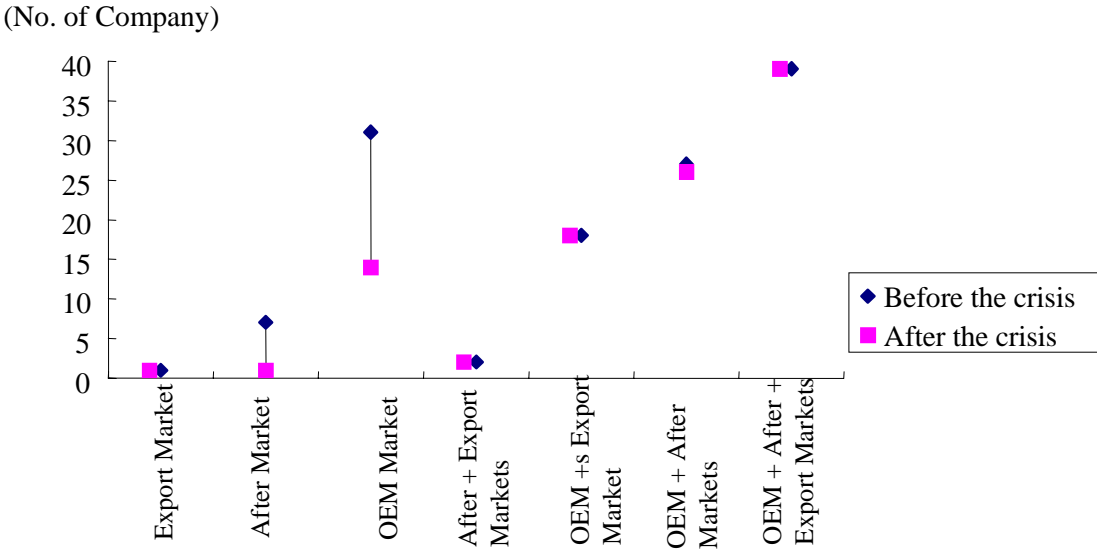
2.2.4 Influence of the Economic Crisis on the Industry

The domestic market size of cars was predicted before the crisis to reach 600,000 units in 2000. In response to this forecast, most OEM parts and components manufacturers and some spare parts manufacturers increased their production capacity mainly in 1997 and early 1998.

However, as the influence of the economic turmoil increasingly affected in Indonesia, the situation of parts and components manufacturers worsened. For example, as shown in Fig.4-

2-6, the number of manufacturers producing parts for OEM and the replacement market decreased sharply after the crisis in comparison with the number before the crisis.

Fig.4-2-6 Change in Situation of GIAMM Members



Source: GIAMM

A sharp decrease in production by assemblers has been directly connected to the severe decrease in production by parts and components manufacturers who mainly supply their products to assemblers. Some manufacturers have been forced to stop their production lines as most assemblers actually stopped assembling lines, while others continue at only 10 to 15% of full capacity. Because the influence of the economic turmoil is also clear in the replacement market and sales of spare parts are also falling sharply, parts and components manufacturers who are mainly dependent on the replacement market are also suffering from the sharp fall in production. As a result, thirteen member companies of GIAMM are now inactive. However, some manufacturers, who have exported their products for years and have a good relationship with overseas customers, are still increasing their exports.

According to the results of the questionnaire survey to the automotive parts and components industry, carried out by the Study Team, the effects of the economic crisis on the industry may be summarized as follows.

(1) Impact of the Economic Crisis

With regard to the impact of the economic crisis on businesses, 49.0% of respondent companies said “Very serious.” When combined with the companies that answered “Serious,” this gives a figure of 81.7% of companies that have been seriously impacted by the crisis. In the case of foreign affiliated companies, 100% of them said “Very serious,” “Serious,” or “A little serious.” In terms of the number of employees, 61.5% of the companies hiring more than 300 said “Very serious.” The impact seems to be strong on large scale companies.

Table 4-2-11 Impact of the Economic Crisis

Unit : %

	Very serious	Serious	A little serious	No influence	Good influence
Domestic	46.6	34.1	6.8	3.4	9.1
Foreign affiliated	62.5	25.0	12.5	-	-
Less than 19 employees	47.5	32.5	5.0	7.5	7.5
20-99 employees	45.9	40.5	2.7	-	10.8
100-299 employees	44.4	11.1	33.3	-	11.1
More than 300 employees	61.5	30.8	7.7	-	-
Total	49.0	32.7	7.7	2.9	7.7

(Source) The Questionnaire Survey

(2) Impact on Domestic Sales

With regard to the impact that the economic crisis has had on domestic sales, 87.6% of respondent companies said that sales had “Decreased.” This means that practically almost all the companies have experienced a drop in domestic sales. In addition, all the companies hiring more than 300 employees experienced sales decrease, indicating they are more dependent on domestic sales.

Table 4-2-12 Impact on Domestic Sales

Unit : %

	Decrease	No change	Increase
Less than 19 employees	82.9	9.8	7.3
20-99 employees	86.5	2.7	10.8
100-299 employees	88.9	-	11.1
More than 300 employees	100.0	-	-
Total	87.6	4.8	7.6

(Source) The Questionnaire Survey

The rate of decrease in domestic sales was given as “from 75% to less than 100%” by 40.4% of respondents, and “from 50% to less than 75%” by 38.2%, meaning that a total of 78.6% of companies have experienced over 50% decreases in domestic sales.

(3) Impact on Operation Rates

As regards the impact on operating levels, these were 88.3%, on average, before the economic crisis, falling sharply to 40.3% afterwards. 8.9% of respondents gave their operating levels as “less than 10%”, 26.7% as “from 10 to less than 25%,” and 28.9% as “from 25 to less than 50%.” Almost 65% of the total of companies surveyed are experiencing a drop in operating levels to lower than 50%. In terms of the number of companies, larger scale ones tend to keep lower operation rates than smaller ones. For example, the average operation rates of the companies hiring more than 300 employees are 35.4%, while those of the companies less than 19 are 43.7%.

Table 4-2-13 Operation Rates Before the Crisis

Unit : %

	Less than 49%	50-74%	75-99%	More than 100%	Average
Less than 19 employees	2.9	8.6	60.0	28.6	87.5
20-99 employees	3.1	12.5	43.8	40.5	87.2
100-299 employees	-	-	50.0	50.0	94.8
More than 300 employees	-	8.2	50.0	41.7	90.9
Total	2.2	10.0	52.2	35.6	88.3

(Source) The Questionnaire Survey

Table 4-2-14 Operation Rates After the Crisis

Unit : %

	Less than 9%	10-24%	25-49%	50-74%	75-99%	More than 100%	Average
Less than 19 employees	2.9	25.7	37.1	17.1	3.3	11.4	43.7
20-99 employees	12.5	21.9	28.1	21.9	5.7	12.5	41.1
100-299 employees	12.5	37.5	25.0	12.5	3.1	12.5	35.6
More than 300 employees	8.3	33.3	16.7	41.7	-	-	35.4
Total	8.9	26.7	28.9	22.2	3.3-	10.0	40.3

(Source) The Questionnaire Survey

(4) Impact on Exports

The economic crisis has had a major impact on exports. 40.9% of the surveyed businesses reported a decrease in exports. The rate of decrease in exports was reported as being “from 50 to less than 70%” by 50% of respondents. When this is totaled with those who reported a ratio of “from 25 to less than 50%,” it can be seen that some 80% of the surveyed businesses are experiencing severe drops in exports.

Table 4-2-15 Impact on Exports

Unit : %

	Decrease	No change	Increase
Less than 19 employees	-	66.7	33.3
20-99 employees	50.0	16.7	33.3
100-299 employees	50.0	50.0	-
More than 300 employees	40.0	30.0	30.0
Total	40.9	31.8	27.3

(Source) The Questionnaire Survey

Table 4-2-16 Decrease Ratio of Exports

Unit : %

	Less than 9%	10-24%	25-49%	50-74%	75-99%	More than 100%	Average
Less than 19 employees	-	-	-	-	-	-	-
20-99 employees	-	-	-	100.0	-	-	70.0
100-299 employees	-	-	100.0	-	-	-	25.0
More than 300 employees	-	33.3	33.3	33.3	-	-	35.7
Total	-	16.7	33.3	50.0	-	-	45.3

(Source) The Questionnaire Survey

(5) Impact on Corporate Profits

86.4% of the surveyed businesses reported that corporate profits were down. Practically all businesses have suffered some decrease in corporate profits. In terms of the number of employees, 92.3% of the companies who had more than 300 employees experienced decrease,

while 88.9% for those hiring 100 to 299 employees, 85.7% for those with 20 to 99, and 82.9% for those less than 19.

Table 4-2-17 Impact on Corporate Profits

Unit : %

	Decrease	No change	Increase
Less than 19 employees	82.9	9.8	7.3
20-99 employees	85.7	2.9	11.4
100-299 employees	88.9	-	11.1
More than 300 employees	92.3	7.7	-
Total	86.4	5.8	7.8

(Source) The Questionnaire Survey

The rate of decrease in corporate profits was reported as being “from 75% to less than 100%” by 25.0% of respondents and “from 50% to less than 75%” by 37.5%, while some 20% of respondents reported this figure as being “100% or greater.” This means that a total of 84% of the surveyed companies have experienced 50% or greater decreases in corporate profits.

Table 4-2-18 Decrease Ratio of Corporate Profits

Unit : %

	Less than 9%	10-24%	25-49%	50-74%	75-99%	More than 100%	Average
Less than 19 employees	-	6.3	9.4	46.9	37.5	-	64.1
20-99 employees	3.6	7.1	3.6	35.7	17.9	32.1	79.5
100-299 employees	-	14.3	14.3	28.6	14.3	28.6	62.9
More than 300 employees	-	-	-	33.3	11.1	55.6	155.6
Total	1.3	8.8	6.3	37.5	25.0	21.3	79.2

(Source) The Questionnaire Survey

(6) Impact on Employment

Considering the effect on employment, while the average number of employees prior to the economic crisis was 236 persons, this dropped to around half, to 132 persons, afterwards, down 44.9%.

Table 4-2-19 Number of Employees Before the Crisis

	Unit : %				
	Less than 9	10-49	50-99	More than 100	Average number
Less than 19 employees	7.1	92.9	-	-	17.1
20-99 employees	-	26.3	31.6	42.1	128.7
100-299 employees	-	-	-	100.0	425.8
More than 300 employees	-	-	-	100.0	1186.9
Total	3.3	53.3	10.0	33.3	236.0

(Source) The Questionnaire Survey

Before the crisis, 33.3% of the businesses surveyed employed 100 persons or over. In the wake of the crisis, this figure had dropped to 20.0% of companies. On the other hand, whereas the number of companies employing fewer than ten persons was 3.3% of the total before the crisis, this figure rose to 26.7% afterwards.

Table 4-2-20 Number of Employees After the Crisis

	Unit : %				
	Less than 9	10-49	50-99	More than 100	Average number
Less than 19 employees	57.1	42.9	-	-	9.0
20-99 employees	-	63.2	36.8	-	46.2
100-299 employees	-	-	-	100.0	151.8
More than 300 employees	-	-	-	100.0	774.1
Total	26.7	41.7	11.7	20.0	132.4

(Source) The Questionnaire Survey

(7) Countermeasures

With regard to countermeasures adopted in the face of the economic crisis, 71.4% of companies reported reducing the number of employees. Other than this, efforts to stimulate sales occupied the top positions, with “Development of new domestic markets” (45.7%) and “Development of new export markets” (41.9%). Additionally, a relatively high number of respondents reported measures such as “Product diversification” (31.4%), “Requesting assistance from financing organizations” (25.7%) and “Requesting support from parent company” (22.9%).

In terms of scale of companies, 76.9% of the companies with more than 300 employees chose “Development of new export markets.” In the case of smaller companies, they tended to select reduction of employees with relatively higher rates.

Table 4-2-21 Countermeasures for the Crisis

Unit : %

	Development of new domestic market	Development of new export market	Diversification of products	Temporary operation stop	Workforce reduction	Request for support from parent companies	Request for support from banks	Others
Less than 19 employees	45.2	19.0	31.0	4.8	73.8	16.7	21.4	26.2
20-99 employees	50.0	50.0	33.3	8.3	75.0	30.6	27.8	13.9
100-299 employees	22.2	55.6	33.3	22.2	55.6	22.2	33.3	-
More than 300 employees	38.5	76.9	23.1	15.4	76.9	30.8	30.8	-
Total	45.7	41.9	31.4	9.5	71.4	22.9	25.7	17.1

(Source) The Questionnaire Survey

2.3 MAJOR PROBLEMS OF THE AUTOMOTIVE PARTS AND COMPONENTS MANUFACTURERS AND MEASURES TO BE TAKEN

2.3.1 Overall Problems of the Automotive Parts and Components Manufacturers

Major problems of the Indonesian automotive parts and components industry and the counter measures to be taken are as follows:

(1) Domestic Market Crash

As already mentioned, the domestic market for cars and motorcycles has been influenced significantly by the Asian economic crisis. This would directly lead to a sharp reduction of OEM parts and components. In addition, consumption of spare parts is also significantly influenced by the economic crisis. Production of parts for the replacement market would also slump and cannot expect quick recovery in the near future. The domestic market for both OEM and replacement parts and components market has experienced sharp shrinkage and is unlikely to recover especially for OEM parts and components at least for the next few years

In addition, the inventory level of raw materials is estimated to be at more than one year because of the assemblers' previous market estimation and the sharp fall in domestic demand.

(2) Low Utilization of Overcapacity

In response to an optimistic market projection for both cars and motorcycles, most OEM parts and components manufacturers have already completed expansion of their capacity. The financial burden of such recent expansion in investment is very heavy.

(3) Increase in Production Costs

The costs of imported materials such as steel, and of imported parts and components have

skyhiked. In addition, costs for depreciation also increased significantly due to the sharp reduction in manufacturing. However, it is very difficult for parts and components manufacturers to transfer additional costs to assemblers under the current depressed automotive market.

(4) Phase out of the Local Content Incentive Program

The current automotive policies of the government are being reviewed according to the series of agreements through the WTO panel decision. Automotive assembles would no longer consider further increase of the local procurement of parts and components which are not internationally competitive.

(5) Advanced Implementation of the CEPT-AFTA Schedule

Implementation of the Common Effective Preferential Tariff (CEPT) and the ASEAN Industrial Cooperation also would influence the future production and procurement plans of automotive assemblers which would make the international competition among parts and components manufacturers in the ASEAN region severer.

(6) Dependency on Foreign Manufacturers

The majority of Indonesian automotive parts and components industry is still largely dependent on overseas manufacturers for manufacturing technology. The present technological level of the Indonesian automotive parts and components manufacturers including R&D capability is still insufficient to become independent for the purpose of developing original parts and components by themselves.

In addition to these problems, small and medium size manufacturers have difficulties in such areas as finding financial institutions who are eager to lend working capital, the high interest rate burden of working capital for raw materials storage, and the difficulty in developing overseas markets by themselves.

Especially in the case of first tier parts and components manufacturers, they have specific problems, as they have specialized production equipment for manufacturing specific automotive parts and components and in most cases it is difficult for them to produce other kinds of parts and components such as those for agricultural machinery and electric appliances

The major problems of automotive parts and components manufacturers can be classified into short and medium/long-term ones as follows:

(1) Short-term Problems

Major problems of automotive parts and components suppliers which should be solved in the short-term are summarized as follows:

- i. The sharp shrinkage of the domestic market for both OEM and replacement market and the unlikely recovery of the market especially for OEM parts and components at least for the next few years
- ii. An increase in production costs as the result of increases in costs for imported raw materials such as steel, due to the sharp depreciation of the rupiah
- iii. The burden of the recent expansion in investment in response to the assemblers' market estimation of approximately 600,000 units in the case of cars and 2 million in the case of motorcycles
- iv. The stock of raw materials is estimated at more than one year due to the sharp fall in domestic demand
- v. The difficulty in raising prices in response to the increase in production costs
- vi. The difficulty in finding financial institutions who could lend working capital
- vii. The high interest rate burden on working capital
- viii. The difficulty in developing overseas markets by themselves

(2) Medium/Long-term Problems

Major problems which should be solved in the medium and long-term are summarized as follows:

- i. Specialized production equipment for automotive parts and components and

difficulty in producing other kinds of parts and components such as those for agricultural machinery and electric appliances in most cases

- ii. High dependence on imported raw materials and parts and components
- iii. Still insufficient technological level for export
- iv. Undeveloped domestic raw material industries
- v. Limitation of information on overseas market

2.3.2 Managerial and Technological Problems

(1) Market Development

Due to the dramatic shrinking of the domestic market, in order to secure a sufficient quantity of work, manufacturers need to export and develop new customers. However, the management systems of most companies have hitherto been geared toward the domestic market, and local enterprises in particular are unskilled in the developing of information and sales routes necessary for export and the development of new markets. Enterprises will need to tackle such development in an organized way. They will require assistance from public organizations.

(2) Production and Quality Control

As can be seen from the management targets to improve the domestic operation rate, manufacturers are attempting to expand their markets by exporting, in order to secure sufficient orders. This requires a management setup that can satisfy global customers, in terms of quality, price and delivery.

Production control and quality control need to be improved through a review of quality standards, the reduction of manufacturing process failure rates, review of quality control systems and targets for the reduction of costs.

(3) Information

In contrast to the days when the domestic market was growing steadily, the current situation demands the development of new sales routes, and the strengthening of marketing power.

(4) Financial Management and Financing

The dramatic reduction in orders has led to a weakening of financial health, and a lack of capital. Inventory levels and fixed costs need to be brought down, and management through data collection and checking needs to be used to gain a full understanding of the problem areas and to come up with solutions.

(5) Supply of Raw Materials

As described in Table 4-2-10, there are very few raw materials that can be supplied domestically. This means that ways need to be found to improve the efficiency of supply arrangements, and to shorten supply times. This will require the effort of individual companies along with systematic government support.

(6) Insufficient Technology

Automotive parts require precision forged parts, but there are no companies in Indonesia that can do precision forging, such as cold forging, etc. The current shrinkage of the market makes the participation of foreign firms and new investment difficult. However, viewed from a long term perspective, the issue should be improved by the development of technology training.

Majority of molds requiring a high technical level or of large size both for die casting and injection molding are imported. There needs to be development of domestic companies that can compete in terms of shortened delivery times and reduced costs.

Carbon steel and alloy steel, which are used in the manufacture of major components, are imported, and the development of companies that can handle this domestically is an important issue.

2.3.3 Necessary Measures to be Taken

Major management problems and their counter measures for the Indonesian automotive parts and components industry are summarized as follows:

Table 4-2-22 Major Problems and Measures of the Indonesian Automotive Parts and Components Industry in the Management Area

Category of Manufacturers		Problem Areas	Measures	
First tier manufacturers	Foreign joint venture or technical assistance	-Domestic market crash	-Increase production through export acceleration with the full support of foreign parts and components manufacturers	
		-Low utilization of over capacity		
		-Difficulty in changing production items due to specific machines		
		-Increase in production costs	-Stabilization of currency -Increase in local procurement -Consideration of strategic import duty reduction on crucial raw materials	
	Indonesian	-Phase out of the local content incentive program	-Adoption of moderate import duty reduction schedule for companies to develop suitable and competitive export system -Increase in local procurement -Political support for each company to restructure their production items in accordance with the ASEAN regional market	
		-Advanced implementation of the CEPT-AFTA schedule		
		-Domestic market crash		-Increase in exports
		-Low utilization of over capacity		-Raise technical levels so that they can be internationally competitive -Diversification of production items
	-Difficulty in changing production items due to specific machines			
	-Increase in production costs	-Stabilization of currency -Increase in local procurement -Import duty reduction on crucial raw materials		

Table 4-2-22 Major Problems and Measures of the Indonesian Automotive Parts and Components Industry in the Management Area (Continued)

Category of Manufacturers		Problem Areas	Measures
Second tier subcontractors	Foreign joint venture or technical assistance	-Domestic market crash	-Increase production through export acceleration with the full support of foreign parts and components manufacturers -Diversification of production items
		-Low utilization of over capacity	
		-Difficulty in changing production items due to specific machines	
		-Increase in production costs	
	Indonesian	-Domestic market crash	-Supply of both domestic and overseas market information -Export promotion support activities by public institutions -Diversification of production items
		-Financing	- Financial supports not only for equipment modernization and upgrading but also for working capital with low interest rates
-Insufficient technological level		-Technical assistance -Expansion of management skill training systems -Strengthening of technical guidance visits by experts for establishment of mass production technology -Expansion of common facilities	
Potential second tier and third tier subcontractors	Subcontractors of spare parts manufacturers	-Weak marketing capability -Weak management -Limitation of information on both domestic and overseas markets	-Supply of market information -Marketing and management training
	Subcontractors of other industries		

Source: The Study Team

The automotive parts and components industry in Indonesia can be divided into (i) primary subcontractors, consisting mainly of foreign affiliates and local companies having technical tie-ups with overseas manufacturers, (ii) secondary subcontractors, consisting mainly of indigenous small and medium sized companies (including companies that manufacture products for the after-sales market), and (iii) small companies without the ability to perform

sub-contract processing for automobile assemblers. Each of these groups has its own peculiar set of problems.

The first group, comprised mainly of foreign affiliates, are facing a variety of problems such as (i) the fact that they have technical skills at internationally acceptable levels, but low production volume, meaning that they have poor price competitiveness internationally, and (ii) due to the dramatic drop in domestic demand, the burden of fixed overheads has increased significantly, which further reduces price competitiveness. Against this backdrop, (iii) there is increasing pressure from the WTO to do away with the government's local content policy (import duty protection policy), (iv) the accelerated reduction of import duties within the ASEAN region must be carried out, and (v) the fact that there are many companies that have installed specialized equipment for the manufacture of specific parts and components, which means that it is very difficult for them to change their production lineup, must be addressed.

As short term solutions to the problems faced by these companies, the following proposals have been made. (i) Each company should concentrate on improving its production volume in order to increase international competitiveness and, in order to provide some respite until products are developed for export, duties on imported parts and components should be set relatively higher. (ii) Import duties on raw materials and parts and components, which are a major source of high product costs, should be lowered. (iii) For companies that cannot continue production at the present level of demand, policies should be devised to provide support in order to facilitate the shift to different types of business, and (iv) there should be better export marketing support for companies that lack export experience.

As mid to long term strategies, there needs to be (i) investment in related infrastructure, in order to improve international competitiveness, (ii) expansion of education and training facilities for the improvement of workers' technical skill levels, (iii) rectification of high import costs by the fostering of secondary sub-contractor enterprises, and (iv) efforts to attract foreign companies with export competitiveness.

The secondary sub-contractors, comprised mainly of local small to medium sized industries, also face a variety of problems, including, (i) the rapid fall in domestic demand, (ii)

skyrocketing prices of imported raw materials and the difficulty in obtaining them, and (iii) the drying up of working capital following the collapse of the financial markets.

Suggestions for short term solutions to the problems faced by this group include (i) reinforced marketing support in order to improve linkage with primary sub-contractors, etc., (ii) on-site coaching for the improvement of technical skill levels, (iii) assistance in order to raise business management and marketing skill levels, and (iv) financial support in order to secure working capital.

Mid to long term strategies should include (i) from among parts that still have a high degree of reliance on imports, select those whose cost competitiveness could be improved by increasing local content, and provide increased support for companies in the areas of technical skill level and business management skill level improvement, etc., and (ii) the expansion of mid to long term financing in order to encourage plant modernization.

In addition, measures to assist those small businesses that do not have the capacity to supply the automobile assemblers are basically the same as those proposed for the secondary sub-contractor group. However, as these companies tend to be quite small in scale, emphasis should be placed on measures such as (i) locally focused support strategies and (ii) the organizing of small businesses into cooperative societies or the construction of business networks within specific local areas, in order to win joint orders, etc.

Major technical problems of the Indonesian automotive parts and components industry and their counter measures are summarized as follows:

Table 4-2-23 Major Problems and Measures of the Indonesian Automotive Parts and Components Industry in the Technical Area

Category of Manufacturers		Problem Areas	Measures
First tier manufacturers	Major products are parts related to -engines -drive axles -brakes -suspensions	-Inflexibility to demand fluctuations due to high in-house production ratio -Weak quality control -Difficulty of quality and delivery control of subcontractors -High import materials and parts dependency -Difficulty in mold procurement and maintenance	-Increase in exports by QCD improvement -Overseas training of workers -Reduction of import duty on raw materials and parts -Support for the development of selected local subcontractors -Technical training on mold design and production -Technical training on production management
Second tier subcontractors	Metal press	-Low accuracy processing -Obsolete production facilities -Low grade of mold used	-Upgrading of production management and quality control capabilities through such measures as 1) utilization of foreign experts, 2) modernization of machinery and equipment, 3) assistance from public technical support institutions, and 4) training of workers -Technical support for the diversification of products by public technical support institutions -Technical training on mold design and production
	Casting	-High bad production ratio -High import dependency of binders and ferrous alloy	
	Forging	-High bad production ratio -Low level of mold design and processing design -Lack of cold forging technology	
	Aluminum die casting	-Low grade of products -Lack of low pressure die casting technology	
	Machining	-Low grade of processing due to obsolete machinery	
	Mold making	-Lack of technology in high precision molds, large molds or sophisticated injection molds	
	Plastic molding	-Lack of technology in engineering plastic injection molding	
Potential second tier and third tier subcontractors	Aluminum die casting Casting Hot metal press Plastic molding Mold making	-Low product quality -High bad product ratio (Potential cost competitiveness)	-Upgrading of production management and quality control capabilities through such measures as 1) utilization of foreign experts, and 2) modernization of machinery -Technical support for the diversification of products by public institutions

Source: The Study Team

At this juncture, if the automotive parts industry is to survive, it must increase supply to the assemblers or endeavor to maintain production levels. However, in the very near future, it will require a system that will enable it to survive international as well as domestic competition.

Securing a sufficient volume of orders is an immediate priority. However, with the current level of technology and production facilities of the secondary subcontractors it is difficult to obtain orders from the assemblers and parts and component manufacturers.

Technological ability and business management ability, etc. cannot be improved overnight, but it is imperative that mid to long term strategies be established for corporate overhaul.

In the following three parts categories in particular, there is need for improvement.

(1) Improved Competitiveness of Currently Exported Parts and Components

Aluminum die cast parts and cast iron parts, etc. are cost competitive and have a good export track record. However, the current failure rate is high (5 to 10%), and improvements in production management and production engineering, staff training for quality improvement and strict adherence to delivery dates are the minimum requirements if the industry is to survive.

In particular, there is a very low awareness of quality assurance in the current manufacturing processes, and the brunt has to be borne in the final processes. This kind of production system needs to be improved. For example, in the best local companies, Japanese made machining centers and NC lathes are being introduced into the final machining processes. However, in such key areas as mold quality and casting condition management, they are covered using lots of machine processing and cheap labor.

In order to produce products that will satisfy the customers, there needs to be quality assurance at every step in the manufacturing process. This enables cost assurance, quality assurance and delivery assurance.

(2) Development of New and Competitive Products by Indonesian Industries.

Companies need to select products having the potential to be exported, and technical capability and added value production have to be improved continuously.

a. Presswork

Currently, there are many companies importing high precision molds. The quality of the molds being used by Indonesian companies is rather poor and they cannot comply with production of high precision parts and components, so they cannot get orders for high added value parts from assemblers and joint venture parts manufacturers.

b: Aluminum Casting

Parts and components that require very high quality, such as cylinder heads and crank cases, are either produced in-house by joint ventures or imported. The expansion of work volume, and the manufacture of high added value parts, will require better technological skills, and the study of technologies such as low pressure casting, etc.

c. Molds

Currently, high precision molds and large scale molds are imported. The quality of the molds being used by Indonesian companies is rather poor, and important parts and components are either produced in-house by joint ventures or imported.

There is a high level of customer demand for cheap, domestically produced molds. Domestic production of molds would not only keep costs low, but would also make shorter repair and supply schedules possible, as well as improving delivery management. In order to improve parts export competitiveness and to win orders for

high added value parts and components, there need to be highly competent local mold manufacturing companies.

(3) Localization of High Valued Added Parts and Components

In Indonesia, the manufacturing of parts is mainly that of low added value parts, with high added value parts being produced by joint ventures or imported. In the future, there is likely to be more and more mutual complementation of parts by the assemblers and joint venture parts manufacturers. If Indonesian industries are to survive, they will need to shift from manufacture of current low added value parts and components to that of higher added value parts. And to do this, they will need to formulate business strategies and strengthen their marketing.

2.4 MACRO FRAMEWORK FOR FUTURE DEVELOPMENT

2.4.1 Reconsideration of Priority Products

(1) First Screening Step for Selecting Priority Products

The first screening of the automotive parts and components in order to select the parts and components as candidates for the priority parts and components was conducted by judging technological difficulties of parts and components through the experiences of the Study Team members. The main standards for the selection at this point are summarized briefly as follows:

- i. Parts and components whose weights to the total production costs of cars are very small, that is, whose points in the local content point table are low, and whose market size is not significantly large, would be basically excluded.
- ii. Parts and components which have been localized substantially, that is, having a good potentiality of highly competitive in the international market, would be selected.
- iii. Parts and components which are locally produced and their raw materials are procured locally are selected.

(2) Second Screening Step for Selecting Priority Products

The parts and components which are selected as the result of the first screening was classified into three groups based on the following grouping standards in order to estimate the priority.

Table 4-2-24 Grouping Standards to Estimate the Priority of the Selected Automotive Parts and Components through the First Screening

<p>Group 1: Parts and components which have already been exported but need to be more competitive for further expansion of market</p> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> - Parts and components whose export value is very large
<p>Group 2: Parts and components which have the potential to be competitive in the international market</p> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> - Parts and components whose localization points are high (that is, crucial parts and components) - Parts and components whose current local content ratios are high - Parts and components of which principals are considering mutual procurement through the AICO Scheme or through their international procurement plan
<p>Group 3: Parts and components which should be localized for a further increase in localization</p> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> - Parts and components whose localization points are high (that is, crucial parts and components) - Parts and components whose current local content ratios are low

Source: The Study Team

(3) Selected Priority Parts and Components for the Development of the Automotive Parts and Components Industry

Through the two-stage screening process, priority products for the development of the automotive parts and components industry were selected as follows:

Table 4-2-25 Priority Parts and Components for the Development of the Automotive Parts and Components Industry

<p align="center">Group 1: Parts and components which have already been exported but need to be more competitive for further expansion of market</p> <hr style="border-top: 1px dashed black;"/> <p>Air Filters, Fuel Filters, Oil Filters, Clutch Facings, Shock Absorbers, Batteries, Control Cables, Electric Parts, Tires, Wiring Harnesses, Spark Plugs</p>
<p align="center">Group 2: Parts and components which have a potentiality to be competitive in the international market</p> <hr style="border-top: 1px dashed black;"/> <p>Radiators, Pistons & Piston Rings, Transmission Cases, Clutch Housings, Clutch Covers, Safety Glass, Air conditioners</p>
<p align="center">Group 3: Parts and components which should be localized for a further increase in localization</p> <hr style="border-top: 1px dashed black;"/> <p>Engine parts and components, High precision press parts, Bolts and Springs, Dies and molds</p>

Source: The Study Team

2.4.2 Direction of Development Strategies for the Automotive Parts and Components Industry

Characteristics of the selected priority automotive parts and components and their development directions are as shown on Table 4-2-26.

Table 4-2-26 Characteristics and Development Direction of the Selected Priority Automotive Parts and Components

<p>Group 1: Parts and components which have already been exported but need to be more competitive for further expansion of market</p> <p>The current export value is large. They can be said to have competitiveness in the international market at present. In order for Indonesia to be selected as a production base for principals' international mutual procurement of parts and components, an increase in competitiveness through rationalization and modernization of product systems is necessary. Activities aiming at the development of the overseas market projected by manufacturers in cooperation with the government are necessary in line with improvement of competitiveness of parts and components.</p>
<p>Group 2: Parts and components which have the potential to be competitive in the international market</p> <p>These are parts and components which have been localized substantially. For this, they have good potential of being competitive in the international market. Principals' decision for mutual procurement through the AICO Scheme or through their international procurement plan is also a very important factor to select potential parts and components. Modernization of manufacturing technology and equipment as well as further localization is necessary to be more competitive in the international market. Further improvement in reduction of costs through an increase in local procurement and added value is necessary to be competitive.</p>
<p>Group 3: Parts and components which should be localized for a further increase in localization</p> <p>These are crucial parts and components which should be localized rapidly. They are recognized as priority parts and components for localization by assemblers. Invitation of investment by superior overseas parts and components manufacturers and promotion of capital and technological collaboration between overseas manufacturers and domestic ones are effective. In addition, for the development of supporting industry, precise dies and molds technology, specific high value added casting and forging technology in addition to precise machining technology for supporting production of engine parts and components, cold rolling forging, heat treatment technology for production of precise bolts and springs, and high precision presswork technology should be developed.</p>

Source: JICA Study Team

For the development of the Group 1 parts, further development of international competitiveness is indispensable in addition to providing the full support of export promotional activities by both the government and overseas principal manufacturers.

Adoption of a moderate import duty reduction schedule for companies to develop suitable and competitive export systems should also be considered.

For the Group 2 parts, for the purpose of improving competitiveness of these parts and components by increasing local content and adding value in Indonesia, consideration of strategic import duty reduction on crucial raw materials and parts and components in addition to further development of the supporting industry is necessary.

For the Group 3 parts, invitation of excellent overseas manufacturers and establishment of a matching system for Indonesian manufacturers with overseas manufacturers for the purpose of getting technical assistance from them should be implemented. Moreover, model development projects for such technologies as precise dies and molds, specific high value added casting and forging in addition to precise machining for supporting production of engine parts and components, cold rolling forging, heat treatment for production of precise bolts and springs, and high precision presswork should be considered.

The essential manufacturing processes necessary for producing the priority automotive parts and components are metal working technology such as casting, forging and presswork. In addition, machining, plating & surface treatment and heat treatment are also necessary technologies for the second tier subcontractors and in-house processing. Needs for each priority parts and components group concerning manufacturing process improvement are as follows:

Table 4-2-27 Needs for Manufacturing Process Improvement for the Selected Priority Automotive Parts and Components

<p align="center">Group 1: Parts and components which have already been exported but need to be more competitive for further expansion or market</p> <hr/> <p>For increasing competitiveness of these parts and components in the international market, improvement of automation technology for stable quality and design technology of jigs and fixtures for efficiency is necessary for the establishment of mass production technology. As for die manufacturing and factory control technology, strengthening of rationalization technology and methods which are suitable for repeated production such as quality control, cost control and reduction of lead time in addition to rationalization of production equipment and improvement of maintenance technology is necessary.</p>
<p align="center">Group 2: Parts and components which have a potentiality to be competitive in the international market</p> <hr/> <p>Needs for improvement of casting and forging parts and components are very high for localization, and improvement of related technology is indispensable. Cost reduction of parts, above all, of material costs which occupy a large part of the total production costs is necessary for further expansion of exports.</p>
<p align="center">Group 3: Parts and components which should be localized for a further increase in localization</p> <hr/> <p>Needs for improvement of casting and forging parts and components are especially high for localization. For this, improvement of casting and forging technology is indispensable. In addition, development of the heat and surface treatment industry is necessary for localization.</p>

Source: The Study Team

2.4.3 Macro Framework for Future Development

Based on the results of the analysis of the current industry situation, its major problems and the investigation of major counter-measures for these problems, and selected priority parts and components, the macro framework of the future development policy for the automotive parts industry is proposed for each of the following 3 industry groups:

Group I: First tier parts manufacturers which directly supply parts or services to automotive assemblers. They mainly consist of foreign joint ventures or local companies having technical tie-ups with foreign manufacturers.

Group II: Second tier or third tier subcontractors which supply parts and services to Group I industries. They mainly consist of local small scale industries.

Group III: Potential second and third tier subcontractors, which currently have enough capability to serve the OEM parts manufacturers. The majority consist of very small scale local manufacturers.

Table 4-2-28 Summary of Macro Policy Framework

Current Major Problems	Short-term Policy	Middle & Long-term Policy
Group I: First tier manufacturers		
1) Technical levels are high but cost competitiveness is low due to small volume 2) Due to sudden drop of domestic demand, cost competitiveness has further weakened 3) Import duty protection is going to be taken off soon 4) Due to the installment of specialized machines, product diversification is not easy	1) Customs duty policy which gives them enough time to strengthen their product competitiveness by such measures as production concentration 2) Ease of production license or foreign ownership restriction which enables them to increase export or to change or diversify their production items 3) Export promotion support for those local firms which do not have enough export experience	1) Enhancement of international competitiveness by improving related infrastructure 2) Improvement of technical levels of workers both by training and education 3) Development of Group II industries which enhance their cost competitiveness 4) Invitation of foreign investment which targets export markets as well as the domestic market
Group II: Second and third tier subcontractors		
1) Sudden drop of domestic market demand 2) Increase in imported material costs 3) Lack of working capital	1) Marketing support which could link them with Group I industries 2) Strengthening technical capabilities 3) Strengthening marketing and management capabilities 4) Strengthening of working capital assistance programs	5) Strengthening their management and technical capabilities so that they could move further into the areas of import substitution 6) Financial and technical support in order for them to expand their service activities
Group III: Potential second and third tier subcontractors		
1) Very weak technical and management capabilities 2) Very limited and shrinking domestic market	Basically the same with Group II, however, higher emphasis should be placed on 1) local based technical and management support services, and 2) grouping them into large organizations such as cooperatives	Basically the same with Group II, however, higher emphasis should be placed on 1) local based technical and management support services, and 2) grouping them into large organizations such as cooperatives

Source: The Study Team

3. ELECTRIC AND ELECTRONIC PARTS AND COMPONENTS INDUSTRY

3.1 PRESENT SITUATION OF ELECTRIC AND ELECTRONIC ASSEMBLERS

3.1.1 Market Trend of the Electric and Electronic Industry

The Indonesian electric and electronic industry has undergone rapid expansion in recent years. According to information released by the Indonesian Ministry of Industry and Trade, the electric and electronic industry is made up of some 700 assemblers, and parts and components manufacturers. Production expanded rapidly in the latter half of the 1980's, and in 1996, the market was worth 15.77 trillion rupiah. However, in 1997, the country was beset by the currency and economic crisis, and while the production value did grow, overall investment and numbers of employees were reduced. In 1998, as the economic recession of the country continued, the number of people employed in the electric and electronic industry shrank to less than one half of that in 1997. As of 1998, the electric and electronic industry employed 12,382 people. The total production value stood at 31.57 trillion rupiah, and exports were worth US\$3.8 billion.

Apart from a very few telecommunications industries, the electric and electronic industry in Indonesia is made up almost completely of private sector companies. Export is done mainly by multinational companies, in which Japanese owned companies account for the majority.

Almost all of the large firms in the electric and electronic industry in Indonesia are members of the GEI, the Association of Electronic & Electrical Home Appliances Industries of Indonesia. According to the directory of the association for 1996-1997, there are 100 member firms; 59 assemblers and 41 parts and components manufacturers. Also, around half of the assemblers are foreign owned companies, with many Japanese companies among them. Almost all companies involved in the export of electric and electronic products from Indonesia are foreign owned companies.

Foreign owned companies can largely be divided into 1) those who market their products in Indonesia, aiming for a share of the domestic market, and 2) those that have been originally

established as an overseas production base, whose products are targeted at the market overseas. The majority of the foreign owned companies fall into the latter category, and manufacture their products in tax exempted factories that have obtained EPTE status. Against this background, while Indonesia has a population in excess of 200 million, and a huge potential demand for electric and electronic products, in comparison with neighboring countries such as Singapore, Thailand and Malaysia, the national income per person is quite low, and the domestic market for electric and electronic goods is still small.

About 80% of electric and electronic industry related companies are located in the JABOTABEK area, and in particular, many of the foreign owned companies are located in large scale industrial parks, which are equipped with good infrastructure facilities. In addition to Jakarta, in Java Island electric and electronic industry related companies are also found around the Surabaya, Yogyakarta and Bandung areas. Although foreign owned companies in the electric and electronic industry in Indonesia are mostly to be found on the island of Java, new investments have increased into Batam Island since the beginning of 1990s. Almost all of the companies who are located in the island are export oriented, and they have contributed a lot to the expansion of exports of electric and electronic products including parts and components.

Table 4-3-1 Size of the Indonesian Electric and Electronic Industry

	1989	1996	1997	1998
Total Production	Rp.1.62 trillion	Rp.15.77 trillion	Rp.17.17 trillion	Rp.31.57 trillion
Overall Investment	Rp.149 million	Rp.1,480 million	Rp.1,445 million	Rp.1,405 million
Export Value	US\$179 billion	US\$3,911 billion	US\$3,898 billion	US\$3,758 billion
Number of Employees	1,617	39,374	29,095	12,382

Source: “Laporan Kegiatan Direktorat Industri Elektronika 1998,” MOIT

3.1.2 Domestic Production Trends in the Electric and Electronic Assembly Industry

The production trends in the electric and electronic assembly industry (excluding parts and components) in Indonesia between 1992 and 1997 are shown in Fig. 4-3-2. From 4.3

trillion rupiah in 1992, production had tripled to 12.2 trillion rupiah by 1996. Production of both consumer goods and industrial goods had grown significantly, and the growth in production of consumer goods due to rapid foreign investment was particularly fast. As a result, electronic consumer goods accounted for over half of the production value of electric and electronic goods in 1996. Electronic consumer goods include color TVs, black and white TVs, VCRs, and other audio equipment. In 1997, VCRs accounted for 57% of the total figure, and had become the major production item.

Then, in 1997, Asia was beset by currency and economic crises, the effects of which stalled domestic sales and exports, causing domestic production of electric and electronic goods to fall to 9.0 trillion rupiah. In 1998, the domestic production soared to 14.2 trillion rupiah. Because of the rapid depreciation of the rupiah, however, the actual domestic production of electric and electronic goods in 1998 is considered to be less than one half of that in 1997. Not only the production of consumer products but also the production of industrial products fell sharply, affected by the stagnation in both individual consumption and companies' investments. Also, among consumer products, figures for some of the products sold mainly in the domestic market, such as washing machines, vacuum cleaners, electric fans, dishwashers, air conditioners, etc., dropped very sharply.

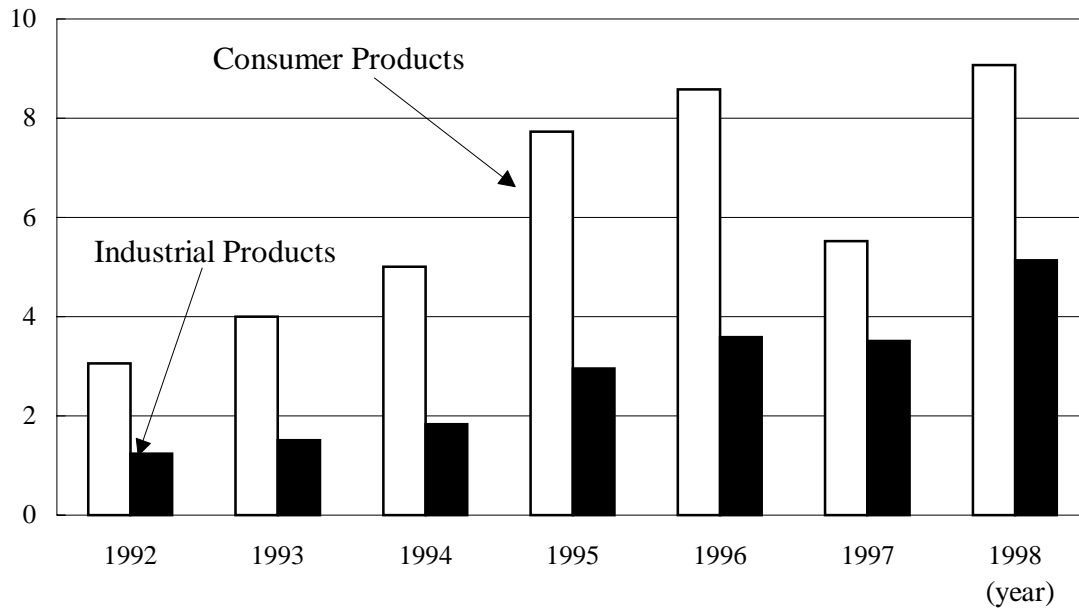
Table 4-3-2 Production Trends for Electric and Electronic Products in Indonesia

Unit: Billion Rp.

	1992	1993	1994	1995	1996	1997	1998
Consumer Products	3,060	4,005	5,006	7,735	8,584	5,520	9,074
Electronic Consumer Products	1,819	2,550	3,187	5,089	6,354	4,677	6,846
Electric Consumer Products	1,242	1,455	1,818	2,646	2,230	842	2,228
Business/Industrial Products	1,237	1,509	1,837	2,952	3,592	3,513	5,130
Telecommunications	622	496	621	900	1,739	805	2,014
Data Processing	259	363	454	793	1,026	1,085	1,004
Office Equipment	37	101	155	246	225	390	425
Industrial Equipment	8	37	64	120	99	38	38
Medical Equipment	1	2	3	7	22	64	187
Optical Equipment	168	319	280	405	359	924	1,098
Others	143	190	261	482	121	206	365
Total	4,298	5,514	6,843	10,687	12,176	9,032	14,204

Source: "Laporan Kegiatan Direktorat Industri Elektronika 1998," MOIT

Fig. 4-3-1 Production Trends for Electric and Electronic Products in Indonesia
(trillion Rp.)



Source: Table 4-3-2

3.1.3 Export Trends for Electric and Electronic Goods

Table 4-3-3 shows the trend in exports for electric and electronic goods produced in Indonesia between 1992 and 1998. During this six year period, exports grew by three times. Video equipment, audio equipment and other consumer goods grew by an outstanding 3.8 times in the same period. These figures demonstrate that the country is developing rapidly as an export base for electric and electronic goods. However, the drop in exports between 1997 and 1998 is likely due to 1) reduced demand following the stagnation of the Asian economies and 2) a worldwide glut of electric and electronic goods.

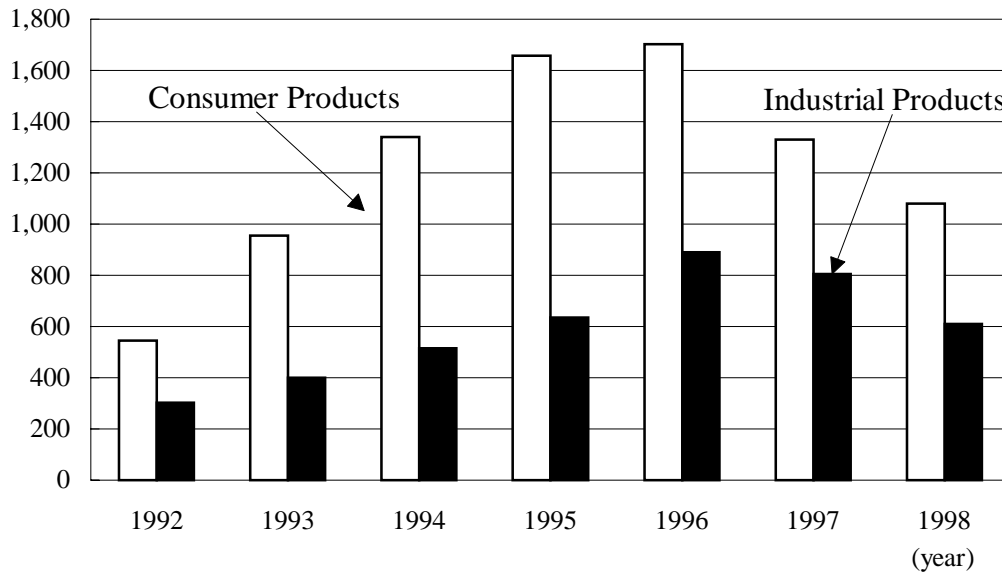
Table 4-3-3 Export Trends for Electric and Electronic Goods in Indonesia

	Unit: Million US\$						
	1992	1993	1994	1995	1996	1997	1998
Consumer Products	545	955	1,340	1,658	1,704	1,330	1,080
Electronic Consumer Products	384	742	1,088	1,364	1,467	1,119	815
Electric Consumer Products	161	213	251	295	237	211	265
Business/Industrial Products	303	399	515	635	890	804	610
Telecommunications	55	64	86	72	218	178	240
Data Processing	106	102	128	207	407	270	119
Office Equipment	13	21	68	85	71	92	51
Industrial Equipment	1	3	27	17	20	11	4
Medical Equipment	0	1	1	4	5	16	22
Optical Equipment	69	149	113	122	120	196	131
Others	60	60	92	129	49	42	43
Total	848	1,354	1,855	2,293	2,594	2,134	1,691

Source: "Laporan Kegiatan Direktorat Industri Elektronika 1998," MOIT

Fig. 4-3-2 Export Trends for Electric and Electronic Goods in Indonesia

(million US\$)



Source: Table 4-3-3

Table 4-3-4 shows the trends in exports for the whole electric and electronics industry, including parts and components, from 1992 to 1998. Exports increased by 3.3 times in this period, while imports dropped by 39.7%. It is worth noting that exports, which were less than half the size of imports in 1992, had outstripped imports by 1996. Since 1996, export

figures have exceeded imports, and trade figures for electric and electronic goods and parts and components have remained in the black. Domestically produced electric and electronic goods have begun to shift away from traditionally labor intensive goods to more added value goods. As a result, the electric and electronics industry has become an important source of foreign capital, as a major export industry.

Table 4-3-4 Export Trends for Electric and Electronic Goods, and Parts and Components in Indonesia

Unit: Million US\$

	1992	1993	1994	1995	1996	1997	1998
Export	1,154	1,755	2,596	3,254	3,911	3,898	3,758
Consumer Products	545	955	1,340	1,658	1,704	1,330	1,080
Business/Industrial Products	304	399	515	635	890	804	611
Components and Parts	306	401	741	960	1,318	1,458	1,553
Others	-	-	-	-	-	306	514
Import	2,751	3,251	3,045	3,728	3,617	3,637	1,657
Consumer Products	132	122	144	258	320	363	232
Business/Industrial Products	1,475	1,611	1,447	1,671	1,646	1,804	845
Components and Parts	1,144	1,518	1,454	1,800	1,651	1,470	579
Total Trade	3,905	5,006	5,641	6,982	7,528	7,535	5,415

Source: "Laporan Kegiatan Direktorat Industri Elektronika 1998," MOIT

3.1.4 The Effects of the Currency and Economic Crisis

Most seriously affected by the currency and economic crisis in Indonesia were the companies producing household electric appliances for the domestic market. Following the crisis, prices of imported raw materials soared, forcing an increase in the price of the end product, but consumers are reluctant to buy, having suffered the effects of the economic stagnation. As a result, not only sales of big ticket household appliances, such as color TVs, air-conditioners, refrigerators and washing machines, but also sales of inexpensive products, such as electric fans, hair dryers, electric irons, and audio equipment, have dropped significantly. Table 4-3-5 shows comparison of the production figures for Company S, a manufacturer of household electric appliances, before and after the currency and economic crisis.

As the example shows, the operation ratio of manufacturers of household electric and electronic goods fell to about 20 to 30% of their production capacity. In order to increase the operation ratio of plant and equipment, some firms are attempting to take products that were previously targeted at the domestic market and redirect them for export. However, these products tend to lack international competitiveness, and due to the worldwide glut of electric and electronic goods, it will be extremely difficult to recover sales through exports.

Most parts and components manufacturers that are foreign affiliated and have been able to obtain EPTE status, and which export the large majority of their products overseas, while they have suffered the effects of the overall Asian economic stagnation to some degree, have largely escaped the effects of the Indonesian currency and economic crisis. Indeed, there are many whose factory operation ratios are 100%. In addition, these companies, through the heavy devaluation of the rupiah, have been able to cut labor costs, and are strengthening their price competitiveness in the international market.

On the other hand, Indonesian local parts and components manufacturers that are mainly engaged in the production of rather simple products, such as PCBs, metal parts and plastic parts, have been severely affected by the currency and economic crisis. Their sales dropped sharply after the crisis, as prices of imported raw materials soared and the domestic demand for parts and components decreased as a result of the recession. Especially, financially unstable small scale companies, who do not have strong linkage with assemblers, are forced to stop operation.

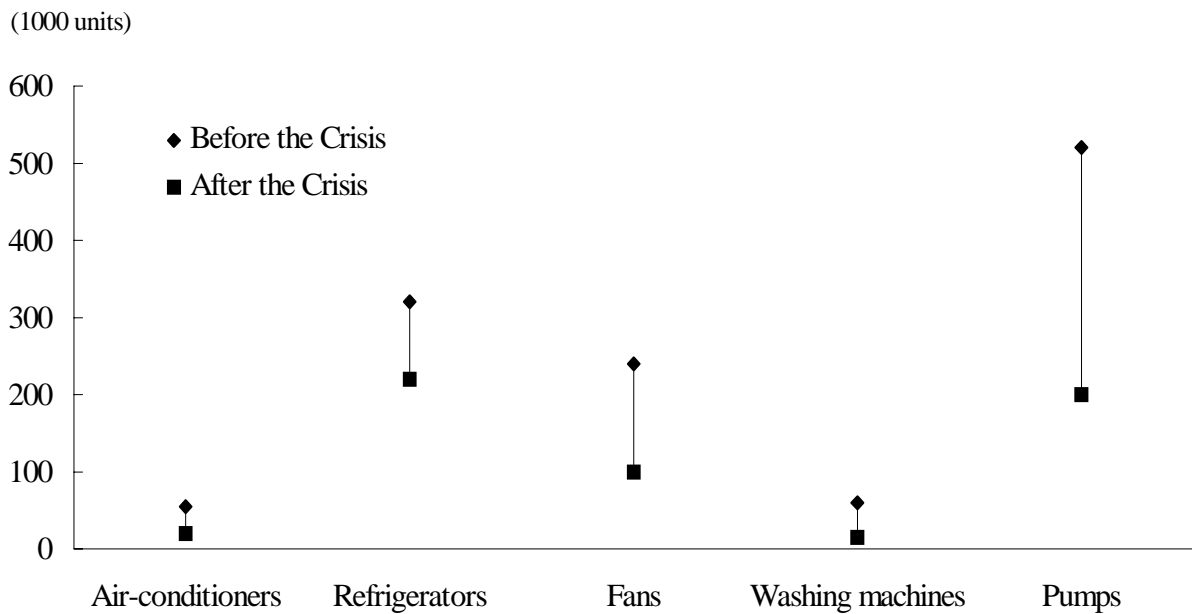
Table 4-3-5 The Effects of the Currency and Economic Crisis on Household Electric Appliance Manufactures (Company S)

Unit

Product	Before the Crisis	After the Crisis
Air-conditioners	55,000	20,000
Refrigerators	320,000	220,000
Fans	240,000	100,000
Washing machines	60,000	15,000
Pumps	520,000	200,000

Source: "Interview Survey," The Study Team (December 1998)

Fig. 4-3-3 The Effects of the Currency and Economic Crisis on Household Electric Appliance Manufactures (Company S)



Source: Table 4-3-5

3.1.5 Demand Forecast for The Electric and Electronic Industry

Table 4-3-6 shows the domestic demand and diffusion for major household electric goods between 1992 and 1997, as compiled by the Jakarta Japan Club. While the demand itself has for most products more or less doubled, the rate of diffusion is still low, with the highest being for color TVs, at 26%, and air-conditioners a mere 4%. This indicates the existence of a huge potential demand, and while the currency and economic crisis mean that there is little prospect of expanded demand in the short term, once the country's economy gets back on track, there is a very real possibility that demand will soar.

**Table 4-3-6 Flow of Domestic Demand and Diffusion for
Major Household Electric Goods**

Unit: Thousand Units

Product		1992	1993	1994	1995	1996	1997
Color TVs	demand	1,000	1,200	1,450	1,700	1,800	2,000
	diffusion	7%	11%	14%	18%	22%	26%
Radio cassette Players	demand	790	820	850	1,000	1,300	1,500
	diffusion	17%	19%	20%	20%	22%	23%
Refrigerators	demand	340	380	450	550	630	650
	diffusion	8%	9%	10%	11%	11%	12%
Air-conditioners	demand	150	170	190	220	270	280
	diffusion	3%	3%	3%	4%	4%	4%

Source: "Indonesia Handbook 1998," Jakarta Japan Club

3.1.6 Domestic Parts Supply in the Electric and Electronics Assembly Industry

The domestic supply rate for parts for electric and electronic companies has risen dramatically in the last few years. As shown in Table 4-3-7, for example, the domestic supply ratio for speakers had reached 75%, and that for small color TVs 60%. Further, with integrating wattmeters, major parts and components are produced in-house, and when these are factored in, the localization ratio increases to 96%. As a background to the

increase in the domestic supply ratio of parts and components, following the establishment of assemblers, there is the rapid spread of foreign electric and electronic parts and components companies into Indonesia, from the latter half of the 1990s. This means that the majority of parts and components supplied locally are manufactured and supplied by foreign owned parts manufacturers. However, even these domestically produced parts and components are made from raw materials such as metals and plastic resins that are practically all imported.

There are very few local manufacturers that are producing electric and electric parts and components. Also, the parts and components are only the most simple plastic molded and press molded parts. Almost all of the molds used in plastic injection molding are supplied by assemblers. This situation has remained virtually unchanged for the last three years.

Table 4-3-7 Examples of Domestic Supply

Company	Major Production Item	Domestic Procurement Ratio	Major Parts and Components Procured Domestically
A	Headphone stereo	15 ~ 16%	Plastic case, Plastic injection parts, Metal press parts
F	Wattmeter	32%	Metal press parts, Plastic injection parts
K	VCR	25%	Packaging, PCB, CRT, Aluminum capacitor, Transformer coil, Wire-harness, Metal press parts, Plastic injection parts, Printed material
P	Speaker	75%	Metal press parts, Plastic injection parts, Plating
T	Color TV (14/20 inches)	60%	PCB, Antenna, Plastic cabinet, Packaging, Solder, Screw, Wire-harness, Degaussing coil

Source: "Interview Survey," The Study Team (December 1998)

3.1.7 Issues Facing the Electric and Electronics Assembly Industry, and Their Solutions

Issues facing the electric and electronics assembly industry which were identified during the course of this research, and the countermeasures taken by the assemblers, are described

below.

(1) Parts supply from local manufacturers

- i. Fluctuations in the rupiah based prices of parts and components are quite large. Prices of raw materials also fluctuate widely, due to changes in the exchange rate.

Countermeasures: i) Supply raw materials. ii) Change the contract quotation to US dollars.

- ii. In the case of local manufacturers, i) L/C cannot be opened, ii) the costs of raw materials have skyrocketed, and iii) the interest on loans is extremely high. These and other factors mean that local manufacturers find it next to impossible to obtain raw materials.

Countermeasures: i) Supply raw materials. ii) Dispense with guarantees, etc., when local firms purchase raw materials.

- c. In the case of local manufacturers, in addition to not being able to obtain raw materials, strikes by workers and other actions mean that it is difficult to guarantee a secured job for labor force, and delays in delivery of parts and components are particularly noticeable.

Countermeasures: i) Evaluate subcontractors in terms of their delivery track record, quality, prices, etc., and cease dealings with those companies that have unacceptably large numbers of problems. ii) For vital parts and components, production should switch to in-house production. iii) Also, a certain amount of inventory needs to be maintained in preparation for emergencies.

(2) Blunting of domestic demand

As a result of the drop in domestic consumption, sales of household electric goods have dropped significantly. Also, with cuts in government finances, orders for goods

for government and municipal agencies have also dropped.

Countermeasures: i) Redirect products targeted for the domestic market to export. However, price competition in the international market is becoming ever more severe. Also, there are only limited ways in which export markets can be expanded. ii) In the case of foreign owned companies, part of the goods can be taken on by the parent company. iii) Switch production to goods with greater sales prospects.

(3) Supply of working capital and plant investment capital

i. For Japanese affiliated assemblers, the credit crunch among Japanese and other financial institutions has become quite severe, meaning that it is difficult to secure sufficient operating capital.

Countermeasures: i) By obtaining capital from overseas financial cooperation institutions, financing from private banks should be expanded. ii) Capital shortages are to be compensated for with increased borrowing from parent companies.

ii. For local assemblers, the current borrowing rate on the rupiah is too high. This means that it is practically impossible to make business management plans.

Countermeasures: Under the current economic circumstances, there is only a limited demand for funds for new plant investment. Firms will need to wait until the economic situation and market conditions recover, and the interest comes down to around 20 to 30%.

3.2 PRESENT SITUATION OF ELECTRIC AND ELECTRONIC PARTS AND COMPONENTS MANUFACTURERS

3.2.1 Market Trend of the Electric and Electronic Parts and Components Industry

Electric and electronic parts and components which are manufactured in Indonesia include such items as PCBs, CRTs, wire-harnesses, capacitors, transformers and semiconductors. Also manufactured in Indonesia are mechanical components that require quite a high level of technical engineering. However, such parts and components are invariably manufactured by Japanese or other foreign owned companies, and purely Indonesian production of electric and electronic parts and components is very limited. Further, the raw materials for the products manufactured by foreign firms, such as metal plates, copper wire, plastic resin and chemical products, are mostly imported.

Local companies tend to lack technology, equipment, capital and human resources, etc., so that it is difficult for them to produce parts and components that meet the requirements of assemblers, in terms of quality, delivery and price. In particular, after the currency and economic crisis, there was a sudden drop in sales volume, followed by a credit crunch at the banks and higher interest rates, so that the number of local businesses that find themselves unable to continue operation has increased.

The electric and electronic parts and components industry in Indonesia has developed along with the export industry. There is also an increasing number of multinational companies that are moving their factories to this country, rather than Singapore or Malaysia, where labor costs have increased dramatically. These companies see the electric and electronic industry in Indonesia as a base for exports to Asia and the rest of the world, and are aiming at expansion of production.

3.2.2 Domestic Production Trend in the Parts and Components Industry

The production trend for the parts and components industry from 1992 to 1998 is shown in

Table 4-3-8. Total domestic production was 0.9 trillion rupiah in 1992, and grew to approximately 14 times that, or 13 trillion rupiah, by 1998. The rapid growth in terms of rupiah value was mainly due to the rapid depreciation of the rupiah in 1997 and 1998. Therefore, the actual output of the industry is thought to have been stable in the last few years.

The rapid growth of the parts and components industry followed the explosive growth of the assemblers, since their introduction in the 1990s. In the 1990s, as part of a program to invigorate exports of non-oil and gas products, restrictions on parts and components were relaxed or abolished, resulting in very active investment in Indonesia by multinational companies. In 1994, 100% foreign capitalization was permitted, resulting in a dramatic increase in domestic and foreign investment in the electric and electronic industry. Then, along with the rapid increase in the number of assemblers, the number of parts and components manufacturers also increased. The increase in the overall demand in domestic parts and components was followed by the acceleration in investment by foreign parts and components manufacturers.

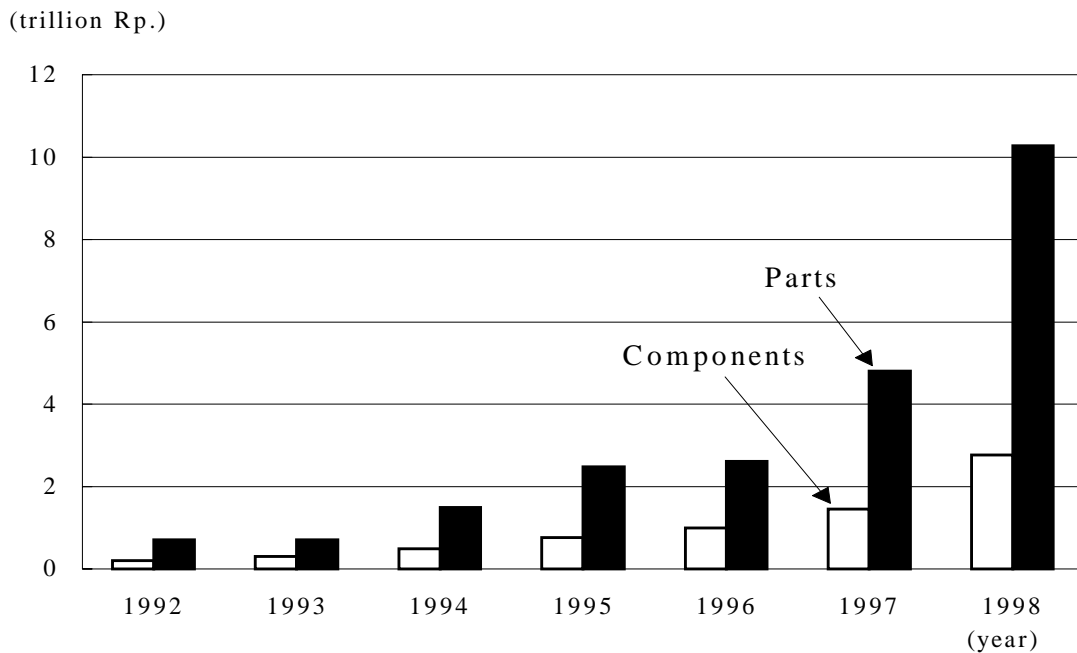
**Table 4-3-8 Production Flow of Electric and Electronic
Parts and Components in Indonesia**

Unit: Billion Rp.

	1992	1993	1994	1995	1996	1997	1998
Components	199	307	490	762	984	1,443	2,766
Active Components	130	102	234	357	585	851	1,778
Passive Components	69	205	256	404	399	592	989
Parts	707	704	1,490	2,483	2,613	4,800	10,279
Electromechanical Parts	205	227	429	708	761	1,110	2,485
Specific Parts	502	477	1,061	1,775	1,853	3,690	7,794
Total	906	1,011	1,980	3,244	3,598	6,243	13,045

Source: "Laporan Kegiatan Direktorat Industri Elektronika 1998," MOIT

Fig. 4-3-4 Production Flow of Electric and Electronic Parts and Components in Indonesia



Source: Table 4-3-8

3.2.3 Export and Import Trends for Electric and Electronic Parts and Components

Table 4-3-9 shows the export and import figures for electric and electronic parts and components, from 1992 to 1998. In these years, exports increased by 5.1 times, while imports decreased by some 50%. The growth in exports is particularly noticeable, and exports of parts and components had grown to some 41.3% of the total export value of electric and electronic goods and parts and components by 1998.

As can be seen from the breakdown of exported parts and components, in addition to the traditional power supply transformers, connectors, speakers and antennae, etc., exports of more added value parts and components, such as CRTs, PCBs, ICs, and crystal oscillators, have increased rapidly. The electric and electronic parts industry has become more advanced, due to the emergence of foreign owned firms, and is developing as an export industry. In particular, even during 1997 and 1998, which saw the currency and economic crises, exports of electric and electronic parts and components continued to increase, and

helped to support sagging domestic demand.

On the other hand, imports of electric and electronic parts and components peaked in 1995, and then began to decrease after that. This was partly because many parts and components that had hitherto been imported were now being supplied domestically. Also, in 1997 and 1998, the value of imports shrank by 11.0% and 60.6%, respectively, from the previous years. This is believed to be a temporary phenomenon, brought about by a reduction in the numbers of parts and components required for electric and electronic goods for the domestic market. Parts and components that require sophisticated manufacturing techniques, or whose domestic manufacture would increase overall costs, are still likely to depend on imports, and it is expected that when Indonesia's economy begins to recover, imports will once again begin to post healthy increases.

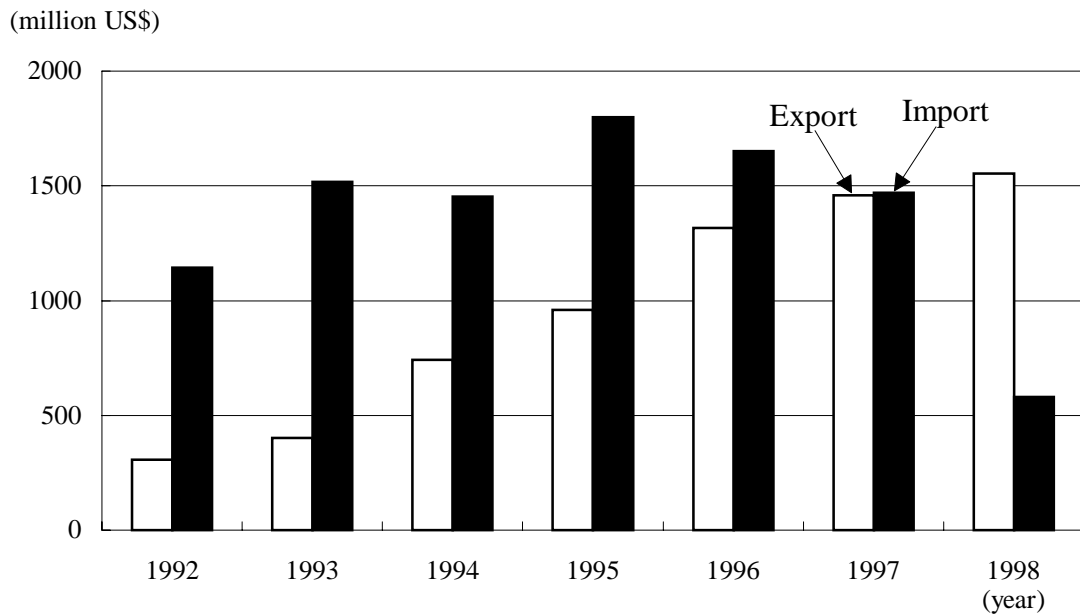
Table 4-3-9 Export and Import Figures for Electric and Electronic Parts and Components

Unit: Million US\$

	1992	1993	1994	1995	1996	1997	1998
Export	306	401	742	960	1,318	1,458	1,553
Components	87	113	190	242	343	347	329
Active Components	61	49	106	140	212	207	212
Passive Components	27	64	84	103	130	140	118
Parts	219	288	552	718	975	1,112	1,224
Electromechanical Parts	48	104	161	192	272	258	296
Specific Parts	171	184	390	527	703	854	928
Import	1,144	1,518	1,454	1,800	1,651	1,470	579
Components	392	542	594	670	496	432	178
Active Components	192	303	328	396	336	218	109
Passive Components	200	239	266	273	159	214	69
Parts	752	976	860	1,130	1,156	1,037	401
Electromechanical Parts	167	329	270	435	428	280	82
Specific Parts	585	646	590	696	727	757	319

Source: "Laporan Kegiatan Direktorat Industri Elektronika 1998," MOIT

Fig. 4-3-5 Export and Import Figures for Electric and Electronic Parts and Components

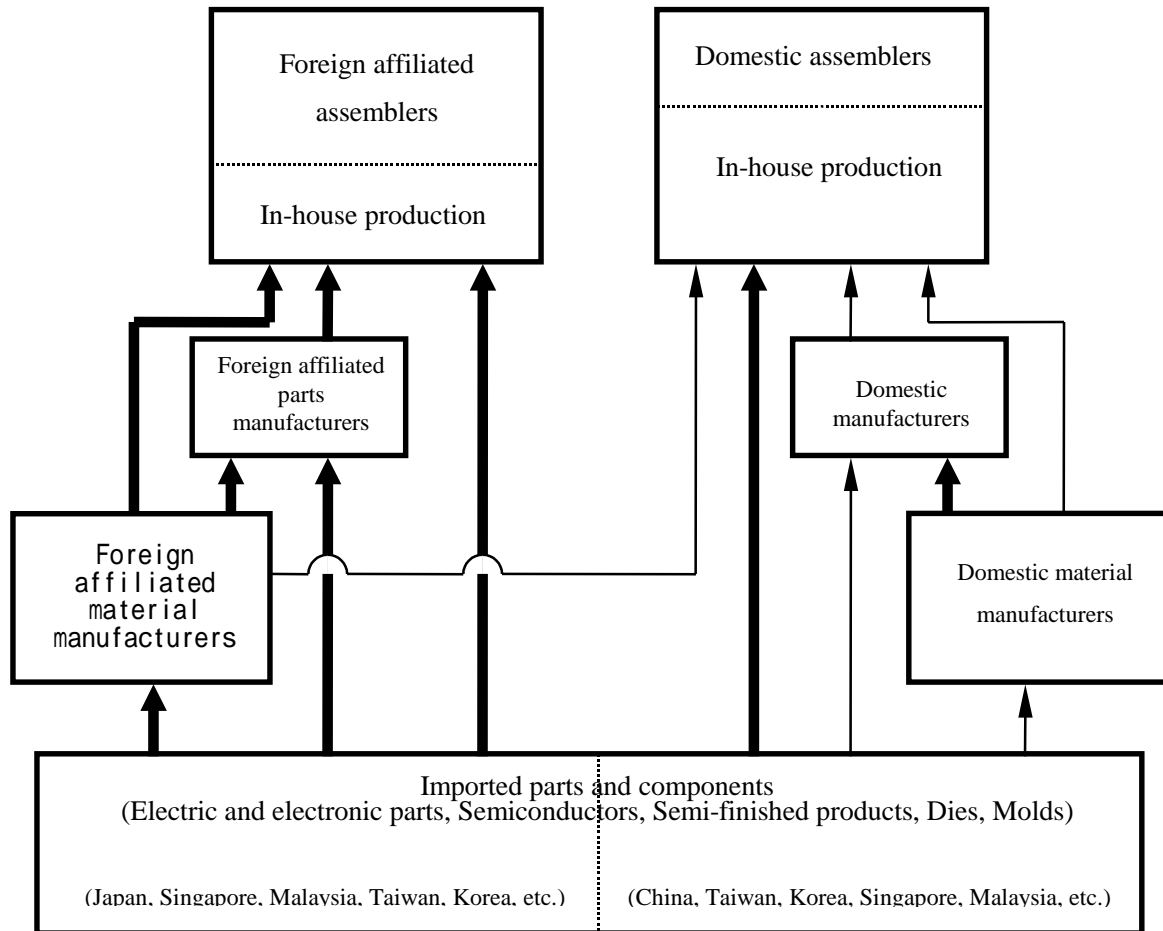


Source: Table 4-3-9

3.2.4 Structure of the Electric and Electronic Parts and Components Industry

The structure of the electric and electronic parts and components industry in Indonesia, in the same way as the electric and electronic assembler sector, is largely divided into foreign affiliated companies, including joint ventures with foreign capital, and local companies. Moreover, almost all assemblers are promoting the in-house production of parts and components. In particular, there are many local assemblers which have an in-house parts and components production rate of close to 100%.

Fig. 4-3-6 Image Drawing of the Structure of the Electric and Electronic Parts and Component Industry



Note: **—————>** Strong relationship; **—————>** Weak relationship

Almost all foreign affiliated electric and electronic parts companies operate tax exempted factories; therefore, almost all of them import raw materials and microchips by utilizing special tariff exemptions. These companies often import from technically advanced countries, such as Japan, Singapore and Malaysia. Even when such materials and microchips are procured within Indonesia, it is mostly from foreign affiliated companies. Moreover, concerning plastic moldings and press forming products that are sometimes used, these are either produced in-house or are purchased from foreign affiliated molding and forming companies, and only rarely are they purchased from local companies

As for the local parts and components industry, there are only a few companies which produce single item parts. It is more common for companies to produce PCB-based semi assembling

products and components as well as finished products. Moreover, many local assemblers carry out in-house production of majority of parts and adopt integrated production setups for making finished products. Doing this enables such companies to control quality and prevent variations and allows them to independently procure cheap materials and parts from numerous sources, thus allowing them to reduce costs.

Disparities from the top to the bottom of the local parts and components industry in Indonesia are large. At the so-called electronics village known as Kuningan, five small enterprises (there were previously 26 before the crisis) produce capacitors, PCBs, resistors, transformers, audio equipment, AC adapters, etc. However, these companies largely rely on manual work and the reliability of their product quality is considered to be low. For example, transformer insulation wires are wound on by hand and the fitting and soldering of electronic microchips to PCBs is also carried out manually. In addition, production volume is very small, that the rapid development of the industry cannot be expected.

In contrast, there are fairly advanced local companies. A telecommunications equipment maker in Bandung carries out all its own work, starting from the design of PCB circuits through to the 100% inspection of components, assemblies and finished products. In response to the contraction of the domestic market, this company has put advertisements in Hong Kong industry publications and has started exporting to Malaysia, among other steps.

3.2.5 Relationship between the Electric and Electronic Parts Industry and Assemblers

A typical example of the procurement of assemblers from the electric and electronic parts industry in Indonesia, in terms of products and parts, is illustrated in Table 4-3-10.

Since most foreign affiliated assemblers are export-oriented, products must satisfy international standards. Accordingly, it is necessary for raw materials, parts and components to comply with the same standards. The parts and products sold on the domestic market by local assemblers, excluding the few export-oriented assemblers, show great disparities from the above parts and products in terms of performance, external appearance and finishing

quality, etc.

Having said that, within the local parts industry, for example some die and mold makers and a certain telecommunications equipment maker, have a healthy challenger spirit and are intent on pursuing technical development. Such companies have made progress over the past three years and have not felt the effects of the recession as much as others. In the future, such advanced companies should be regarded as model enterprises and be fostered as leaders of the supporting industry through the support on their technical development, equipment installation, etc., in the manner shown in Fig. 4-3-7. Such companies could then be used to foster other related enterprises. As is shown in this way, it is thought that it takes time to develop reliable supporting industries in the electric and electronic parts industry in Indonesia.

Fig. 4-3-7 Model for Fostering the Electric and Electronic Parts Industry

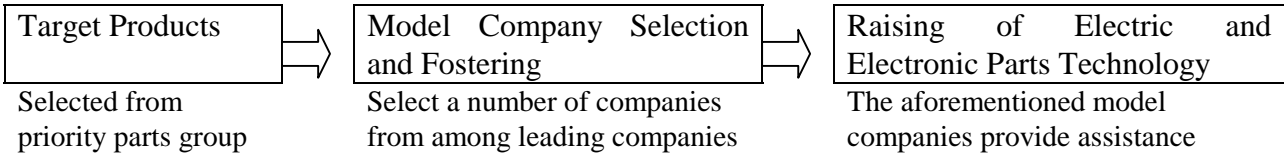


Table 4-3-10 Typical Cases of Procurement of Electric and Electronic Parts

Field	Target Product	Raw Materials, Parts, Components, etc.	Method of Manufacture and Procurement	
			Foreign Affiliated assemblers	Local Assemblers
Electric Product and Domestic Electrical Appliances	Color TVs	Plastic materials, Plastic cabinets, Components Metal parts, Electronic Parts, Small plastic parts	Imports/Some local purchasing Japanese affiliates /some local injection molding (but mold are imported) Mostly in-house production, importing and purchasing from Japanese affiliates Molding by Japanese affiliates (models are imported) Imports /Some purchasing from Japanese Affiliates Japanese affiliates/some local injection molding	Imports/local Companies Mostly in-house production/Some local molding (but molds are imported) Mostly in-house production (parts are imported), Mostly in-house production /some local molding Imports (Singapore, Malaysia, etc.), Mostly in-house production/some local molding
Electric Product and Domestic Electrical Appliances	Irons	Plastic parts Die cast parts Press forming products Heating elements Insulators Small parts (Switches, etc.)	Local molding (molds are imported), Die cast parts Local press forming (dies are imported) Imports (Japan) Imports (Japan) Local press forming (dies are imported)	In-house production (mold are also produced in house) In-house production (molds are also produced in-house) In-house production (dies are also produced in-house) Imports (Thailand, Japan) Imports (Japan) (Processing is in house) In-house production (dies also produced in-house)
Electric Product and Domestic Electrical Appliances	Electric Fans	Plastic bodies Press forming parts Plastic fans Motors Small parts (switches, etc.) Electronic equipment and parts, etc. Guard nets	Local Production (molds are imported) Local Production (dies are imported) Local Production (molds are imported) In-house production (molds are imported) In-house production (automated) or imports Imports (Japan, Singapore) In-house production (automated)	In-house production (molds are imported or produced in-house) In-house production (dies are imported or produced in-house) In-house production (molds are imported or produced in-house) Imports (Taiwan) In-house production (dies are imported are produced in-house) Much equipment is not attached Local or in-house production (manual)

Table 4-3-10 Typical Cases of Procurement of Electric and Electronic Parts (continued)

Field	Target Product	Raw Materials, Parts, Components, etc.	Method of Manufacture and Procurement	
			Foreign Affiliated assemblers	Local Assemblers
Electronic Equipment	Microwave Ovens	Cabinets Circuit design PCBs Components Transformers Electronic parts and elements	Sheeting metal forming is ordered locally In-house production (software is independently developed) Imports/Some purchasing from foreign affiliates Imports (Japan, Singapore) Imports (Japan, Singapore) Imports (Japan, Singapore)	Sheeting metal forming is ordered locally In-house production (software development also) Purchased locally and assembled in-house Imports (some purchased locally) Purchased locally (Bandung) Imports (Singapore, Malaysia)
	Computers	Plastic Cabinets Circuit design PCBs Components Electronic parts and microchips	Local press forming (dies are imported) In-house production Imports (Singapore) Imports (Singapore) Imports (Singapore)	Local press forming (dies are imported) Not possible Imports (China, Taiwan) Imports (China, Taiwan) Imports (China, Taiwan)

3.2.6 Analysis of Current Electric and Electronic Parts and Components Industry Seen from the Questionnaire Survey Results

In parallel with the field interview survey, Study Team conducted a questionnaire survey of the three target sectors, from December, 1998 to February, 1999. In the electrical and electronic parts and components industry, 88 companies responded to the questionnaire. The survey results are as described below.

(1) Overview of Surveyed Companies

a. Locations of surveyed companies

Table 4-3-11 shows the locations by region of the 80 companies from the electrical and electronic parts and components industry that responded to the questionnaire survey. The

locations of the industry are concentrated geographically as shown in the table. Forty-seven companies, 59% of the total, are situated in JABOTABEK which spreads around Jakarta as its center, and there is a high level of concentration in that area. One of the main reasons for this is that many electric and electronic goods assemblers are also concentrated in JABOTABEK. Another reason is that the industrial infrastructure, such as electricity, roads and ports is well developed in the area. Outside of Java island, there are six companies on Batam. Since the whole island of Batam is designated as tax-exempt, these companies are considered to be export oriented.

Table 4-3-11 Geographical Distribution of Supporting Industries

Unit: No. of companies

	JABOTABEK	West Java	Central Java	East Java	North Sumatra	Batam	Others
Number of Companies	47	5	9	13	0	6	0

Source: "Questionnaire Survey," The Study Team

b. Size of Companies

Table 4-3-12 gives a breakdown of the surveyed companies according to the number of employees. Companies with 300 or more employees numbered 32, which is 36% of the total, and the largest proportion. Companies with 19 or fewer employees and those with 20 to 99 employees numbered 13 and 20. Most of them are Indonesian domestic companies. As can be seen from these results, when viewed by number of employees, companies in the electric and electronic parts and components industry tend to be polarized into either large, mainly foreign affiliated companies, or small to medium, mainly local companies.

Table 4-3-12 Breakdown of Companies by Number of Employees

Unit: No. of companies

	19 or fewer	20 to 99	100 to 299	300 or more	No Response
Number of Companies	13	20	14	32	9

Source: "Questionnaire Survey," The Study Team

(2) Impact of the currency/ economic crisis

a. Impact on business

Table 4-3-13 provides a summary of the impact of the currency/ economic crisis on the business of companies in the electrical and electronic parts and components industry. Only one company reported that there had been a favorable effect. Of the 88 companies surveyed, 84 responded that they had experienced some kind of effect. Among them, those who reported 'very serious' numbered 34, or 39% of the total, and the largest portion. With 45% of the local companies compared to 28% of the foreign affiliated companies indicating 'very serious,' local companies have felt a larger impact of the currency/ economic crisis. As background to these responses is the fact that many of the local companies were considered to be domestic market oriented and suffered sluggish sales from the depressed domestic demand, while many of the foreign affiliated companies were export oriented and were thus less severely affected by the depressed domestic demand.

There were no particularly outstanding differences between the responses of companies whose main business is domestic sales, and those concentrating on exports. It is likely that those involved in domestic sales felt the impact of the stagnation of the Indonesian economy, and those involved in exports felt the impact of the economic stagnation in the Asian region. When viewed by workforce size, of the 30 companies who responded that the impact was 'very serious,' 16 had 99 or fewer employees, and it would appear that, in general, the smaller scale companies have been more seriously impacted by the currency/ economic crisis than larger companies have.

Table 4-3-13 Impact on Business of the Currency/ Economic Crisis

Unit: No. of companies

		Impact of the Currency and Economic Crisis				
		Very Serious	Serious	Some	No Impact	Good
Total Respondents		34	26	24	3	1
Capital	Domestic	25	15	14	1	1
	Foreign Affiliated	9	11	10	2	0
Sales	Domestic	17	13	7	1	0
	Export	17	13	17	2	1
Number of Employees	19 or few	7	2	3	1	0
	20 to 99	9	6	4	0	1
	100 to 299	6	3	4	1	0
	300 or more	8	12	11	1	0

Source: "Questionnaire Survey," The Study Team

b. Impact on corporate profits

The effect of the crises on business can be seen in the form of reduced corporate profits. As shown in Table 4-3-14, of the 77 companies that responded, 62, or 81% of the total, reported reduced corporate profits. In particular, 84% of the local companies reported reduced corporate profits, while 75% of the foreign affiliated companies reported reduced corporate profits. From the responses, it is assumed that foreign affiliated companies experienced less impact of the currency/ economic crisis because many of them had stable sales channels and they had received various kinds of support from their parent companies. More than half of the companies whose main business is domestic sales or those concentrating on exports responded less corporate profits. In particular, 6 companies who responded that profits had increased were all those involved in exports. On the contrary, none of those involved in the domestic market reported an increase in corporate profits.

Table 4-3-14 Impact of Currency/ Economic Crisis on Corporate Profits

Unit: No. of companies

		Change in Corporate Profits		
		Decrease	No Change	Increase
Total Respondents		62	9	6
Capital	Domestic	41	4	4
	Foreign Affiliated	21	5	2
Sales	Domestic	30	3	0
	Export	32	6	6
Number of Employees	19 or few	9	3	0
	20 to 99	15	0	2
	100 to 299	10	2	0
	300 or more	22	4	4

Source: "Questionnaire Survey," The Study Team

c. Impact on domestic sales

Table 4-3-15 summarizes the impact of the currency/ economic crisis on domestic sales. Of 80 companies that responded to this item, 67 companies, or 84% of the total, reported that domestic sales had declined. Broken down by capital ownership, 86% of the domestic companies and 79% of the foreign affiliated companies reported a decrease in domestic sales. By workforce size, 81% of those with 300 or more employees, and 88% of those with 99 or fewer employees responded that domestic sales were lower, which indicates that there is not a noticeable difference between the responses according to the size of the companies.

Table 4-3-15 Impact of the Currency/ Economic Crisis on Domestic Sales

Unit: No. of companies

		Change in Domestic Sales		
		Decrease	No Change	Increase
Total Respondents		67	11	2
Capital	Domestic	44	6	1
	Foreign Affiliated	23	5	1
Sales	Domestic	33	3	0
	Export	34	8	2
Number of Employees	19 or few	11	2	0
	20 to 99	18	1	1
	100 to 299	9	2	1
	300 or more	22	5	0

Source: "Questionnaire Survey," The Study Team

d. Impact on exports

Table 4-3-16 summarizes the effect of the currency/ economic crisis on exports. In comparison with the impact on domestic sales, the impact on exports is less. The exports of 54% of the total companies decreased, while 21% increased. In the case of foreign affiliates, there were roughly equal numbers of companies that reported that exports were down (14 companies), and those that reported that exports were up (13 companies). Overall, there is only a slight negative impact of the currency/economic crisis. In the case of domestic companies, also, 8 companies reported that exports had increased. For these companies, the crisis worked positively to increase exports.

There were 11 companies who reported their exports had increased. The main reasons for increased exports are i) the increased international competitiveness of goods, due to the substantial devaluation of the rupiah, and ii) reduced production costs, such as labor and utilities, etc., in dollar based amounts. It was made clear through the Study that many companies that are exporting manage their internal costs in dollars, and therefore the depreciation of the rupiah had a positive effect in terms of lowering costs.

Table 4-3-16 Impact of Currency/ Economic Crisis on Exports

Unit: No. of companies

		Change in Exports		
		Decrease	No Change	Increase
Total Respondents		28	13	11
Capital	Domestic	14	3	8
	Foreign Affiliated	14	10	3
Sales	Domestic	-	-	-
	Export	20	12	10
Number of Employees	19 or few	4	0	0
	20 to 99	2	1	2
	100 to 299	3	3	3
	300 or more	15	8	5

Source: "Questionnaire Survey," The Study Team

e. Countermeasures

Table 4-3-17 provides a summary of the countermeasures taken in response to the currency/ economic crisis. Of the 86 companies that responded to this item, 53%, or 46 companies, indicated 'development of new export markets'. On the other hand, only 29 companies mentioned 'development of new domestic markets,' and 27 cited 'diversification of products.' This would indicate that, faced with a drastic drop in domestic demand, the majority of companies in the electric and electronic parts and components industry have chosen to try to find a way out of their difficulties by turning to exports. However, by capital ownership, only 45% of the domestic companies, in comparison with 70% of the foreign affiliates, responded 'development of new export markets,' indicating that the development of new export markets is especially difficult for the domestic companies.

One half, 43, of the companies indicated 'workforce reduction' as a response to the currency/economic crisis. In particular, most of the companies that opted to reduce their workforce were local companies who lacked management resources, adopting a retrogressive response to declining sales.

Table 4-3-17 Countermeasures in Response to the Currency/ Economic Crisis

Unit: No. of companies

		Answer							Effective Respondents	
		Development of New Domestic Markets	Development of New Export Markets	Diversification of Products	Temporary Operation Stop	Workforce Reduction	Request for Support from Parent Companies	Request for support from Banks		Others
Total Respondents		29	46	27	10	43	16	10	9	86
Capital	Domestic	21	25	20	8	32	6	8	8	56
	Foreign Affiliated	8	21	7	2	11	10	2	1	30
Sales	Domestic	17	14	16	8	22	7	4	5	38
	Export	12	32	11	2	21	9	6	4	48
Number of Employees	19 or few	4	2	6	0	8	0	0	3	13
	20 to 99	9	11	8	4	11	3	6	2	20
	100 to 299	5	7	4	3	8	4	0	0	14
	300 or more	9	20	7	2	11	9	4	3	30

Source: "Questionnaire Survey," The Study Team

3.3 ISSUES AND REQUIRED IMPROVEMENTS IN THE ELECTRIC AND ELECTRONIC PARTS AND COMPONENTS INDUSTRY

3.3.1 Technical Issues and Required Improvements

(1) Technical Issues

The electric and electronic parts industry in Indonesia continues to rely almost exclusively on foreign affiliated companies and imports from Japan, Singapore and other countries, to provide precision press forming parts, engineering plastic products, ICs, lead frames, PCBs, etc., and there is a very limited number of local companies which make these items.

Here for the sake of convenience, parts shall be classified into 1) general parts, 2) injection molding and press forming products (including molds and dies), and 3) components, and problems and improvement measures shall be given for each.

General parts are divided into mechanical parts made by machine processing, etc., and electronic microchips such as ICs, etc. Concerning the latter, only a very small proportion of such parts are made locally. Since most of such parts are mass produced and are required very high quality levels, the industry for such parts manufacturing is highly advanced and located in Japan, Singapore and Malaysia, for example. Apart from advances made by foreign enterprises, there is little room for local companies to enter the sector. The situation concerning mechanical parts has much in common with die and mold manufacture mentioned later, but the issues at hand concern more on the achievement of further sophisticated machine design technology and precision processing technology.

Concerning plastic injection molding products and press forming products, their technology levels have a close relationship with those of molds and dies. The quality of plastic injection molding products and press forming products depends on the quality of the molds and dies used to a degree of 90%. Incidentally, one thing that is common to both plastic injection molding products and press forming products is the fact that, even though companies are able to operate molding and pressing machines, they are unable to handle troubles that may occur.

Technical levels can only be raised through operators becoming aware of problems and gaining work experience. However, the time required to raise technical levels can be shortened by providing short-term guidance by experts.

There are several local mold and die makers which are capable of dealing with molding and press forming products for domestic electrical appliances and automobiles, etc. However, the mold and die technology of even these companies cannot compare with that of foreign affiliates.

Even with foreign affiliated or local molding product and press forming product makers, all the molds and dies of high quality levels have to be imported. Therefore, the problem is not that there is no demand for molds and dies, but that companies have no other choice but to purchase from abroad. The aforementioned Japanese affiliated pressing die makers guarantee Japanese quality levels to users and adopt die maintenance and follow-up setups. Even though prices are almost the same as those charged in Japan, orders for this company's products are in excess of production capacity.

(2) Required Improvements

In this way, as is the case with plastic injection molding products and press forming products, the key technology is mold and die technology, and there is little difference in the final development objective that was recommended at the time of the previous survey, i.e., to improve mold and die technology.

Since there are no specialist mold and die engineers who can give guidance in Indonesia, it is considered best to carry out the following: in the short term, to make use of the at site technical guidance by foreign experts. In the medium to long term, raising the levels of companies should be achieved by developing engineers by means of the establishment of a technology center for mold and die making that was proposed in the previous study.

With respect to the components sector, since there exists fully automated process industry in Japan, Singapore and Malaysia, it is not possible for Indonesian local companies to carry out

large-scale plant investments straight away. It would be wiser in the immediate future for local companies to supply to the domestic market as parts makers and semi-assemblers. Among these companies, there would be a chance that they could modify manufacturing methods and raise their technology levels and develop to internationally competitive components manufacturers.

Table 4-3-18 gives a summary of the problems and countermeasures that revolve around the issue of technology.

**Table 4-3-18 Technical Problems and Countermeasures in
the Local Electric and Electronic Parts Industry**

Classification	Problems	
Parts	Delayed delivery Lack of design and precision processing technology Excessive dependence on imported parts	Dispatch of overseas technical experts Dispatch of production control experts Improvement of precision processing technology Improvement of production technology Invitation of foreign companies Simplification of customs clearance Reduction of import tariffs
Molding products and press forming products	Lack of injection molding technology Lack of press forming technology Lack of mold design technology Lack of production control technology Lack of problem solving capability Unstable supply of local materials	Improvement of basic technology Improvement of mold and die making (including CAD/CAM Systems) Dispatch of overseas technical experts Clarification of quality control regulations Introduction of factory visit instructors Establishment of domestic industrial standards Improvement of production technology Introduction of a skilled worker qualification system
Components	Lack of circuit design engineers Fluctuations in manufacturing processes Electromagnetic steel plate is imported Manufacturing processes are manual High dependence on imported parts and materials Old and obsolete production equipment Lack of technology to produce large size components Low level of measuring accuracy Unstable supply of local materials	Improvement of educational institutes Promotion of automated production Improvement of jigs, tools and devices Localization of special steel Improvement of acceptance quality control Financial support for equipment renewal Guidance by overseas experts Introduction of technology from foreign companies Invitation of foreign companies Development in the direction of a process industry Clarification of quality control regulations Improvement of molding technology Establishment of domestic industrial standards

Source : JICA Study Team

3.3.2 Managerial Issues and Required Improvements

(1) Managerial Issues

The managerial issues faced by companies in the electric and electronic parts industry in Indonesia differ widely between local companies and foreign affiliate companies. Also, among local companies, differences can be seen in the problems facing large enterprises and small and medium enterprises.

Foreign affiliates tend to face fewer business problems, owing to the wide-ranging support that they receive from their parent companies. For example, while the currency/ economic crisis may have caused a reduction in domestic shipments, the parent company is often able to provide new markets, and to check the decrease in sales. Also, these companies rarely borrow from Indonesian financing organizations, but with the guarantee of the parent company, are able to borrow from foreign banks and therefore seldom suffer the effects of the domestic credit crunch.

In the past, the biggest issue facing foreign subsidiaries was personnel, in particular, the securing of technicians and middle managers. This was largely due to labor shortages, caused by suddenly increased foreign investment, and by the limited staff training opportunities in Indonesia. However, once the currency/economic crisis caused employment opportunities to shrink rapidly, it became much easier to secure staff than it had been before. As unemployment figures rise, employees' incentive to stay with their company has grown stronger, and the once common job-hopping has now become very rare.

Even among local companies, there are some large companies that have recently been introducing modern management techniques. However, small and medium sized companies still lag behind in terms of business management. These companies are being seriously affected by the currency/economic crisis and, in extreme cases, businesses have all but ground to a halt.

The business problems facing mainly local small and medium sized businesses in the

Indonesian electric and electronic parts and components industry, and strategies for improvement, are described below.

a. Modern business management techniques

Business management techniques range from business planning to marketing, sales, production, supply, personnel and labor, finance and R&D, covering the whole spectrum of the management of an enterprise. Foreign affiliates benefit from comprehensive management support from their overseas parent companies, and so have few business management problems. In contrast, many of the local small to medium enterprises are family businesses and many of them are lacking in established business management skills. There is little or no proper business planning, organizational planning or management control, and they face a great many business problems. As strategies for support, seminars to introduce business management techniques, sponsored by industrial organizations and government bodies, and the invitation of experts from abroad to provide guidance to small and medium enterprises, would likely be very effective.

b. Entrepreneurial awareness

Majority of electric and electronic parts and components manufacturers are small businesses, and depend, first and last, on orders from the assemblers. The result is that they tend to adopt a passive business style, abandoning any possibility of corporate development on their own initiative. Currently, the currency/economic crisis has caused a drastic reduction in domestic demand in the electric and electronic parts and components industries, and unless small and medium sized businesses have the entrepreneurial awareness to develop new markets for themselves, they will find it very difficult to survive. Therefore, the government and industrial associations need to take the lead in 1) encouraging the provision of information on the market and technological trends, 2) organizing the study tours of model companies (benchmarking), or 3) inviting experts who could give individual guidance to businesses, etc.

c. Skilled labor force

In sectors such as precision processing and molds, etc., which support the electric and electronic parts and components industry, there is a distinct paucity of skilled labor, particularly technicians. As a backdrop to this situation, there is, first of all, a lack of training organizations in Indonesia for the provision of technician training. Secondly, while there are universities and polytechnics that cover both scientific theory and practice of technical training, their primary focus tends to be on theory, and apart from a handful of polytechnics, the acquisition of technical skill is neglected. Further, in the case of many small and medium companies, there is no in-house system for the education and training of engineers and technicians, which hinders the development of technical and engineering skills. The educational institutions need to be vitalized into providing training not only for students, but for the improvement of the technical skills of technicians and engineers already in employment. In addition, it is vitally important that, in universities, polytechnics and in high schools, basic education be reinforced, along with the acquisition of technical skills, so that engineers are able to develop a basic scholastic ability. In the mid to long term, through the joint efforts of both government research organizations and industrial associations, the establishment of a technical training center that feature both practical skill training and academic study should be considered.

d. Information gathering

For small and medium sized businesses, information sources are limited to their trading partners, equipment suppliers, their own experience, specialist publications and magazines and seminars given by industry organizations, etc. Moreover, the information is often fragmentary and unsystematic. Also, the information is often one sided, and information that covers business in general and overseas markets is extremely limited. In addition to the provision of necessary information to small and medium sized businesses, there also need to be specialist guidance on how to obtain and utilize information. It is important that there be a smooth exchange of technical and business information among the assemblers and the small and medium sized businesses, and the industrial associations should take the lead in information gathering in each field. However, the Electrical and Electronics Industrial Association (GEI) and others are still at an underdeveloped stage,

and need assistance from government and overseas organizations.

e. Support from the assemblers

In general, support from the assemblers to the parts and components manufacturers consists largely of technical troubleshooting for problems arising in quality control or manufacturing. There is no systematic support. Neither is there any support for non-technical matters, such as business management and finance. Only a very few companies receive routine assistance, and the majority of companies only receive assistance when a quality related or other technical problem arises. This situation suggests the necessity for the development of systematic support strategies for the small and medium sized enterprises, on the part of assemblers. Such an initiative could take the form of cooperative associations comprised of parts and components manufacturers and led by the assemblers, or the development of specific industrial groups, focused from upstream industries to downstream industries. To achieve this, the government will need to take the initiative in reinforcing the linkage between the assemblers and parts and components manufacturers.

f. Support from public organizations and industrial associations

Polytechnics and universities hold short term programs and seminars, etc., for small and medium sized businesses. However, the content tends often to be limited to technical matters, and the lack of qualified experts and resources means that there is very little activity in the way of business management related subjects. Further, as the industrial associations also lack resources, they have mostly stopped providing support activities for small and medium sized businesses. There is a need for positive support activities for small and medium sized businesses, and this requires the urgent establishment of a powerful support system that encompasses both domestic and foreign government organizations. There are very few electric and electronic parts manufacturers who make use of joint facilities such as UPT, etc. There is a need for measures to bring about the modernization of these facilities, and to ensure their effective and efficient utilization.

g. Financing

Against the backdrop of prolonged economic stagnation, there are practically no companies with plans for the construction of new factories, or increased investment in equipment, and there is very little demand for financing for plant and equipment investment. However, the soaring costs of supplying raw materials, and declining sales, have led to more and more companies finding it difficult to finance day to day operating costs. Basically, most small and medium sized enterprises have very little extra funds to spare. Further, Indonesia's financial institutions have been left with huge amounts of bad debt, so that credit conditions for private sector firms have become very stringent, and it is extremely difficult to borrow from ordinary banks. Additionally, even if a loan is obtained, interest rates are a crippling 40 to 50%, making it very difficult to make sound investment and business plans. Meanwhile, the facts that the upper limits of financing for small to medium sized businesses through existing institutional financing schemes are so low, and that eligible companies are limited, mean that the demand for funding is not being fully met. In this situation, there needs to be urgent implementation of institutional financing schemes that match the actual needs of small and medium sized enterprises.

(2) Strategies for Improvement

Table 4-3-19 provides a summary of improvement strategies that are required in order to address the business management problems outlined above.

**Table 4-3-19 Improvement Measures for the Managerial Issues Faced by
the Local Electric and Electronic Parts and Components Industry**

Area	Problems	Suggested Measures
Business management techniques	<ul style="list-style-type: none"> • Family businesses • Lack of business management systems 	<ul style="list-style-type: none"> • Business management seminars sponsored by industry organizations • Peripatetic instruction by foreign specialists
Entrepreneurial awareness	<ul style="list-style-type: none"> • Passive business management style based on production on orders received. 	<ul style="list-style-type: none"> • Provision of information by government and industry associations • Study tours of model businesses (benchmarking) • Individual specialist instruction for businesses
Skilled workforce	<ul style="list-style-type: none"> • Lack of technicians • Lack of basic education 	<ul style="list-style-type: none"> • Vitalization of educational institutions • Fuller and more complete basic education • Establishment of technical training centers, etc.
Information gathering	<ul style="list-style-type: none"> • Lack of business management information • Lack of market information 	<ul style="list-style-type: none"> • Stronger linkage between assemblers and parts and components manufacturers • Support for industry associations from government and overseas organizations
Support from assemblers	<ul style="list-style-type: none"> • Lack of support in the area of business management • Lack of systematic support 	<ul style="list-style-type: none"> • Stronger linkage between assemblers and parts and components manufacturers • Promotion of cooperative associations • Development of industrial sites for particular fields
Support from public institutions and industry associations	<ul style="list-style-type: none"> • Lack of support in the area of business management • Lack of resources 	<ul style="list-style-type: none"> • Establishment of a support system by domestic and foreign government bodies • Effective utilization of UPT and other existing facilities
Funding	<ul style="list-style-type: none"> • Lack of operating capital • Credit crunch and soaring interest rates 	<ul style="list-style-type: none"> • Fuller and more complete institutional financing

3.4 MACRO FRAMEWORK FOR FUTURE DEVELOPMENT

3.4.1 Priority Parts and Components

In the previous study, the three aspects of 1) economic impact, 2) technological impact and 3) overall competitiveness (ease of market access and overall competitiveness viewed from product competitiveness, etc.) were used to select product groups of parts and components whose development was to be considered a priority. These parts and components are listed in Table 4-3-20. Further, as examples of parts and components to be accorded priority second to this group, flexible PCBs, liquid crystals (monochrome/ color), micro-speakers, button switches and sensors, etc. have been selected.

Table 4-3-20 Parts Selected for Prioritization in the Previous Study

Category	Priority Parts and Components
Mechanical Parts and Components	Plastic frames, Injection molded parts, Metallic press machined parts, Machined parts
Electric Parts and Components	Single/double sided PCBs, Multi-layered PCBs, Induction motors, DC motors, Audio speakers, Power supply unit connectors, Low voltage/micro current connectors
Electronic Parts and Components	Resistors, Capacitors, Semiconductors

All of these priority parts and components are basically mass production products that can be targeted at the overseas export markets, for which multinational enterprises have both manufacturing know how and sales channels. Production of some of these parts and components has already begun in Indonesia, but as the fundamental technology is lacking, there are practically no multinational enterprises that will subcontract to local firms. In the future, in order to develop the supporting industries, either through obtaining subcontracting work for electric and electronic parts and components from multinational firms, or by attracting new overseas parts and components companies, it is essential that basic technological skills in local firms be improved.

In order to manufacture the types of parts and components selected as priority items, the following fundamental technologies are required: press technology (simple press work, plate press work), plastic molding technology (general purpose injection molding, insert molding), machining technology, mold technology (simple press molds, plate press molds, general purpose plastic molding molds) and heat treatment technology.

In general, in the electric and electronic parts and components, plastic molded parts and metal pressed parts are widely used, while cast and forged parts are few. Also, with regard to electric and electronic finished products, by far the majority are plastic molded parts and press worked parts. It is expected that there will be a surge in the demand for plastic molded and press worked parts and components for household products in the future. The parts for TVs, audio systems and PCs, etc. are examples of these products.

From the above, it can be seen that plastic injection molding technology and press working technology are some of the most vitally and urgently needed fundamental technologies. At the center of these technologies is the manufacturing technology for precision presses and plastic injection molds. Currently, fairly simple molds can be manufactured domestically, but the more complex molds required for the manufacture of electric and electronic parts and components are still supplied from abroad. Therefore, in order to develop the supporting industries in the electric and electronic parts and component industries in Indonesia, it is necessary that the technology required to manufacture complex molds be learned. In addition to mold manufacturing technology, maintenance technology for the manufactured molds, and plastic molding technology, are also required.

3.4.2 Direction for the Development of the Electric and Electronic Parts and Components Industry

To sum up, the short term and medium to long term development targets or support measures needed to promote the electric and electronic parts industry in Indonesia can be summarized as follows.

a. Concerning mechanical parts, plastic injection molding products and press forming products, it is necessary to raise levels of injection molding technology and press forming technology. With respect to plastic injection molding products and press forming products, unless the industry possesses firm mold and die technology (key technology), it will merely become a subcontracting sector rather than a supporting industry. The support of overseas expert engineers is essential for developing mold and die technology. It is necessary in the short term to raise levels through having experts provide technical guidance, and in the medium to long term to build a system for intensively developing engineers through establishing a technology center for die and mold making that is equipped with high performance equipment and highly skilled experts.

b. With respect to electronic microchips, since a setup for supply from Singapore and Malaysia, for example is already in place, a positive efforts should be made to attract these supply industries rather than Indonesian companies entering into this market. For local companies currently in difficulty in the procurement of electronic microchips and other parts and raw materials as a result of appreciation of the dollar and the burden of import tariffs, some support measures should be taken with a view to lowering production costs.

c. A weakness that is pointed out as common to all parts manufacturing process in Indonesia concerns production technology in the areas of production control and quality control, etc. The reason for this is that there are few engineers who know all production lines and few supervisors who can oversee whole production processes. Although it takes time to develop such human resources, it is important to give potential technicians and engineers practical experiences, through gaining the cooperation of assemblers or dispatching appropriate staff members for overseas training. In the future, it may be desirable to establish a production technology center, or other similar facilities capable of conducting training in Indonesia. It is also recommended that a company internship system be established whereby future personnel can gain workplace experience before they start to work.

d. In addition to the above problem, another weakness in industrial production concerns the shortage of human resources capable of carrying out trouble shooting. For the time being, it will be necessary to develop problem solving capability through utilizing outside experts or having staff learn from case studies. However, in the long term, it will be necessary to systematically disseminate knowledge and experience at the aforementioned technology center for mold and die making or the production technology center. Another possible measure is to encourage self-improvement through establishing a qualification system for engineers and skilled workers, i.e., a system for assessing technology levels of workers.

e. With respect to components, as was mentioned above, for a time being it will be necessary to rely on imports or purchases from foreign affiliated companies regarding electronic microchips. However, if there is a possibility of competing with foreign affiliated companies, it would be recommend to move towards the establishment of automated production facilities in the future. If no such prospects exist, companies should improve and modify their existing production methods and limit their activities to supplying low-end PCBs, motors, transformers and assembly products to local assemblers.

f. Marketing, information and financial support or human resources development are important issues for small and medium enterprises. However, for companies that can make good quality products (a major prerequisite) but have no established sales routes or connection and have weak marketing capability, governmental supports including those through the activities of industrial associations are especially required. Concerning information provision and support for business negotiations, etc., it would be recommended to strengthen the functions of NAFED and develop this into a more powerful trade organization. With respect to those support measures as technical advice, investment and financing advice (including loans and subsidies) and related information provision, etc., the establishment of an organization in which all SMI supporting functions are integrated would be effective. Through this organization, it would also become easier for SMIs to approach bank loans. Concerning human

resources development, the first step development should consider receiving cooperation from foreign affiliated companies, strengthening the functions of government agencies (UPT, etc.) and utilizing regional polytechnics. In the long run, it will be necessary to establish the aforementioned technology center for mold and die making or the production technology center.

3.4.3 Basic Strategies for the Development of the Electric and Electronic Parts and Components Industry

The present status and characteristics of the electric and electronic industry and the electric and electronic parts and components industry in Indonesia are summarized as table 4-3-21.

Table 4-3-21 Present Status and Characteristics of the Electric and Electronic Industry in Indonesia

a. Most parts and components are produced by foreign affiliated companies, and the development of the domestic parts and components industry lags far behind.
b. Assemblers depend on import for many parts and components. Especially, foreign affiliated companies import many parts and components.
c. Domestic parts and components manufacturers are lacking in technology, production facilities and capital, and are not able to produce reliable parts and components except for simple plastic molding parts and metal press parts.
d. Key parts and components such as electronic devices need high level technologies, and are rarely produced by domestic manufacturers.
e. Simple plastic parts and metal parts are produced locally using molds and dies. However, most mold and dies are said to be imported.
f. The acquisition of precise machining technology is necessary for the parts and components industry in Indonesia, as well.

Taking the present status and characteristics of the industry into consideration, basic strategies for the development of the electric and electronic parts and components industry, which Indonesia should adopt, are summarized as shown in Table 4-3-22:

Table 4-3-22 Basic Development Strategies of the Electric and Electronic Parts and Components Industry in Indonesia

a. Invitation of investments of foreign electric and electronic parts and components manufacturers into Indonesia in order to increase parts and components exports and to support the production of foreign affiliated assemblers.
b. Development of the electric and electronic parts and components industry through strengthening the linkage between assemblers and the supporting industry so that they can produce parts and components which meet high level of requirements from assemblers.
c. Improvement of technology levels of essential technologies in the metal process fields such as the production technology of precision press dies and plastic molds, and the production technology of precise machining.

3.4.4 Macro Framework for the Development of the Electric and Electronic Parts and Components Industry

A macro framework comprised of both short term and long term development measures for the development of the electric and electronic parts and components industry in Indonesia is summarized in Tables 4-3-23 and 4-3-24. The development of the electric and electronic parts and components industry can be achieved through the solution of problems mentioned here.

Table 4-3-23 Technical Development Measures for Electric and Electronic Industry

Items		Issues of Present Situation	Short Term Measures	Medium and Long Term Measures
Parts	Mechanical Parts	a) Delayed delivery of imported standard parts b) Lack of design technology b) Lack of production and processing technology	a) Simplification of customs clearance b, c) Dispatch of experts; Strengthening of links with assemblers	a) Abolition of import tariffs b, c) Establishment of a production technology center
	Electronic Parts	a) High dependence on imports	a) Lowering of import tariffs	a) Abolition of tariffs; Invitation of foreign parts manufacturers
Molding & Press Forming Products	Plastic Moldings & Molds	a) Lack of injection molding technology b) Lack of mold fabrication technology capability c) Lack of production control technology capability d) Shortage of managers with knowledge of lines e) Lack of problem solving capability f) Unstable supply of local raw materials	a, b, c) Dispatch of experts c) Overseas training of Supervisors d) Education of basic skills of mold engineers e) Clarification of quality control regulations	a, b, c) Establishment of a technology center for production, and mold and die making; Introduction of factory visit instructors d) Company internship system for students e) Introduction of a skilled Worker qualification System f) Establishment of domestic industrial standards
	Press Forming & Dies	a) Lack of press forming technology b) Lack of die fabrication technology capability c) Lack of production control technology d) Shortage of managers with knowledge of lines e) Lack of problem solving capability	a, b, c) Dispatch of experts; Strengthening of links with assemblers d) Overseas training of supervisors e) Raising of basic skills of mold engineers	a, b, c) Establishment of a technology center for production, and mold and die making; Introduction of factory visit instructors d) Company internship system for students e) Introduction of a skilled worker qualification system
Components	P C B s	a) Lack of circuit design engineers	a) Tie-ups with electronics Polytechnics (R&D Cooperation)	a) Utilization of company personnel training courses at educational institutes
	Transformers	a) Electromagnetic steel plate is imported b) Manufacturing processes are manual	a) (-) b) Improvement of jigs, tools and devices	a) Localization of special steel b) Promotion of automated production
	Motors	a) Raw materials are imported b) Old and obsolete equipment c) Large motors cannot be manufactured	a) Acceptance quality control setups b) Financial support measures for equipment renewal c) Dispatch of experts	a) Localization of special steel production b) Promotion of automated production c) Introduction of technology from foreign companies
	Semi-assembling Products	a) Many basic parts are imported g) Much assembling work is done manually h) Poor measurement of cabinet dimensions i) Unstable local plastic raw materials	a) (-) b) Improvement of jigs, Tools and device c) Development of the Technology of subcontracted press forming makers d) Clarification of quality control regulations	a) Invitation of foreign companies b) Promotion of automated production c) Establishment of a technology center for mold and die making d) Establishment of domestic industrial standards

Table 4-3-24 Managerial Development Measures for Electric and Electronic Industry

Items	Issues of Present Situation	Short Term Measures	Medium and Long Term Measures
Marketing	<ul style="list-style-type: none"> a) Lack of marketing capability / Slow response b) Difficulty in entering overseas markets c) No measures to access foreign buyers 	<ul style="list-style-type: none"> a) Marketing and retailing education b, c) Advertisements in overseas industry publications; Strengthening of the functions of NAFED; Cooperation and effective utilization of MOIT 	<ul style="list-style-type: none"> a) Widespread staging of trade fairs in Asia b, c) Establishment of an external trade organization; Major upgrading of production technology (good products will sell)
Information	<ul style="list-style-type: none"> a) Lack of industry and technology information 	<ul style="list-style-type: none"> a) Support measures and function bolstering measures for the industrial association and related bodies 	<ul style="list-style-type: none"> a) Establishment of a small and medium enterprises agency a, b) Establishment of an information and technology advice center
Loans and Funds	<ul style="list-style-type: none"> a) Difficulty in borrowing from banks b) Lack of funds for equipment renewal c) Lack of working capital 	<ul style="list-style-type: none"> a, b, c) Expanded utilization of two-step loans; Emergency government support measures 	<ul style="list-style-type: none"> a, b) Establishment of a small and medium enterprises agency
Human Resources & Training	<ul style="list-style-type: none"> a) Only OJT is available b) Lack of literature and textbooks on technology 	<ul style="list-style-type: none"> a) Utilization of polytechnics, etc. b) Expansion in function of the industrial association 	<ul style="list-style-type: none"> a, b) Establishment of a production technology center; Strengthening of function of the UPT; Cooperation with foreign companies

CHAPTER V. OVERVIEW OF THE ASIAN MARKET

1. JAPANESE MARKET

1.1 TRENDS OF THE ASSEMBLY INDUSTRY IN 1999

1.1.1 Automobiles

Domestic automobile sales figures for 1999 show that, while passenger car sales are expected to decrease very slightly, sales of commercial vehicles are expected to increase. Overall, the forecast is for a slight increase in the figures for fiscal 1998. As regards exports, the lull in exports to the Middle East has led to expectations that there will be an overall decrease. Domestic production of CBU (finished vehicles) is expected to be 1.5% up on fiscal 1998, at 9.89 million units.

1.1.2 Household electrical appliances

The slump in individual consumption, etc., means that household electrical appliances will still be posting minus growth, although the scale of the decline will abate. Some product items are still strong, such as washing machines and refrigerators, etc., and air conditioner sales are expected to increase, in spite of the uncertainty of weather as a factor. However, growth in these products alone cannot be expected to boost the market as a whole. AV equipment is not expected to post much of a growth, and the forecast is for continued shrinkage of the household electrical appliances market as a whole.

1.1.3 Industrial electronic products

Growth is expected in this sector, due to expected investment in telecommunications equipment and consumer replacement demand. In computers, the recovery of corporate oriented PCs and individual replacement demand, etc., has led to a healthy expansion in the sales volume. However, as prices continue to drop, the monetary value is expected to remain about the same. A recovery in the semi-conductor market is expected from the latter half of

the year onward. However, as yet, the future prospects remain unclear.

1.1.4 General Machinery

While general economic policies are expected to boost sales of some types of machinery, generally speaking, domestic demand is sluggish. As for exports, the Asian economic crisis has dashed expectations of growth in exports to South East Asia, and previous healthy exports to the USA are also expected to slow down. Overall, a decrease is forecast. Viewed overall, with sluggish demand both at home and abroad, the market for general machinery is expected to continue to decline in 1999.

Table 5-1-1 Production Trend of Machinery Industry in Japan

Industrial Sector	Item		Production			Growth rate (%)		
			Actual 1996	Actual 1997	Proj. 1998	1997 /96	1998 /97	
Processing and Assembly Industry	Auto -mobiles (10,000 units)	Domestic new vehicle sales		627	579	582	-7.7	0.5
		Finished vehicle exports		467	444	437	-5.1	-1.5
		Finished vehicle production		1,078	974	989	-9.6	1.5
	Electric machinery (10 billion yen)	Domestic electrical appliances	Civil electric machines	220	200	195	-9.0	-2.8
			Number of home air conditioners	620	539	630	-13.1	6.9
			Civil electronics	222	208	207	-6.2	-0.5
		Production Total		442	409	402	-7.6	-1.6
		Industrial electronics	Electronic equipment	1,168	1,099	1,105	-5.9	0.6
			Electronic parts and components	992	898	918	-9.5	2.3
	Semi-conductors		477	433	440	-9.3	1.7	
	Production Total		2,104	2,160	2,184	2.6	1.1	
	Total		2,602	2,405	2,425	-7.6	0.8	
	General machinery (10 billion yen)	Production		841	733	681	-12.8	-7.1
		Machine tools		105	95	84	-9.1	-11.7
		Industrial robots		57	48	47	-15.9	-2.1
Construction machinery		120	87	85	-27.2	-2.7		

Source: Prepared by Shinko Research Center (SRC)

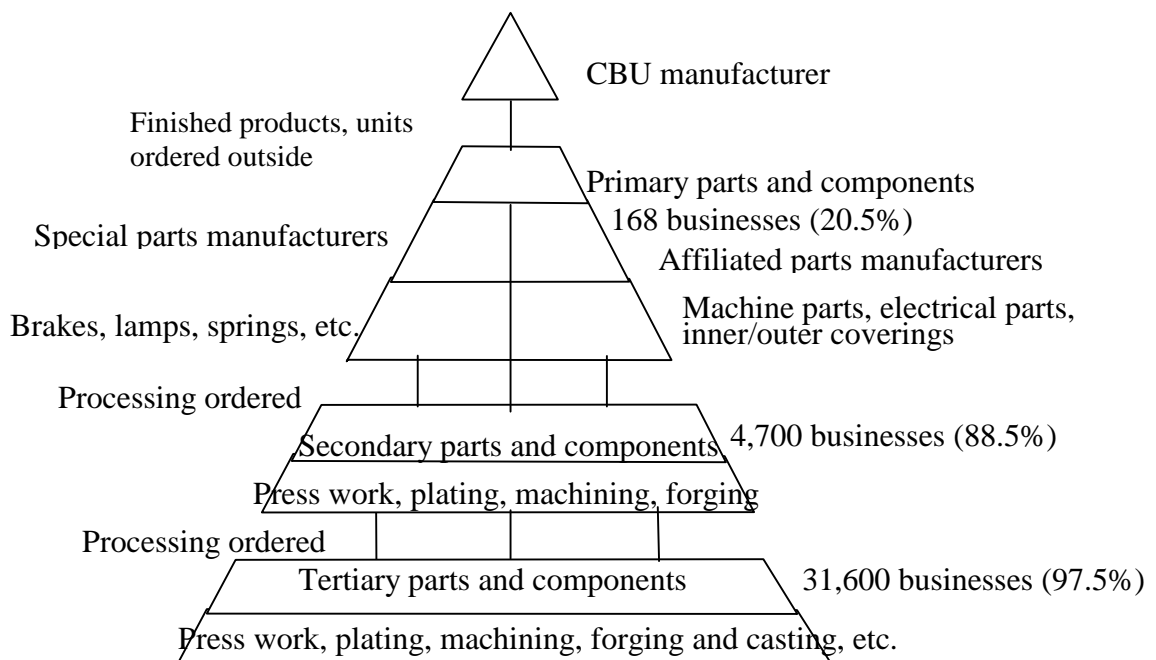
1.2 CURRENT STATUS OF THE AUTOMOTIVE PARTS AND COMPONENTS INDUSTRY

1.2.1 Industrial Structure

Annual production volume of the Japanese automobile industry soared to 10.55 million units in 1994, among the top figures in the world. In the growth process of the automobile industry, the majority of companies in the automotive parts and components industry belong to affiliated groups of CBU manufacturers, and work hard to reduce costs and improve quality, thus contributing to the development of the industry.

In the Japanese automobile industry, the CBU manufacturers and the parts and component manufacturers have a vertically arranged production specialization (division of labor) relationship which forms a highly effective production system, and is the source of Japan's international competitive strength.

Fig. 5-1-1 Production Structure of the Japanese Automobile Industry



Source: Small and Medium Enterprise Agency & LTCB Monthly Report No. 221

Note: The figures in parentheses refer to the percentage of small and medium enterprises.

The reasons for this kind of specialized production structure lie in the fact that automobiles contain a great number of different parts, and for one company to attempt to manufacture all of them would require huge management resources, and also in the Japanese CBU manufacturers' attempts to effectively utilize their management resources in order to catch up with their American and European counterparts.

1.2.2 Special Characteristics of the Industry

The special characteristics of the Japanese automotive part and components industry may be summarized as follows.

- i. Structurally speaking the CBU manufacturers are at the top of a pyramid type structure, followed by the primary parts and components manufacturers, secondary parts and components manufacturers and tertiary parts and components manufacturers. Each of these parts manufacturers belongs to a 'keiretsu' type affiliation with the CBU manufacturer. The primary parts manufacturers are involved from the initial stages (design-in) in the development of a new vehicle, actively making technical suggestions and working on production design, etc., and thus contribute significantly to reducing the CBU manufacturer's costs, and to technological advancement. Below the primary parts manufacturers, the secondary and tertiary parts manufacturers carry out machining and press work, and produce screws and forged and cast products which they supply to the primary manufacturers. The parts and process manufacturers of the third tier and below are mostly small to medium sized businesses. They take on part of the production work of the secondary parts manufacturers, such as machining and plating, etc., with many of them producing components that have a low level of processing, or small production volume.

In comparison to the high ratio of in-house manufacture of parts and components (40 to 70%) of European and American CBU manufacturers, and the horizontal, specialized structure of the European parts and components industry, the Japanese CBU manufacturers' in-house parts manufacture ratio is generally around 30%, with a high level of reliance on the parts manufacturers.

- ii. There are about 500 types of vehicles, assembled from some 20 thousand kinds of parts and components, which means that there are a very great number of types of automotive parts. Parts manufacturers range widely, from those that manufacture different types of parts, to those that specialize in a limited range of items. Also, there are some that do not manufacture any particular product, but only perform press work, plating and other types of processing.
- iii. According to the MITI industrial statistics, of the 3,132 automotive parts and components manufacturers, roughly 90% are small to medium sized businesses, capitalized at less than 100 million yen. In particular, over 40% of the total companies are capitalized at from 10 million yen to less than 50 million yen. Most of these enterprises have 20 to 29 employees, accounting for about one third of the total, and 90% of them are classified as small and medium sized businesses with less than 300 employees.
- iv. Geographical distribution of businesses shows that they tend to be concentrated around the production facilities of the CBU manufacturers, in the Kanto (Tokyo and environs) and Chubu (Central Japan) regions, and businesses in these two areas account for 75% of the national total.

1.2.3 Trends in Supply and Demand

(1) Production Trends

Owing to robust domestic automobile production, automotive parts and components production in fiscal 1997 was up 5.9% over the previous year, worth some 14.3 trillion yen. Concentration around the top manufacturers was high, and the shipment value of companies capitalized at over 1 billion yen (167 companies) was 76% of the total, with companies of over 2,000 employees (43 companies) accounting for 49% of the total. Viewed by parts categories, chassis parts (3.8 trillion yen), engine parts (2.2 trillion yen) and drive and transmission steering parts (2.5 trillion yen) accounted for major portions of the total.

Table 5-1-2 Automotive Parts and Components Production Values by Fiscal Year

Unit: Million Yen

	FY1990	FY1992	FY1993	FY1994	FY1995	FY1996	FY1997
Engine parts	2,233,599	2,412,566	2,373,381	2,402,986	2,122,568	2,154,464	2,240,644
Drive and transmission steering parts	2,162,649	2,343,434	2,231,726	2,255,363	2,263,935	2,366,609	2,460,127
Suspension and braking parts	1,125,642	1,161,473	1,061,542	1,087,017	1,054,407	1,087,422	1,186,164
Chassis parts	3,609,856	4,084,991	3,617,363	3,544,745	3,310,659	3,473,810	3,821,191
Electrical system parts	2,642,169	2,886,625	2,753,330	2,821,600	2,796,220	2,973,228	3,092,157
Accessories and tools	1,485,315	1,710,676	1,595,278	1,479,651	1,447,021	1,482,534	1,534,422
Total	13,259,230	14,599,765	13,632,620	13,591,362	12,994,810	13,538,067	14,334,705

Source: Japan Auto Parts Industries Association Survey

**Table 5-1-3 Major Automotive Parts and Components Production Value
(Four Wheeled Vehicles Only)**

Unit: Million Yen

	FY1990	FY1994	FY1995	FY1996	FY1997
Pistons	72,888	72,026	74,753	68,089	63,122
Piston rings	42,131	42,289	45,087	47,158	48,773
Intake and exhaust valves	55,008	72,479	65,261	68,996	71,371
Gaskets	29,693	35,871	38,660	38,371	37,554
Oil seals	56,665	59,161	61,468	60,520	65,044
Carburetors	52,718	26,702	25,738	23,599	26,744
Fuel injection devices	349,768	323,349	340,936	355,178	414,355
Air cleaners	60,765	38,991	35,599	34,690	36,456
Radiators	199,489	167,555	133,619	132,729	140,912
Clutch devices	111,804	97,650	90,252	88,049	99,449
Automatic transmission	504,796	563,879	951,228	990,315	1,051,996
Propeller shafts	58,369	51,820	52,670	57,422	56,681
Wheels	183,585	148,866	148,495	150,020	167,734
Steering wheels	66,595	61,234	65,937	65,097	50,980
Steering devices	238,743	227,804	220,949	242,006	243,903
Shock absorbers	126,472	131,684	127,469	130,958	137,086
Brake cylinders	78,312	108,497	98,314	109,919	110,669
Exhaust pipes and mufflers	163,492	156,303	138,023	140,488	159,403
Seats	677,887	529,298	488,341	485,670	551,669
Instruments and gauges	163,890	132,917	124,059	115,487	121,117
Generators	141,299	123,992	126,226	125,568	130,634
Starters	120,310	108,733	108,541	104,142	107,399
Spark plugs	51,729	43,169	44,958	45,271	48,891

Source: Machinery Statistics Annual Report, MITI

(2) Import/Export Trends

Examination of the import and export figures for automotive parts shows that, from 1986, when exports of CBU peaked and overseas production began in earnest, until 1992, exports of parts and components continued to increase, resulting in a serious export glut. Recently, however, there is evidence of an increase in imports.

Customs statistics show that the export value of 'automotive parts and accessories' in fiscal 1995 was 1,798.2 billion yen (approx. \$17.5 billion), which was an 8.7% increase over the previous year. The reasons for this increase are the expansion of overseas production by CBU manufacturers and the increased demand for repair parts and components, following the increase in the numbers of Japanese cars owned abroad. Exports to the United States accounted for over 40% of the total, followed by exports to Asia and Europe.

Meanwhile, imports were more or less the same as the previous year, at 116.2 billion yen (\$1.1 billion), although this represents a US dollar base increase of 8.8%. Practically all of these imports are believed to be repair parts for imported cars in Japan. And the fact that American automotive parts manufacturers, bolstered by the high yen, seem set to make aggressive inroads into the Japanese market, and that CBU manufacturers have begun to actively seek supplies of foreign made parts and components, indicates that the trend will be for this market to increase.

(4) Transaction Types and Conditions

a. Transaction types

There are three types of relationship between the parts manufacturers and the CBU manufacturers: direct affiliate manufacturers, affiliate (keiretsu) manufacturers and independent manufacturers.

The direct affiliate manufacturers, who have personal and other fundamentally strong

links with the CBU manufacturer, work to a style that closely resembles production on orders received, based on a production schedule provided by the CBU manufacturer. In general, their corporate size is large and they organize groups of subcontractors in the form of cooperative companies with plant and equipment investment that closely matches the production system of the CBU manufacturer, and are able to maintain a fixed level of technical expertise.

Affiliate manufacturers are under the influence of the CBU manufacturer, and many of them have production set ups similar to those of the direct affiliates, though their production line-up tends to be smaller, concentrating on specialized parts and components. Nevertheless, among these affiliate manufacturers, there are examples here and there of companies that have begun to pursue transactions with CBU manufacturers outside of their keiretsu affiliation, in order to expand their customer base.

Independent parts and components manufacturers are usually either very broad based, or handle special parts and components that constitute a specialist technical field. Their transactions are not limited to any one particular automobile manufacturer.

However, once into the 90's, with automobile production continuing to decline, the trend in the supply of parts to the CBU manufacturers, has been for the traditional distinctions of 'direct affiliate', 'affiliate' and 'independent' to become blurred.

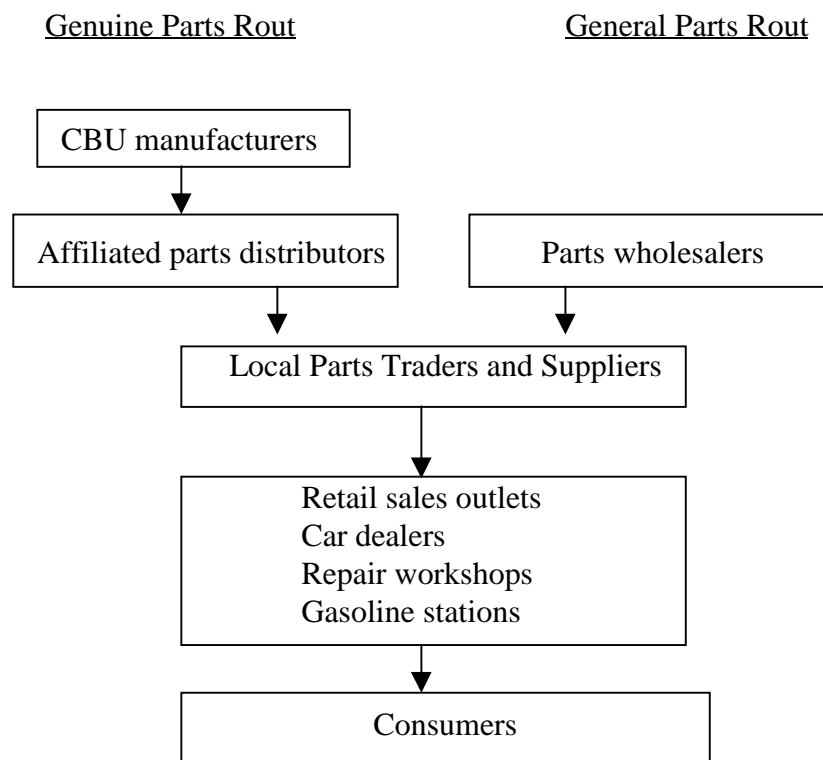
b. Purchasing methods and payment conditions

Steel products, which are the main raw materials, are generally purchased on a paid provision basis from the vehicle manufacturer, or directly from the wholesaler. Recently there are more and more cases of members of an affiliated group buying in bulk together. Payment is usually done by drafts. A payment period of draft varies according to the negotiating power of a company.

c. Sales Methods and Pay-back Conditions

Sales methods also differ from company to company, but primary parts and components manufacturers and independent manufacturers almost always supply OEM parts for new car production directly to the CBU manufacturer. Repair parts are either supplied directly to the CBU manufacturer's affiliated parts supply company, etc., or supplied to independent wholesalers and parts trading companies, etc. Exported parts may be directly exported by the parts manufacturer, or via the CBU manufacturer or trading company. Pay back conditions vary according to the rank of the CBU manufacturer and parts manufacturer, and the cash pay back ratio is comparatively high.

Fig. 5-1-2 Repair Parts Distribution Channels



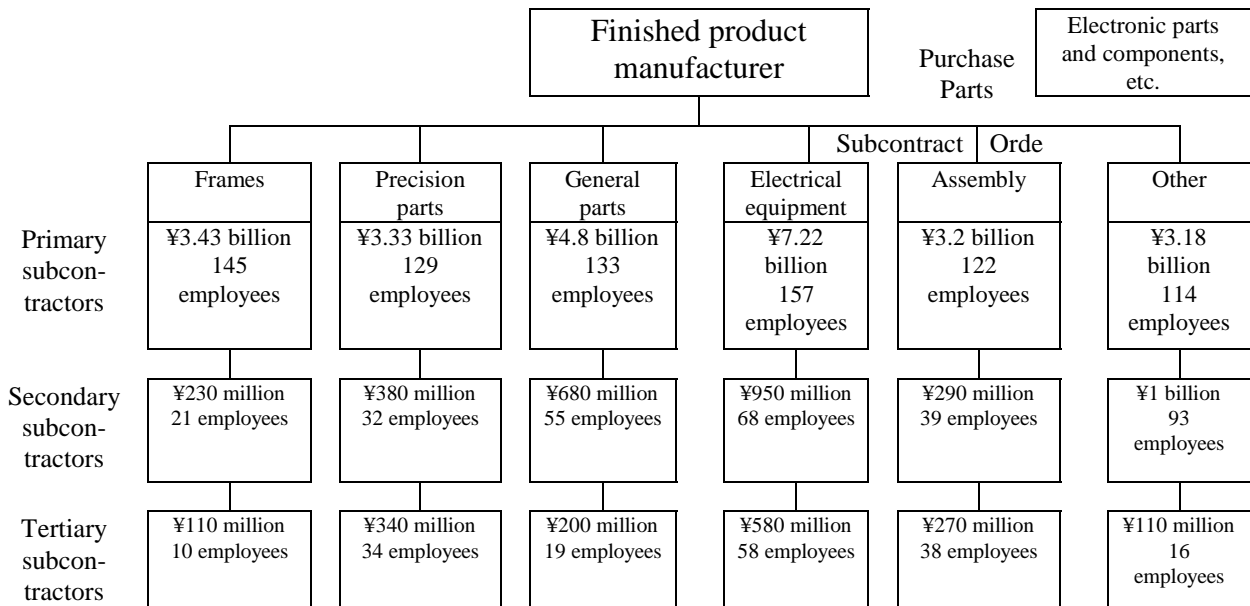
1.3 CURRENT STATUS OF THE HOUSEHOLD ELECTRIC AND ELECTRONIC PARTS AND COMPONENTS INDUSTRY

'Household electric goods' generally refers to electrical appliances that are used in the home, and the term covers great many types of products. Household electrical appliances may be largely divided into consumer electronic appliances (production value for fiscal 1993; 3,257.7 billion yen) and consumer electrical appliances (production value for fiscal 1993; 2,575.5 billion yen). While TVs and VTRs, etc., are classified as consumer electronic appliances, what is meant here by consumer electrical appliances is (i) washing machines, vacuum cleaners and the like, which reduce and rationalize the burden of housework, (ii) refrigerators, microwave ovens and other kitchen appliances and (iii) air conditioners and other so called 'white products' (from the predominant color of most of these products), that serve to enrich the daily living environment.

1.3.1 Industry Structure

The household electric goods industry has a pyramid like structure that features many types of enterprise groups, with finished product manufacturers at the top, followed by primary, secondary and tertiary subcontractor parts manufacturers on lower levels, all the way down to operators who work at home. According to the MITI *Industrial Statistics* (1993), there are some 2,002 businesses with 4 or more employees working as manufacturers of parts, fixtures and accessories for consumer electrical appliances. The mutual interdependence between parent companies and subcontractors is very strong, and features a multi-layer structure, with the parent company's demands for price reductions being absorbed at every level.

Fig. 5-1-3 Subcontract Specialization Structure in Consumer Electrical and Electronic Appliances Industry



Source: *Processing and Assembly Industry Actual Conditions Survey*, Small and Medium Enterprise Agency, December, 1994

Note: The figures in parentheses indicate the average value and number of employees for that category of enterprise.

1.3.2 Company Size

According to the MITI *Industrial Statistics* (1993), there are 2,752 businesses with 4 or more employees in the consumer electrical appliances manufacturing industry. Of these, some 2,531, or 92.0%, are businesses with fewer than 100 employees. The industry, therefore, contains a great many small and medium sized enterprises.

2,002 businesses involved in the manufacture of parts, fixtures and accessories for consumer electrical appliances are categorized as parts and components manufacturers, with the shipment value per business at ¥564 million per annum. In comparison with the large assemblers of refrigerators, etc., the shipment value per business is extremely low.

Table 5-1-4 Trends in Numbers of Businesses and Shipment Values by Product Type

	Refrigerators			Washing Machines			Partial Products, Fittings and Accessories for Consumer Electrical Appliances		
	No. of Businesses	Shipment Value (Million Yen)	Shipment Value per Business (Million Yen)	No. of Businesses	Shipment Value (Million Yen)	Shipment Value per Business (Million Yen)	No. of Businesses	Shipment Value (Million Yen)	Shipment Value per Business (Million Yen)
1989	17	431,079	25,358	11	166,266	15,115	1,924	1,072,990	558
1990	17	442,103	26,006	10	193,894	19,389	2,004	1,173,369	586
1991	15	483,774	32,252	10	207,264	20,726	2,055	1,309,342	637
1992	18	481,889	26,772	11	205,750	18,705	2,010	1,272,764	633
1993	20	464,530	23,227	12	200,559	16,713	2,002	1,129,080	564

Source: *Industrial Statistics Tables (1993)*, MITI

Note: The above refers to businesses with 4 or more employees.

1.3.3 Distribution System

The distribution system has a pyramid structure, with the finished product manufacturers at the top, and subcontractor manufacturers and then secondary and tertiary manufacturers on the supporting levels. Parts and components produced by manufacturers on the lower levels of the pyramid travel upwards to be assembled by parts manufacturers on higher levels, and finally to the finished product manufacturers at the top. This type of multi-layered pyramid structure means that the lower level parts manufacturers are naturally incorporated into a keiretsu (affiliated) relationship with the upper level manufacturers.

1.3.4 Transaction Types and Conditions

The methods of purchasing raw materials and conditions of payment differ according to the circumstances of the manufacturer. Payment for raw materials purchased from the parent company on a paid provision basis is usually done by subtracting the difference for work done. Also, the provision of raw materials is to ensure uniformity of product quality by integrating parts quality.

Payment is by draft or cash. The payment term of draft is determined by the finished product

manufacturer, based on the importance of the parts manufacturer and the degree of closeness, and it is here that the nature of the relationship between the finished product manufacturer and the parts manufacturer can clearly seen.

Further, depending on the financial health or subcontractor policies of the assembler/manufacturer who makes the order, there may be differences in payment conditions, even for parts manufacturers of similar types. Therefore, it is important for the finished product manufacturer to handle each case individually, after careful examination of the affiliate relationships and conditions of the companies involved.

1.4 CURRENT STATUS OF THE AGRICULTURAL MACHINERY INDUSTRY

1.4.1 Special Characteristics

As there are many types of agricultural jobs, the industry is characterized by small production volume of a wide range of product items. Demand for product items changes with the seasons, and may be divided largely into spring demand (tractors, cultivators, planters) and autumn demand (combines, binders, harvesters). In the Japanese market, the diffusion of major agricultural machinery has already been saturated, and in recent years is centered on demand for equipment renewal.

1.4.2 Industrial Structure

The major manufacturers are the roughly 100 member companies of the Japan Agricultural Machinery Manufacturers' Association, and according to the Industrial Statistics Tables, there are some 267 agricultural machinery manufacturers. The majority of these are small and medium enterprises, and only 29 of these companies are capitalized at ¥100 million or more.

Table 5-1-5 Distribution of Major Manufacturers of Agricultural Machinery by Capital and Numbers of Employees

Unit: Companies

Classification by Capital	No. of Companies	By No. of Employees	No. of Companies
Less than 1 million yen	2	20 to 29	89
1 million yen to less than 2 million yen	6	30 to 49	60
2 million yen to less than 5 million yen	15	50 to 99	60
5 million yen to less than 10 million yen	43	100 to 199	36
10 million yen to less than 50 million yen	137	200 to 299	13
50 million yen to less than 100 million yen	35	300 to 499	7
100 million yen to less than 1 billion yen	23	500 to 999	1
1 billion yen to less than 10 billion yen	6	1,000 or more	1
Total	267	Total	267

Source: *Industrial Statistics Tables (1993)*, MITI

Note: Companies with 20 or more employees, and excluding agricultural tools.

The industry leader is Kubota, followed by Yanmar, Izeki and Mitsubishi. In the main product types, these top 4 companies have very high shares, and the market is fast becoming

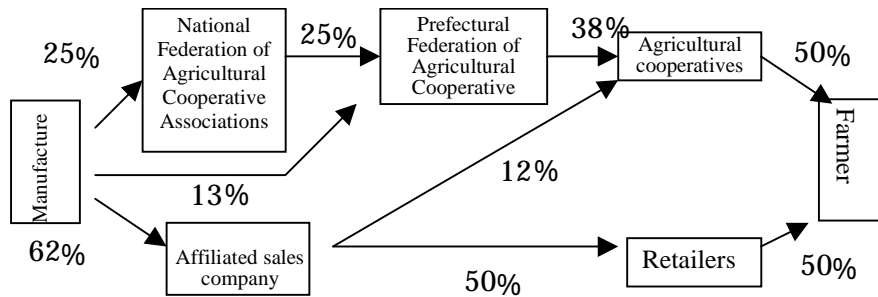
an oligopoly. The top four account for 78% of the tractor market, 89% for combines and 93% for planters. However, small and medium sized companies are able to hold their own in the manufacture of products for the comparatively smaller market for such control machinery as pest control machinery, bush cutters, etc., drying machinery, and rice hullers. In this field, there are many highly profitable companies that reap the benefits of low volume production of a large range of product items.

The industry is characterized by the specialization of large manufacturers in major machinery items, and small to medium sized manufacturers in smaller market scale machinery. However, there is a growing trend for the formation of major manufacturer affiliations and groups, through purchasing and supply. Also, there are more and more sales collaborations and business collaborations.

1.4.3 Distribution Structure

Distribution channels for agricultural machinery are largely divided into the agricultural association routes (manufacturers National Federation of Agricultural Cooperative Associations Prefectural Federation of Agricultural Cooperative Associations agricultural cooperatives farmers) and commercial routes (manufacturers dealers retailers farmers). In the case of the agricultural association routes, Zenno (National Federation of Agricultural Cooperative Associations) also purchase from the manufacturers, and agricultural cooperative associations from dealers. At the Zenno-stage, the share is 25%, and at the agricultural cooperative associations stage, the share is 50%. In recent years, along with changes in the structure of the agriculture industry, a reorganization of sales networks has been seen in some areas.

Fig. 5-1-4 Agricultural Machinery Sales Channels



Source: Ministry of Agriculture, Forestry and Fisheries

1.5 CURRENT STATUS OF THE METAL MATERIALS PROCESSING INDUSTRY

The metal materials processing industry includes casting, forging, die casting, metal press work, powder metallurgy, mold manufacturing and metallic heat treatment, etc. Categorized according to use, the products of the metal materials processing industry are overwhelmingly used by machinery industries, such as automobiles, industrial machinery and electrical machinery, etc. The production figures for the metal materials processing industry in 1993 show that 60%, 7%, and 6% of products were for the automobile industry, industrial machinery industry, and electrical machinery industry, respectively.

1.5.1 Trends of Pig Iron Castings

(1) Recent Trends

Looking at production volume in terms of purpose of use, production for the automobile industry (the largest demand sector) increased for the first time in three years (1.5% over the previous year). The increases were also seen in production for the metal working and processing machinery sector (11.3%) and the industrial machinery and apparatus sector (4.7%). Conversely, production for the electric machinery sector fell for the second year running (-5.2%), and there was also a decline in production for the civil engineering, construction and mining machinery sectors (-4.5%).

In production volume, the share accounted for by ductile iron, which gives excellent strength to castings, was up by 0.4% over the previous year to 32.6%. The share of production accounted for by ductile iron has increased by approximately 10 points in the past 10 years, indicating a clear basic trend away from gray pig iron towards ductile iron. Production of pig iron castings in 1997 stood at 4,580,000 tons (853 billion yen in value terms), representing an increase of 2.1% (1.5% in value terms) over the previous year.

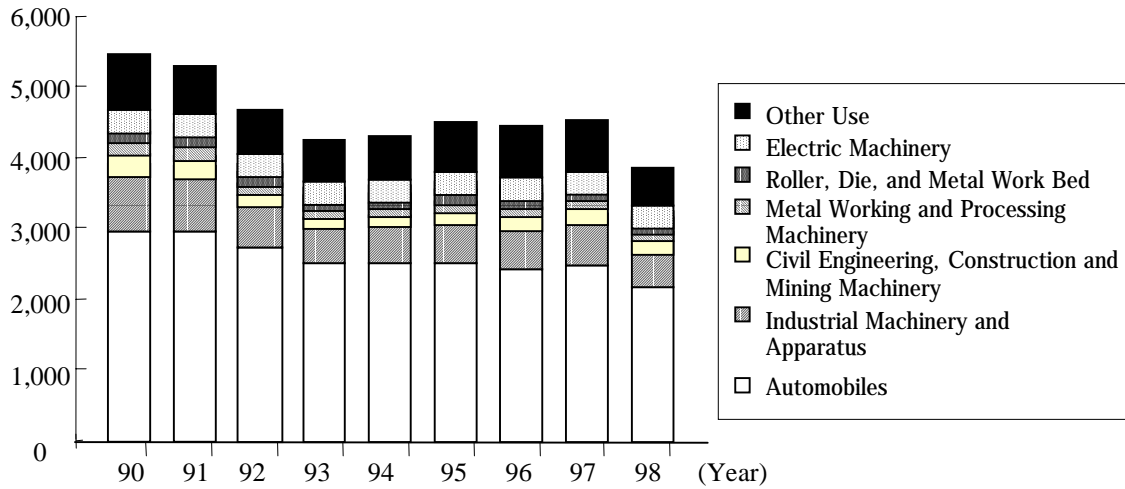
Looking at production volume in terms of type of material, production of gray pig iron, which accounted for 67.4% of all pig iron casting production in 1997, increased by 1.6% over the previous year, and production of ductile iron was up by 3.3%.

It is forecast that production of pig iron castings in 1998 will be 3,900,000 tons (738 billion yen in terms of value), representing a decrease of approximately 14% from the previous year. Demand is falling in all sectors, but especially so in the industrial machinery and apparatus sector, and civil engineering, construction and mining machinery sectors.

The pig iron castings sector faces harsh conditions in 1998 due to declining orders brought about by continuing stagnation of the economy and slow growth of capital investment. In these circumstances, the industry is attempting to develop new areas of demand through, for example, utilizing the attractive features of castings to make cast rubbish bins, gas lights and car stops for parks, and using cast blocks instead of concrete blocks for fish barriers (still in the experimental stage).

Fig. 5-1-5 Production of Pig Iron Castings by Purpose of Use

(Thousand Ton)



Source: *Machinery Statistical Yearbook*, Ministry of International Trade and Industry
Present Situation of Industry in Japan 1998, Ministry of International Trade and Industry

(2) Export and Import Trends

As for trade with Asian countries, Singapore is the largest importer of Japanese casting products and China is the largest exporter of casting products to Japan..

Table 5-1-6 Exports and Imports of Cast and Forged Products (1997)

Unit: Metric Tons

Country \ Item		Pig Iron Castings	Cast Iron Pipe	Malleable Cast Iron	Steel Castings	Copper Alloy	Forged Products	Total
China	Imports	61,804	146	5,333	12,112	382	2,281	82,058
	Exports	420	911	110	0	40	305	1,786
Taiwan	Imports	1,667	-	297	334	416	1,416	4,130
	Exports	9	52	113	2	28	321	525
Korea	Imports	1,300	147	1,837	5,149	41	219	8,693
	Exports	9	14	15	737	19	3,026	3,820
Malaysia	Imports	-	714	-	35	-	19	768
	Exports	1	62	63	-	119	6	251
Thailand	Imports	229	-	721	210	148	22	1,330
	Exports	169	81	53	0	129	85	517
Indonesia	Imports	109	-	164	1,191	-	396	1,860
	Exports	1	3,807	61	-	14	520	4,403
Singapore	Imports	2	-	1	21	245	13	282
	Exports	27	20,469	316	173	22	1,022	22,029
Philippines	Imports	512	-	-	34	-	-	546
	Exports	4	373	44	10	4	60	495
United States	Imports	36	26	199	8	82	92	443
	Exports	9	12	85	7	169	5,361	5,643

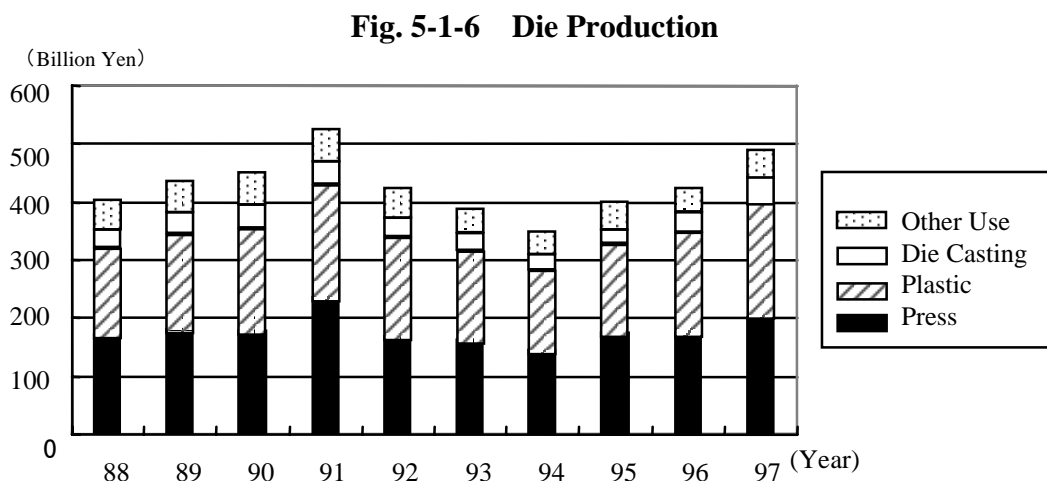
Source: *Monthly Report of Japan's Trade*, Ministry of International Trade and Industry

1.5.2 Die Industry Trends

(1) Recent Trends

Die production in 1997 was valued at 506.8 billion yen, representing an increase of 10.5% over the previous year, and this was the third year in succession that die production increased. This has been the result of greater demand from the automobile and electric-related sectors (the main demand sectors of dies), arising from a higher frequency of new car model launches and model changes.

However, due to the decline in demand, the value of die production in 1998 is expected to remain at almost the same level as in 1997 at 501.3 billion yen.



Source: *Machinery Statistical Yearbook*, Ministry of International Trade and Industry

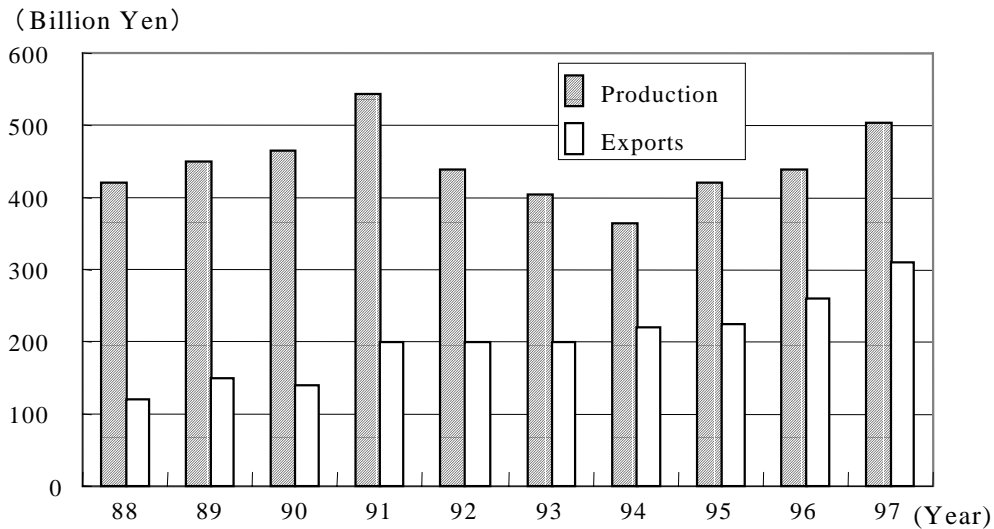
(2) Export and Import Trends

Japanese dies are exported to countries all over the world. Exports in 1996 amounted to 283.9 billion yen, accounting for roughly 30% of domestic die production. Most exports (60% of the total) are directed towards Asia, but North America and Europe, too, are important export destinations.

The value of die exports in 1997 was 335 billion yen, representing an increase of 23.6%

over the previous year. Exports to the major destinations of Southeast Asia (143.1 billion yen, 5.1% up on the previous year), the United States (96.9 billion yen, 51.2% up), and China (30.5 billion yen, 6.6% up) have grown favorably.

Fig. 5-1-7 Die Production and Exports



Source: *Machinery Statistical Yearbook*, Ministry of International Trade and Industry

Die exports have been increasing every year since 1993. Although die users which have transferred operations to overseas locations have advanced the localization of product development, due to the high level of technology that is required in die production, they have not been able to find supply sources to satisfy local demand nor procure dies of adequate quality, and as a result, many users continue to procure dies from Japan.

According to statistics issued by the International Die Association (ISTA) in 1994 (see Table 5-1-7), Japan's share of die production (in terms of value) among the world's leading countries is 43.3%, well ahead of the second place country, the United States, which has a share of 21.8%. Since statistics regarding production value tend to differ between countries according to the method of sampling and exchange rate settings, there is a possibility that Japan's share is exaggerated in these statistics, however, there is no doubt that Japan is one of the largest producer of dies in the world.

Table 5-1-7 Value of Die Production of Each Country

Order		Annual Production Value (US\$ Million)	Ratio
1	Japan	1,300,881	43.4
2	United States	652,697	21.8
3	Germany	310,269	10.3
4	Korea	137,083	4.6
5	Italy	126,703	4.2
6	France	118,807	4.0
7	United Kingdom	95,631	3.2
8	Australia	75,585	2.5
9	Spain	58,393	1.9
10	Belgium	46,868	1.6
11	Switzerland	42,878	1.4
12	Portugal	18,738	0.6
13	Netherlands	9,101	0.3
14	Finland	4,799	0.2
	Total	2,998,433	100.0

Source: International Die Association (ISTA)

Notes: * The production value given for Japan is the value of shipments taken from the Industrial Statistical Review (Industry).

** Only member nations of ISTA which have a numerical share are listed.

2. OTHER ASIAN MARKET

2.1 AUTOMOBILE MARKET IN ASIA

2.1.1 Trends in the World Automobile Market

Since the automobile market in the world's advanced countries has reached maturity in recent years, finished vehicle manufacturers in Europe and America are turning their attention to the new, up and coming markets of South America, Eastern Europe and Asia. According to projections made by the American survey company, J. D. Power-LMC, the average rate of automobile market growth between 1995 and 2005 will only exceed the world average of 2.0% in the up and coming regions of South America, Eastern Europe and Asia. (see Table 5-2-1). In particular, the scale of the automobile market in Asia (excluding Japan) is expected to rise to 8,790,000 units by 2005, making it a huge market, bigger than Japan. As for ASEAN, too, although internal demand has fallen sharply from the second half of 1997 in the wake of the currency crisis, it is thought that high level growth can be anticipated in the long term.

Table 5-2-1 The World Automobile Market

Unit: 10,000 Vehicles, %

	Number of Vehicles Sold		Annual Average Growth Rate
	1995 (actual figure)	2005 (forecast)	
North America	1,646	1,802	0.9
South America	203	252	2.2
Western Europe	1,361	1,612	1.7
Eastern Europe	190	426	8.4
Japan	687	669	-0.3
Asia (excluding Japan)	527	879	5.3
Four ASEAN Countries	138	184	2.9
World	5,115	6,250	2.0

Source: J. D. Power-LMC, Global Car & Truck Forecast; Sakura Bank, Economic Data (August 1998)

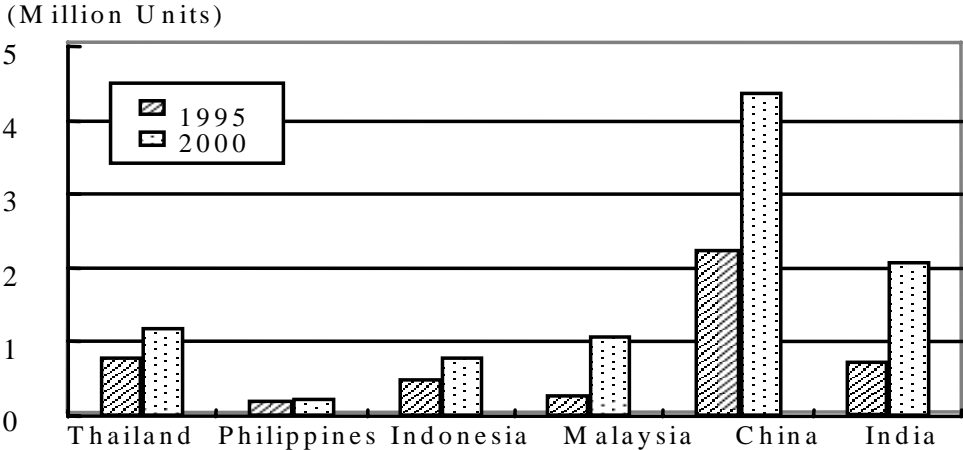
Note: Asia refers to the four ASEAN countries plus Korea, China, India and Taiwan.

The four ASEAN countries are Thailand, Indonesia, Malaysia and the Philippines.

2.1.2 Market Trends in Asia

The automobile market in Asia, including the ASEAN market, is about to enter a period of major adjustment. Although major recovery of the ASEAN market cannot be anticipated up to 2005, the major companies have aggressive plans to expand operations in the giant markets of China and India and it is likely that a large surfeit of supply will become apparent sooner or later. Having said that, when one considers the high degree of population concentration and the current low levels of car ownership that exist in Asia, there is no doubt that this region will continue to remain the world’s growth center in the medium to long term. However, for the short term up until the start of the 21st Century, the heightening of competitive pressure throughout all Asia is unavoidable and it is likely that all makers will be forced to adopt flexible business strategies in response to the market environment.

Fig. 5-2-1 Projected Production Capacity of Asian Countries



Source: *Asia - Pacific 1996 - 1999 Automotive & Motorcycle Yearbook*

2.1.3 Global Strategies of Set Makers

Japanese makers, in response to global demand trends, are aggressively promoting overseas production in the United States, Europe, Asia and countries throughout the world. However, because it is considered that demand has peaked in the United States and Asia, it is thought that companies will focus overseas production activities from 2000 onwards in Europe, which

currently accounts for a low production share of around 10%. Meanwhile, European and American makers are promoting acquisitions and tie-ups in Asia (especially ASEAN), where their presence is low compared to their Japanese counterparts. As industrial reorganization is gaining pace on a global scale, European and American makers of finished automobiles are aiming to quickly establish a business footing in Asia through advancing this policy of strategic tie-ups.

Table 5-2-2 Automobile Sales and Projections for 2005 in Asian Countries

Unit: 1,000 Vehicles, %

Country \ Year	1995		1996		1997	
		Growth Rate		Growth Rate		Growth Rate
Japan	6,865	5.2	7,078	3.1	6,730	-4.9
Korea	1,574	0.9	1,669	6.0	1,510	-9.5
China	1,564	5.7	1,499	-4.2	1,580	5.4
Thailand	572	17.7	589	3.0	360	-38.8
Indonesia	379	16.3	332	-12.4	390	17.5
Philippines	128	29.3	162	26.6	140	-13.6
Taiwan	542	-5.1	462	-14.8	480	3.9
India	639	36.0	750	17.3	760	1.3
Malaysia	286	43.0	365	27.6	410	12.3
Other	149	-	152	2.0	150	-1.3
Total	12,698	6.7	13,058	2.8	12,510	-4.2
Country \ Year	1998 (Prospects)		2000 (Forecast)		2005 (Forecast)	
		Growth Rate		Average Growth Rate		Average Growth Rate
Japan	5,950	-11.6	6,300	-2.2	6,200	-0.3
Korea	730	-51.7	1,600	1.9	1,850	2.9
China	1,620	2.5	1,850	5.4	2,500	6.2
Thailand	170	-52.8	290	-7.0	320	2.0
Indonesia	70	-82.0	270	-11.5	300	2.1
Philippines	85	-39.3	145	1.2	150	0.7
Taiwan	520	83	490	0.7	500	0.4
India	663	-12.8	880	5.0	1,120	4.9
Malaysia	130	-68.3	330	+7.0	370	2.3
Other	145	-6.7	150	0.0	160	1.3
Total	10,093	-19.4	12,305	+0.5	13,470	1.8

Source: Forecast for the Automobile Industry, prepared by the Comprehensive Engineering Research Center

2.2 ELECTRIC AND ELECTRONIC MARKET IN ASIA

2.2.1 Overview of the Market in the Wake of the Currency Crisis

Exports are struggling to grow in the electric and electronic machinery industry, which has been the driving force behind Asia's growth. Meanwhile, as a result of sluggish internal demand, prospects for the recovery of domestic sales are poor. In view of the recession in domestic markets, it is hoped that export expansion will aid economic growth. However, there is little prospect in the current situation of a rapid export drive materializing.

Table 5-2-3 Electric and Electronic Equipment Exports to ASEAN and Korea
(Unit: %)

	1995	1996	1997 Jan.- June	1997 Q3	1997 Q4	1998 Q1	1998 Q2
Korea	42.9	-3.8	-6.9	16.1	1.7	0.1	-11.8
Indonesia	16.5	27.8	20.1	-18.2	-30.5	-1.8	n.a.
Malaysia	31.1	3.1	-4.6	0.0	-6.0	-5.1	n.a.
Singapore	19.1	2.1	1.0	16.1	19.8	11.7	-0.5
Thailand	29.4	11.7	4.5	13.4	7.2	0.5	n.a.
Philippines	34.8	30.7	27.3	33.2	33.2	38.0	n.a.

Source: Prepared by JETRO based on statistics from each country (Central Bank of the Philippines, Central Statistics Agency of Indonesia, Statistics Agency of Malaysia, Korea External Trade Association, Trade Development Agency of Singapore, Central Bank of Thailand).

Note: Dollar-based growth rate.

Comparison with the same period of the previous year.

The intensification of price competition among countries is one of the factors behind the poor showing of exports. The devaluation of currencies has increased the export competitiveness of each Asian country, and competition has grown more intense with respect to home electrical appliances and AV equipment between Thailand, Malaysia and Indonesia. Summit Co. in Thailand, a maker of AV equipment parts and components, reported that it is struggling to keep up with price competition because the value of the Indonesian rupiah has depreciated

approximately two times more than the Thai baht. The market for hard disc drives, which are the major exported item of Singapore, has also been plunged into price competition due to the emergence of the Philippines and other countries as rival production centers. Japan has also become a strong competitor following depreciation of the yen. Coupled with stagnating demand within the Asian region, growth of exports to Asia's largest trading partner, the United States, is also slowing down. As a backdrop to this, competition has intensified with Mexico and other countries, which have grown in importance as production centers following establishment of the North American Free Trade Agreement (NAFTA). Other factors behind the poor export showing include, 1) stagnant market conditions for semiconductors and personal computers, 2) shortages of export containers brought about by the sudden decline in imports, and 3) greater difficulty in raising funds due to high interest rates adopted in order to stabilize currencies.

Some companies have benefited from currency depreciation. Assembly manufacturers (mainly foreign affiliated companies), which export largely to the prospering markets of Europe and the United States, manufacture products with a high added value and possess high local procurement rates, and other such companies are prospering. Because assembly manufacturers have advanced a broad range of international operations, they have been able to rapidly switch exports to areas away from the Asian market. Moreover, since the retailing capacity of assembled products is determined by differences in basic technology, such products with a high added value are able to sell well even in the conditions of hard price competition.

Since the depreciation of local currencies enables assembly manufacturers to secure locally procured materials and parts at a lower cost, companies that possess high local procurement rates stand to benefit more. However, there is a limit to the level to which companies can raise local procurement rates in each country, so it is necessary for companies to establish optimum procurement setups on a global base for materials and parts which cannot be procured within Asia alone. In this respect, companies which possess IPO (International Procurement Office) functions for promoting local procurement beyond national and corporate group boundaries in ASEAN have been the strongest. There are even some makers which are moving to expand their production centers as a result of their success in

exporting. The principle of survival of the fittest is growing ever more apparent depending on each company's business strategy.

Despite also being export-oriented concerns, parts and components manufacturers (especially local companies) find themselves in a difficult situation. The electric and electronic machinery industry in Asia still relies heavily on imports to provide raw materials because shortages of technicians in the region have meant that supporting industries have failed to mature. Even most locally procured parts and components are originally made from imported raw materials, and the depreciation of currencies has made costs soar. Moreover, companies that compete with numerous rivals are unable to negotiate price increases with assembly manufacturers, but instead are being forced to reduce prices. It is desirable for companies such as these to further advance the local procurement of parts and raw materials. However, their local procurement rates are already stretched to the limit and they are unable to carry out further shifts. Companies must strive to raise quality levels, reduce prices and increase productivity. Business conditions with some parts and components manufacturers are so severe that they are being forced to ask assembly manufacturers to trade in dollars rather than in local currencies and to offset valuation losses onto prices by borrowing foreign capital. Moreover, companies that do not possess international networks are trying to find a way out through promoting exports. However, it is difficult for them to develop new export destinations in the current business climate.

2.2.2 Production Trend

(1) Production Trend by Item

Due to internal and external market inventory adjustments and the booming demand for information and telecommunications equipment, it is thought that production of key electronic equipment in each country in 1997 will generally fluctuate at a high level. Regarding the electronics industry in Southeast Asia, which has continued to grow at a high rate in recent years, companies are reviewing the relative superiority of production centers in consideration of changes in the labor environment and prospects for conducting production in consumer areas, and the rearrangement of production centers to more

favorable locations (Indonesia, the Philippines and other ASEAN countries aiming to enter the next stage of development) is advancing.

Table 5-2-4 Trends in Production of Major Items

Unit: 1,000 Units

	Year	Korea	Taiwan	China	Vietnam	Thailand	Philippines	Malaysia	Singapore	Indonesia
Color TVs*	1996	15,905	1,264	18,000	600	7,645	1,200	10,636	3,400	3,380
	1997	16,700	780	19,000	700	7,475	1,600	9,853	2,100	5,220
TV-Videos	1996	2,036	30	1,250		920		2,364	180	600
	1997	2,370	0	1,500		1,250		2,737	120	600
Video Decks*	1996	11,560	516	7,200		3,320		12,840	2,400	5,130
	1997	11,300	500	7,500		4,370		12,736	1,500	6,800
Radio Cassettes	1996	1,830	50	65,000			800	6,807	660	3,400
	1997	1,280	50	73,800			850	4,606	600	3,000
Headphone Stereos	1996	1,044	4,462	40,000		420	500	8,432	500	4,230
	1997	1,150	4,800	42,170		800	500	7,900	0	7,200
Mobile Phones	1996	4,965	0	4,665					630	
	1997	7,500	10	6,760					850	
Personal Computers (Finished Article)	1996	2,979	8,797	1,680				390	3,300	
	1997	3,300	10,200	2,230				660	4,100	
HDD	1996	3,825		2,500		11,500	1,800	10,700	56,300	
	1997	5,400		3,500		12,700	2,700	17,200	63,600	
Color Monitors	1996	16,700	14,700	3,800		2,770			720	2,400
	1997	18,000	15,700	5,700		3,360			600	2,700
Semi-conductors**	1997	5,032	5,117	4,747		1,969	332	3,841	6,462	814

Source: 1997 Trends in the Electronics Industry in Southeast Asia, survey data of the Electronic Industries Association of Japan

Note: * Includes chassis
** Unit: US\$ million

(2) Production Trend by Country

Korea

- 1) The economy is in recession due to a slowing down of semiconductor exports and financial unease, and appreciation of the yen is the only good sign.
- 2) A spate of major bankruptcies triggered by the bankruptcy of chaebol

financial groups is occurring together with the “Korea premium.”

- 3) Because expansion was pursued at a rapid rate, key parts and supporting industries are underdeveloped, labor costs are increasing and labor disputes and other strains are surfacing.
- 4) Due to inadequate IPO management functions, companies are reverting to centralized control within Korea.
- 5) Consigned production of electronic parts and components to China (Tsingtao, Tientsin, Dairen, etc.) is increasing.
- 6) As investment continues to be made in semiconductors, liquid crystals and PDP, phrases such as “retreat if in the red” and “restructuring” have come to be heard.

Taiwan

- 1) Restrictions have been announced on investment in the Chinese mainland, however, shift of production via third party countries is advancing.
- 2) The industrial structure is changing due to growth of capital and technology-intensive sectors and service industries.
- 3) In the electronics industry, boosted by strong support by the government for specialized information equipment-related products, efforts are being put into even higher level technology and the country is growing into an integrated production center of key information equipment.
- 4) Production in the computer industry is approaching US \$25 billion (50% of Japanese production) and growth will continue into the future. Production of notepad personal computers is growing rapidly.
- 5) The shift of production of main equipment bodies including peripheral equipment is accelerating (to China and the Philippines).
- 6) In line with the emergence of local parts and components manufacturers, the share of Japanese affiliated manufacturers is falling.

China

- 1) Following a period of enthusiastically welcoming foreign capital, policy has shifted more towards state-owned enterprises and the situation is now very unsatisfactory.
- 2) Although enthusiasm is waning among foreign investors, Korean

companies are continuing to make major investments in the country.

- 3) The goal of both equipment and parts and components manufacturers to achieve in-market production is not advancing as expected due to problems of debt collection and inadequacy of the industrial base.
- 4) It is forecast that rapid advances will be made in the field of information and telecommunications equipment.
- 5) In the field of mobile phones, CDMA experimentation was commenced from the second half of 1997.
- 6) Videos and CDs are enjoying an explosion of popularity.
- 7) Development of Putung New District in Shanghai as a center of economy, trade and finance is advancing.

China

(including
Hong Kong
and South
China)

- 1) Prior to the reversion of Hong Kong on July 1, 1997, strengthening of relations with the South China economic region is advancing.
- 2) Production of labor-intensive low-end sets in the Shinsen special economic zone will spread to beyond the zone and to inland areas, while production of OA equipment, monitors and printers will expand in the South China region.
- 3) It appears that the securing of distribution routes in response to the dispersion and expansion of production centers and nationwide growth of markets will have a major effect on future development.
- 4) Production of videos and CDs is rapidly expanding.
- 5) Taiwanese affiliated electronic parts and components manufacturers are making rapid advances into the South China region.

Vietnam

- 1) Although the government has adopted the policy of Doimoi (economic liberation), because numerous problems still exist in terms of legislative regulations and systems, investment from overseas is stagnant.
- 2) GDP is continuing to show a high rate of growth (9.3% in 1996). Construction-related sectors are providing the driving force behind this.
- 3) Demand for CTV has reached 1,000,000 units. However, smuggling from neighboring countries is rife and domestic production stands at only 600,000-700,000 units.

- 4) In the electronics industry, efforts are being made to strengthen the corporate base through moving away from consigned production towards joint and independent capital enterprises.
- 5) Companies belonging to Korean financial groups (chaebol) continue to conduct much investment in Hanoi.

Thailand

- 1) Economic growth has suddenly slowed down due to a poor export showing and stagnation of internal demand. Financial unease is also occurring due to massive bad debt problems.
- 2) Due to the falling international competitiveness of labor-intensive industries, the issue of shifting to high added value industries is receiving attention.
- 3) There is a tendency among Japanese affiliated companies to partially shift manufacturing centers to surrounding regions (third zones) where wages are cheaper.
- 4) Production of car audio systems and HDD is expanding.
- 5) The world's major auto makers have located in Thailand and the country is becoming a major automobile production center.

The
Philippines

- 1) Attention was directed at the business climate assessment in response to the result of presidential election in 1998.
- 2) Policies to promote economic liberation and the introduction of foreign capital have been adopted under the slogan of "Philippines 2000," and the country is growing as an export base for the electronics industry.
- 3) Relatively large-scale expansion of production is continuing based around Japanese affiliated companies with respect to electronic equipment products such as car stereos, cordless phones, FDD and HDD.
- 4) In the field of electronic parts and components, American affiliated companies have taken the initiative regarding semiconductors.

Malaysia

- 1) The government has launched the MSC (Multimedia Super Corridor) program and is striving to encourage transition to high added value

industries such as information and telecommunications equipment.

- 2) Production of electronic equipment peaked in 1995, while production of AV equipment has shifted to surrounding countries and is falling. However, production in personal computer-related areas is growing.
- 3) Set makers centering around AV equipment are improving their research and development functions and increasing relative status with Japan.
- 4) Production of electronic parts and components is maintaining double digit growth in line with the expansion of information-related equipment production, and Malaysia is becoming one of the world's top parts and components production centers.

Singapore

- 1) As localization advances in surrounding countries, there are doubts whether Singapore can maintain its role. IPO turnover is in decline after reaching a peak in 1992.
- 2) Utilizing the country's superior business infrastructure (telecommunications, transportation, finance, etc.), the government is forcefully promoting the attraction of high tech industries.
- 3) Among equipment manufacturers, more and more companies are seeking to promote division of functions with surrounding countries and enhance so-called RHQ.

Indonesia

- 1) Indonesia possesses a population of approximately 200 million and this is increasing at a rate of 3,000,000 (equivalent to the population of Singapore) every year.
- 2) Investment from Japan is increasing as a result of deregulation and trade promotion policies.
- 3) As is seen in the Timor national car project, major investment in the electronics industry is also being carried out by Korea.
- 4) Production of CTV, headphone stereos and printers, etc., is growing rapidly.

. Source: Electronic Industries Association of Japan

Note: This survey relates to conditions as of June 1997

2.3 RESPONSE OF JAPANESE AFFILIATED COMPANIES TOWARDS THE CURRENCY CRISIS

2.3.1 Automobiles

Asian markets for automobiles have sharply shrunk after the currency crisis in 1997. Table 5-2-5 summarizes responses that have been adopted by Japanese affiliated automobile manufacturers in the wake of the currency crisis in Asia. Because vehicle sales have decreased dramatically, many companies have been forced to carry out downsizing of production, temporary suspension of operations, freezing of new investment, reduction of work forces, and so on.

However, the thing that deserves most attention is the fact that companies predict that the ASEAN market will once again grow in the future and are preparing for this by taking measures to maintain production networks, strengthen competitiveness and support local suppliers. Accordingly, there are hardly any cases of companies totally withdrawing from ASEAN.

Automobile assemblers in the Asian markets are trying to increase exports to such markets as Japan and other Asian markets in order to maintain their operation.

**Table 5-2-5 Trends of Japanese Automobile Manufacturers
towards the Currency Crisis**

Term	Measures	Contents
Short-term Response	Production downsizing	<ul style="list-style-type: none"> - Reduction of production/ temporary suspension of operations - Suspension of consigned production - Freezing of investment plans - Postponement of new model launches
	Work force reduction	<ul style="list-style-type: none"> - Use of temporary workers/reduction of full-time employees
	Retailing measures	<ul style="list-style-type: none"> - Sales promotion campaigns - Strengthening of auto loans
	Support of local parts and components manufacturers	<ul style="list-style-type: none"> - Advance payment - Raising of parts and components purchase prices - Discussion of support measures with Japanese affiliated finished vehicle manufacturers
Long-term Response (Reorganization of Production Setup)	Revision of suppliers and retail destinations	<ul style="list-style-type: none"> - Promotion of local and regional procurement - Expansion of exports (finished vehicles, parts and components)
	Financial support for local corporate persons	<ul style="list-style-type: none"> - Increased investment and raising of the investment share of headquarters in Japan - Plant integration
	Integration of plants	<ul style="list-style-type: none"> - Integration of plants in the same country through closure of deteriorated plants, etc. - Improvement of technology and quality systems
	Improvement of technology and quality systems	<ul style="list-style-type: none"> - Training of employees in Japan - Acquisition of ISO certification, etc.

Source: Prepared by Sakura Bank

Table 5-2-6 Plans of Finished Vehicle Manufacturers for Exporting from ASEAN

Company Name	Country of Production	Export Destination	Export Item	Remarks
Daihatsu	Indonesia	China	Commercial vehicles (Hijet)	
Hino	Thailand	Japan	Resin parts and components	
Honda	Thailand	Middle East	Passenger cars (City)	Started in September 1998
		Singapore, Brunei	Passenger cars (City)	
		Australia, New Zealand	Passenger cars (Accord)	Scheduled to start at the end of 1998
		Japan	Exterior parts (aero parts) for product brands	Scheduled to start in 1998
	Europe	Aluminum wheels for Accord cars	Scheduled to start in 1998	
	Thailand, Malaysia	Japan	Press parts for Accord cars going to the United States	
Isuzu	Indonesia	Japan	Engine parts, diesel engines	Planning stage
		Philippines	Transmission cases	Planning stage
	Philippines	Japan, Thailand	Transmissions	Planning stage
		Africa, Latin America	RV	Planning stage
	Thailand	Philippines, Japan	Engines	
		Egypt	Engines	Started at the end of August 1998
		South Africa	Engines	Scheduled to start at the start of 1999
		Indonesia	Engine parts	Under consideration
	Cyprus, Malta	Pickup trucks, 4WD	Sample export in May 1998	
Mazda	Thailand	Australia, etc.	Pickup trucks (Fighter)	Export to Australia scheduled to start in autumn 1998
		Japan	Glass	set for introduction to Japan in 1999
Mitsubishi	Philippines	Japan, Taiwan, Thailand	Transmission gear parts	
	Thailand	Europe, Australia, etc.	1-ton pickup trucks	
		New Zealand	Passenger cars (Lancer)	Started in July 1998
		Japan	Parts for Lancer cars	
	United States	Sheet metal parts for the new Gallant		
Nissan	Philippines	Middle East	AD Resort (0.5-ton pickup trucks)	Started in May 1998
		Mexico	Undecided	Under consideration
	Thailand	Japan	Parts	Under consideration
		Australia, New Zealand	Pickup trucks	Scheduled to start in 1999
Nissan Diesel	Philippines	Japan, etc.	Large buses	
Toyota	Malaysia	South Africa	Steering links	Under consideration
	Philippines	Japan, South Africa	Transmissions	Started in April 1998
	Thailand	Australia, New Zealand	Pickup trucks (Hylux)	Scheduled to start in autumn 1998
		Japan	Diesel engines (for High Ace vehicles destined for export to Europe)	
		Japan	Engine blocks, cam shafts	
Indonesia	Brunei, New Guinea, Malaysia, Philippines	Commercial vehicles (Kijan)		

Source: Prepared by Sakura Bank from various sources

Table 5-2-7 Major Export Plans of Japanese Affiliated Automotive Parts and Components Manufacturers

Company Name	Contents
Thailand	
Seyren	Export of automobile interior finishing materials to Japan started in January 1998.
Unisia Shecks	Export of 3,000 power steering pumps per month to the Nissan production base in Taiwan started in January 1998.
Denso	Exports of starters, etc., to Japan and then Brazil were started in January 1998 and February 1998, respectively.
Nippatsu	This company exports plate springs to Japan.
Asahi Tech	This company plans to increase exports of aluminum wheels to Japan from 20,000 per month to 30,000 per month some time in 1998.
Tokiko	In addition to exporting shock absorbers to Japan and the United States, this company started exporting disc brakes to Japan in March 1998. These are exported for assembly in Japan after undergoing machine processing locally. There are also plans to increase exports of shock absorbers for repair use.
Automobile Parts and Components Industries	Machine processing work on propeller shafts and lock arms (for export to Japan) was transferred from Japan in May 1998. These products will be supplied after being sent to Japan to undergo assembly and quality assurance.
Toyo Furnace	In April 1998, this company announced that it would undertake production of new model high added value canisters (transferred from Japan) and export 240,000 of these new and conventional models to Japan.
Mitsuba	This company plans to transfer all production of IC flasher relays (150,000 per month) to Thailand and start exporting to Japan. It is also currently considering the possibility of exporting other products to Japan.
Nishikawa Rubber	This company transferred part of its production of rubber seal parts for doors from Japan to Thailand and started exporting to Japan in April 1998.
Toyota Composite	From August 1998, this company plans to transfer production of aluminum die cast handle cores (3,000 per month for supply to corporations in Taiwan) from Japan to Thailand, and it plans to transfer production of leather-winding handles (4,000 per month) from the United States in September 1998. Both products will be exported from Thailand.
Stanley Electric	This company aims to increase its export ratio from 5% at present to 30% by 2001-2003. In addition to existing exports to centers in Japan and the United States, it plans to export another 800 million yen worth of products to Japan during 1998. Moreover, as the mother plant in the Asian region, it plans to promote parts and components supply to production centers in India and Vietnam.
Atsumi Tech	This company plans to transfer production of gear shift forks from Japan to Thailand and start exporting to Japan in September 1998.
Tokyo Parts Industries	This company plans to start exporting water pumps to Japan in July 1998. Approximately 20% of production will be exported to assembly manufacturers after first undergoing quality inspection on arrival in Japan.
Zexel Corp.	In November 1998, this company announced plans to export car air conditioner parts and components, etc. to Japan and Europe. In August 1998, it announced that it would transfer production of compressors for Volvo in Sweden from Japan.
Yanagawa Precision Machinery	This company plans to export 100 million baht of automobile engine parts to Japan some time in 1998.
Toyota Spinning	This company is bolstering exports of sheet fabric. It has started exporting to a Toyota plant in Turkey and plans to start exporting to Japan between October 1998 and May 1999.

Table 5-2-7 Major Export Plans of Japanese Affiliated Automotive Parts and Components Manufacturers (Continued)

Company Name	Contents
Bridgestone	This company transferred production from Japan and started exporting to the Asian region in 1997, and the United States, the Middle and Near East, and Africa in 1998. It plans to increase its export ratio from 2% at present to 25%. Since it appears to have secured the necessary operating rate through exporting, it announced the restart of works on expanding its No. 2 plant (scheduled for completion by the end of 1999) in June 1998.
Indonesia	
Kansei Corp.	This company started exporting meters for passenger cars to Japan in October 1997. Depending on economic recovery in ASEAN, it is also considering exporting to Europe and America.
Bridgestone	This company plans to bolster exports to the Asia-Pacific region from its No. 1 plant, thus raising the export ratio of this plant from 12-13% to 20%. In June 1996, since it appears to have secured the necessary operating rate through exporting, it announced the restart of work on expanding its No. 2 plant.
Sumitomo Wiring Systems, Ltd.	In July 1998, this company announced that it had started exporting wire harnesses to Japan ahead of schedule (this was originally planned to start at the end of 1998). It also plans to transfer as much production as possible from Japan and end its temporary layoff of local workers in January 1999.
Sumitomo Rubber Industries, Ltd.	This company is bolstering exports of tires. Following on from exporting to the United States (commenced at the start of 1998), it plans to start exporting to Europe some time in 1998 and Japan at the start of 1999. This company was originally intended to act as an export center, and because exports to the United States are going well and exports to Europe are also planned, it plans to raise its operating rate to 95% during 1998.
Philippines	
Tokai Rika Co., Ltd.	This company has decided to start exporting 10,000 lever combination switches per month to the United States in March 1999. This is in response to new orders from Japanese affiliated finished vehicle manufacturers, who are impressed with the cheap prices, etc., of this company's products.

Source: Prepared by Sakura Institute based on newspaper reportage, etc.

2.3.2 Electric Machinery

The impact of the Asian currency crisis on the household electrical appliances industries in the major Asian countries is as shown in Table 5-2-8.

Table 5-2-8 Impact of Asian Currency Crisis on Household Appliances Industry by Country

	Malaysia	Thailand	Philippines	Indonesia
Production facility types	Mainly export Very few domestic sales	Basically export oriented, but with some domestic sales	Domestic demand Very few exports	Export oriented and domestic demand oriented
Representative products	AV, air conditioners	White products, AV	General household electrical appliances (small scale)	Mainly AV
Level of impact on production (domestic sales)	Low	Serious impact on domestic sales (disruption began in October, 1995)	Impact becoming visible (began from October, 1997)	Serious impact on domestic demand (dropped below previous year's performance from September, 1997)
Production in 1997	Down from previous year	Down from previous year	Up over previous year, but growth has slowed significantly	Up over previous year, boosted by exports

The effect on companies differs depending on whether their factories in such country as Thailand are used as exporting bases or as supply centers for the local market. The most common responses of companies in anticipation of further economic recession and decline in demand have been to postpone investment plans (Mitsubishi Electric Corp.) and to raise product prices in line with rising import costs.

Mitsubishi Electric Corp.: Plans for construction of a new refrigerator plant in Thailand have been put on hold. The company predicts zero growth for the Thai economy in 1998 and expects it will take two or three years for economic recovery to start in earnest. Price rises are under consideration.

Sony: The company has decided to partially raise AV equipment prices

from September. It seems that the price of locally produced products, which account for more than 60% of production, will rise by around 5-6%, and the price of imported items (less than 40%) will rise by more than 10%. The company has also adopted exchange reservation.

Matsushita: Most production is intended for local consumption and it appears that the company will not raise prices in the immediate future. However, it has raised prices of imported items by around 5-10%. The company has also adopted exchange reservation.

Sharp: Price rises of around 5% are planned.

2.3.3 Construction Machinery

The construction machinery industries in the Asian region have faced with the drop in domestic demand due to the stagnant construction business as results of the suspension of public civil works and the end of building construction boom. In the current climate of falling demand and difficult business conditions, Japanese affiliated manufacturers are being forced to revise downward their production and export plans. For example, major Japanese companies operating in Thailand have the following plans:

Komatsu: Production for 1997 was revised downwards from 650 to 600 units.

Hitachi Construction Machinery Co., Ltd.: Plans for the construction of a local plant (originally scheduled for 1998) are under review.

Sumitomo Construction Machinery Co., Ltd.: A 30% fall in exports is forecast in the first half of this year.

Furukawa Co., Ltd.: Plans for setting up during 1998 are unchanged, however, the company expects to export products to surrounding countries rather than supply to the local market.

2.4 THE PARTS AND COMPONENTS INDUSTRY IN ASIA

The machinery industry in Asia has displayed a high level of growth fueled by the expansion of product trading, which in turn has been triggered by development of the automobile and electric machinery industries. However, compared to the development of these industries, the parts and components industry is still lagging behind, and imports of parts and components and semi-finished products from foreign countries are indispensable. As a result, a negative cycle is created whereby the more that products are exported, the more imports increase.

2.4.1 Present Situation of Automotive Parts and Components Industry in ASEAN

The present situation of the automotive parts and components industry in the ASEAN countries are summarized in Table 5-2-9.

**Table 5-2-9 Current Status of Automotive Parts and Components Industry
in ASEAN Countries**

	Thailand	Malaysia	Philippines																																														
Domestic production of parts and components	Depends on the company, but around 60%. (Parts supply sources by classification are shown in Table 5-2-10)	80% or more for Proton. Average is 50%. (Localized parts are shown in Table 5-2-11)	Industry experts estimate automobile local supply rate to be around 20%.																																														
Number of parts manufacturers	Approx. 600	Approx. 200	<u>Approx. 170</u> Metal 84 Rubber 25 Seats, etc. 17 Plastics 15 Electrical 14 Other 15 Domestic and foreign subsidiaries 42 (Source:BOI)																																														
Export/ Import trends	<p align="center">Automobile related exports in Thailand</p> <p align="center"><u>Unit: Million Baht</u></p> <table border="0"> <tr> <td></td> <td align="center"><u>1994</u></td> <td align="center"><u>1995</u></td> </tr> <tr> <td>Automobiles</td> <td align="right">2,937</td> <td align="right">3,382</td> </tr> <tr> <td>CBU</td> <td align="right">2,002</td> <td align="right">2,107</td> </tr> <tr> <td></td> <td align="right">(8,188)</td> <td align="right">(7,296)</td> </tr> <tr> <td>Engines</td> <td align="right">492</td> <td align="right">673</td> </tr> <tr> <td>Others</td> <td align="right">444</td> <td align="right">601</td> </tr> <tr> <td>Motorcycles</td> <td align="right">4,791</td> <td align="right">7,510</td> </tr> <tr> <td>CBU</td> <td align="right">4,281</td> <td align="right">7,160</td> </tr> <tr> <td></td> <td align="right">(155,082)</td> <td align="right">(254,192)</td> </tr> <tr> <td>Parts</td> <td align="right">492</td> <td align="right">289</td> </tr> <tr> <td>Spare parts</td> <td align="right">19</td> <td align="right">61</td> </tr> <tr> <td>Grand total</td> <td align="right">7,729</td> <td align="right">10,891</td> </tr> </table> <p>Source: Thai Industrial Federation, Automobile Section</p> <p>Note: Figures in parentheses are numbers of vehicles. Imported CBU for 1995 were 54,619 vehicles.</p>		<u>1994</u>	<u>1995</u>	Automobiles	2,937	3,382	CBU	2,002	2,107		(8,188)	(7,296)	Engines	492	673	Others	444	601	Motorcycles	4,791	7,510	CBU	4,281	7,160		(155,082)	(254,192)	Parts	492	289	Spare parts	19	61	Grand total	7,729	10,891	<p align="center">Size of automotive parts market</p> <p align="center"><u>Unit: Million RM</u></p> <table border="0"> <tr> <td></td> <td align="center"><u>1996</u></td> </tr> <tr> <td>Domestic production</td> <td align="right">2,310</td> </tr> <tr> <td>Exports</td> <td align="right">193</td> </tr> <tr> <td>Imports of repair parts</td> <td align="right">919</td> </tr> <tr> <td>Imports or CKD parts</td> <td align="right">2,393</td> </tr> </table>		<u>1996</u>	Domestic production	2,310	Exports	193	Imports of repair parts	919	Imports or CKD parts	2,393	<ul style="list-style-type: none"> - The Philippines do not export any CBU, and exports are basically automotive parts and components (particularly, transmission related). - Exports to Japan, the US and Thailand are especially high. - The majority of imports are metal parts. - Viewed over time, imports more than doubled in the period from 1993 to 1994, then decreased by 10% in 1995, and held steady in 1996. - Main items are gear boxes and transmission systems. Some 80% of imports are from Japan.
	<u>1994</u>	<u>1995</u>																																															
Automobiles	2,937	3,382																																															
CBU	2,002	2,107																																															
	(8,188)	(7,296)																																															
Engines	492	673																																															
Others	444	601																																															
Motorcycles	4,791	7,510																																															
CBU	4,281	7,160																																															
	(155,082)	(254,192)																																															
Parts	492	289																																															
Spare parts	19	61																																															
Grand total	7,729	10,891																																															
	<u>1996</u>																																																
Domestic production	2,310																																																
Exports	193																																																
Imports of repair parts	919																																																
Imports or CKD parts	2,393																																																

Table 5-2-10 Sources of Automotive Parts Supply in Thailand

	Import	Import/Local Procurement	Local Procurement
Engine	Engine Mount	Combustion Chambers Valve Distributor Cover	Packing
Cylinder and Crank Shaft	Crank Shaft Connecting Rod	Main Bearing, Bearing Cylinder Ring, Cylinder Liner	Cylinder
Cam Shaft and Bulb	Cam Shaft, Valve Guide & Sheet, Cam Shaft, Spocket	Rock Arm, Engine Valve	Timing Belt, Valve Spring
Fuel	Oil pump, Fuel Injection Assy, Carburetor Assy	Oil Filter	Oil Tank, Oil Line
Intake and Exhaust		Intake Manifold	Exhaust Pipe, Air Cleaner, Muffler
Lubricating and Cooler	Oil Cooler, Oil Pump, Water Pump		Oil Filter, Radiator
Suspension	Lower and Upper Arms		Spring Shock Absorber, Control Arms
Shaft	Knuckle, Shaft, Wheel Hub		
Break	Master Cylinder, Brake Booster, Disc Brake Caliper	Brake Disc	Brake Drum, Brake Pedal, Brake Hose
Clutch	Clutch Master	Clutch Assy	Clutch Pedal

Source: JETRO

Table 5-2-11 List of Localized Automotive Parts in Malaysia

Parts Group	Major Items
Body Parts & Panels	Safety Glass, Weather Strips, Body Moldings
Engine Parts	Castings, Manifolds, Filters, Radiators, Radiator Hoses, Air Filter Housing, Spark Plugs, Pistons, Piston Liners
Drive, Transmission & Steering Parts	Nuts, Gear Shift Components, Drive Shaft, Clutch, Wheel Rim, Wheel Nuts & Studs, Rack & Pinion Steering Assembly, Brake & Suspension Parts (e.g. coil & leaf spring), U-bolt & Shackle Assembly, Shock Absorber, Brake Drum, Brake Disc, Brake Pad
Electrical Parts	Battery, Horn, Wiring Harness, Alternators, Starter Motors, Voltage Regulator, Wiper & Washer Assembly, Instrument Clusters, Relays, Clock, Fuse Box, Headlights & Other Lights
Trim & Upholstery	Carpet, Floor Mat, Rear Parcel Shelf, Seat Assembly, Safety Belt, Melt Damping Sheet
General Parts	Paint & Thinner, Underseal, Tyre, Tubes, Air conditioner, Radio, Screw jack & Tool Sets, Fuel Tank, Exhaust System, Control Cables, Mirrors

Source: MACPMA

2.4.2 Present Situation of Electric and Electronic Parts and Components Industry in ASEAN

The present situation of the electric and electronic parts and components industry in the ASEAN countries are summarized in Table 5-2-12.

Table 5-2-12 Current Status of Electric and Electronic Parts and Components Industry in ASEAN Countries

	Thailand	Malaysia	Philippines																												
Domestic Production of Parts and Components	Parts supply ratio is now 90% of the monetary value. AV equipment parts supply is 70%, telecommunications and OA equipment around 20%. White products', etc., over 90%.	Electrical appliances 85% Electronic appliances 40 to 50% Source: <i>Present Situation and Problems of the Malaysian Machinery Industry</i> , JETRO, January, 1998.	Large differences in household electrical appliances, depending on the product item. Details not available. Electronics are from 15 to 20%.																												
Numbers of Parts and Components Manufacturers	<table border="1"> <tr><td>Thailand</td><td>105</td><td>Hong Kong</td><td>9</td></tr> <tr><td>Japan</td><td>94</td><td>Switzerland</td><td>8</td></tr> <tr><td>Taiwan</td><td>57</td><td>Hong Kong</td><td>6</td></tr> <tr><td>USA</td><td>22</td><td>Korea</td><td>6</td></tr> <tr><td>Singapore</td><td>12</td><td>China</td><td>5</td></tr> <tr><td>UK</td><td>9</td><td>Germany</td><td>4</td></tr> <tr><td>Others</td><td>15</td><td>Total</td><td>352</td></tr> </table>	Thailand	105	Hong Kong	9	Japan	94	Switzerland	8	Taiwan	57	Hong Kong	6	USA	22	Korea	6	Singapore	12	China	5	UK	9	Germany	4	Others	15	Total	352	Electrical Equipment Sector Approx. 250 Electronic Equipment Sector Approx. 850	Household Electrical Appliances 64 Electronic Equipment 194
Thailand	105	Hong Kong	9																												
Japan	94	Switzerland	8																												
Taiwan	57	Hong Kong	6																												
USA	22	Korea	6																												
Singapore	12	China	5																												
UK	9	Germany	4																												
Others	15	Total	352																												
Import/Export Trends	<p>Exports Thailand is working to create a position for itself as an international production base. The situation becomes much clearer upon examination of the export figures. Exports have grown at an outstanding pace since 1985. Exports have grown steadily over a whole range of products, other than radio cassettes and black and white TVs, and colour TVs, air conditioners and refrigerators are expected to continue to perform well in the future.</p> <p>Imports A comparison of Thailand's export and import trade figures for electrical and electronic equipment shows a 4:1 ratio in household (both electric and electronic) appliances, 63.5% for industrial electricals, 1:8:1 for industrial electronics, 23.4% for electrical parts and components, 78.5% for electronic parts and components. Exports topped imports in household electric appliances and industrial electronic equipment, while imports topped exports in industrial electrical equipment and electrical and electronic parts and components. In the electrical and electronic sector, the parts and components imports share of the import value was 75%. Viewing the electronics sector only, the percentage is even higher, at 80%. In both imports and exports, the monetary values for ICs and computer parts and components are exceptionally noticeable.</p>	Exports for 1996 showed a 7.8% growth on the previous year, but this is a significant drop compared to the 27% growth posted in 1995, reflecting the worldwide slump in demand. The total export value for 1996 was 96.7 billion RM (89.7RM in 1995). Particularly noticeable is the 3.4% decrease in exports of household appliance related electronic equipment. • As for imports, in comparison with 1995's 26.9% increase over the previous year, 1996 posted an increase of just 3.5%. This is believed to be due to the effect of the slowing of production in the electrical industry. In the first quarter of 1997, reflecting the overall slump in demand, import and export figures for household electronic appliances were about 10% of the same period of the previous year. While both imports and exports of industrial electronic equipment continued to expand, in general, both imports and exports in the electrical and electronic industries began to show signs of a slowdown, beginning in 1996.	The top ten imported electrical product items are as described in Table 6-2-16. There has been steady growth of over 15% every year, and imports of color TV cathode ray tubes were 37% up on the previous year in 1994, and 50% up in 1995. The top ten imported electronic products items (including parts) are shown in Table 6-2-17. Particularly noticeable here are dice for semiconductors, which account for around one quarter. In 1995, this represents a 200% increase over the figures for 1993. Viewed overall, electronics imports (including parts and components) have been increasing over 35% each year, since 1993.																												

Table 5-2-13 Imports of Electric Products and Parts of Thailand

Unit: Million Baht

Product	1993	1994	Jan - Jun		
			1994	1995	Percentage change (%)
1. Household electrical appliance	3,181	3,938	1,793	2,489	39
- Fan	261	210	124	148	19
- Air – conditioner	14	90	40	69	73
- Refrigerator	103	131	66	63	-5
- Lamp	859	1,058	500	755	51
- Washing machine	641	831	388	604	56
- Electric heating appliances	804	893	335	434	30
2. Industrial electrical appliance	24,101	25,916	12,659	13,773	9
- Fan	726	771	337	707	110
- Air – conditioner	918	1,163	553	467	-16
- Motor and generator	2,290	2,770	1,502	1,525	2
- Transformer	3,137	2,964	1,617	1,563	-3
- Converter and inductor	2,410	3,700	1,580	2,575	63
- Generator	8,955	6,214	3,551	2,012	-43
3. Parts & Components	37,703	41,255	19,328	23,080	19
- Compressor	4,272	5,223	2,554	3,341	31
- Fan components	569	753	311	712	129
- Air - conditioner components	828	938	443	647	46
- Refrigerator components	596	616	291	352	21
- Motor and generator components	10,607	5,450	2,828	2,888	2
- Transformer components	1,221	1,440	624	1,023	64
- Wire and cable	3,112	3,762	1,755	2,246	28
Total	64,985	71,109	33,780	39,342	16

Source: Dept. of Business Economics

Table 5-2-14 Imports of Electronic Products and Parts of Thailand

Unit: Million Baht

Product	1993	1994	Jan - Jun		
			1994	1995	Growth (%)
1.Consumer electronics	10,572	12,855	5,769	8,043	39
- Television	1,916	2,512	1,205	1,646	37
- Video	1,783	2,246	934	1,559	67
- Stereo and radio	3,646	4,735	2,158	2,990	39
- Electronics Clock	1,628	1,608	681	890	31
2.Industrial electronics	24,380	37,901	17,141	20,468	19
- Computer	9,507	12,825	5,823	7,378	27
- Fascimile and transceiver	6,117	11,690	5,103	6,453	26
- Copy machine	1,177	1,584	766	891	16
- Telephone exchange system equipment	1,895	5,570	2,561	2,043	-20
- Telephone	653	1,347	590	999	69
3.Parts and components	139,412	201,981	87,802	110,223	26
- IC	23,533	35,900	15,465	17,734	15
- Color TV picture tube	5,165	8,346	3,570	5,712	60
- Printed circuit board	3,386	4,914	2,165	4,234	96
- Capacitors	3,881	6,375	2,767	4,189	561
- Computer components	29,452	40,158	18,770	21,625	15
- IC components	25,188	31,921	13,762	18,874	37
- Stereo components	4,857	6,884	2,853	3,349	17
- Telephone components	4,708	3,857	2,238	1,820	-19
- Radio and TV components	3,130	2,948	1,310	1,784	36
Total	174,364	252,737	110,712	138,734	25

Source: Dept. of Business Economics

Table 5-2-15 Trade of the Electric and Electronic Industry in Malaysia

Unit: Billion RM

Product	Export/ Import	1996	1995	Growth Rate (%)	1997 Jan - Mar	1996 Jan - Mar	Growth Rate (%)
Electronic Equipment							
Consumer Equipment	Export	29.9	30.9	-3.4	6.3	7.1	-11.0
	Import	8.2	9.8	-16.4	1.7	1.9	-9.8
Industrial Equipment	Export	22.7	18.0	26.0	6.8	5.2	30.4
	Import	9.9	7.1	40.9	2.6	2.3	14.0
Parts	Export	35.2	33.1	6.3	9.5	9.8	-3.8
	Import	40.3	39.3	2.6	10.0	10.7	-6.9
Electric Equipment	Export	8.9	7.6	16.8	1.9	1.4	40.8
	Import	15.5	15.4	1.2	3.6	3.6	-2.0
Total	Export	96.7	89.7	7.8	24.4	23.5	4.2
	Import	74.0	71.5	3.5	17.9	18.6	-3.7

Source: MITI Report 1996/97

Table 5-2-16 Major Import Items of Electric Equipment of the Philippines

Unit: Thousand US\$

Product	1993	1994	1995	1996*
Insulating fittings for electrical machines, appliances or equipment, being fittings wholly of plastic materials apart from any minor components of metal incorporated during molding solely for purposes of assembly	47,049	78,057	93,615	19,474
Optical fiber cables made up of individually sheathed fibers, whether or not assembled with electric conductors or fitted with connectors				15,981
Electrical apparatus, n.e.s., for switching or protecting electrical circuits, or for making connections to or in electrical circuits, for a voltage not exceeding 1,000 volts	41,510		72,038	15,313
Other fixed capacitors, n.e.s.	29,216	42,584	81,625	15,281
Parts suitable for use solely or principally with the apparatus falling within subgroups 772.4, 772.5 and 772.6, other than those of sub-item 772.82-01	86,741	39,766	25,187	9,106
Color television picture tubes, cathode-ray(including video monitor cathode-ray tubes)	26,536	36,234	54,786	10,179
Other electric conductors, not fitted with connectors, for a voltage not exceeding 80 V but not exceeding 1,000 V	12,102	25,000	31,762	8,924
Other electric conductors, not fitted with connectors, for a voltage not exceeding 80V	41,339	52,684	45,590	7,686
Other refrigerating or freezing equipment(electric or otherwise), n.e.s.	12,246		24,988	7,376
Other fixed resistors, n.e.s.		16,615	23,505	
Sub-total	249,689	212,884	359,480	89,847
Others	411,906	549,046	522,335	153,143
TOTAL	661,595	761,930	881,815	242,990

Source: Bureau of Export Trade Promotion-EDP Division, Department of Trade and Industry

Note: * January to March 1996 only

Table 5-2-17 Major Import Items of Electronic Equipment of the Philippines

Unit: Thousand US\$

Product	1993	1994	1995	1996*
Dice of any material, imported on consignment basis for the manufacture of semi-conductor devices	889,624	1,488,396	1,818,089	604,861
Material and accessories imported on consignment basis for the manufacture of other electrical and electronic machinery, equipment and parts	530,250	723,243	1,359,225	399,427
Parts of electronic integrated circuits and micro assemblies	478,102	680,309	724,640	226,875
Other materials and accessories imported on consignment basis for the manufacture of semi-conductor devices	282,591	324,022	389,024	136,014
Parts and accessories of the machines of group 752	139,582	171,673	286,260	102,728
Telephonic switching apparatus when imported by or for telecommunication companies under prior authorization of the Board of Communication(No.)	78,055	189,451	219,622	56,013
Transmission apparatus for radio telephony, radio-telegraphy, radio broad-casting or television, when imported by or for telecommunication companies under prior authorization of the Board of Communications	63,626	80,299	198,758	54,464
Parts and accessories of the apparatus and equipment of subgroups 764.3 and 764.8(excluding television camera parts and accessories)	100,159	95,704	176,635	43,773
Parts and accessories of other telephonic or telegraphic apparatus(including such apparatus for carrier-current line systems)	70,739		110,256	44,677
Input or output units, whether or not presented with the rest of a system and whether or not containing storage units in the same housing		70,887	93,460	31,632
Sub-total	2,632,728	3,823,985	5,375,967	1,700,463
Others	1,382,410	1,853,291	2,309,623	598,697
TOTAL	4,015,138	5,677,276	7,685,591	2,299,160

Source: Bureau of Export Trade Promotion-EDP Division, Department of Trade and Industry

Note: * January to March 1996 only

2.4.3 Present Situation of Metal Materials Processing Industry in ASEAN

(1) Casting Industry

Except for in India and China, casting was established as an industry in Asia after World War II. The industry developed relatively quickly in Taiwan and Korea and spread to the ASEAN countries from the 1970s. This is useful information when viewing the casting industry in Asia as a whole.

In recent years, India and China have emerged as exporters of castings because these countries can offer excellent cost performance (personnel costs, raw materials costs, etc.) compared to Korea and Taiwan. As for ASEAN countries, although personnel expenses are on a par with those in China, since these countries rely on imports to provide most raw materials, their costs are higher and they find it difficult to compete in the case of not processed cast products.

(2) Forging Industry

The forging industry, which supports the automobile industry, was one of the latest materials processing sectors to develop in Asia due to the slow development of the automobile industry in the region (excluding Japan).

Even in Korea, 100% localization has not been achieved, and this industry is at a low level of maturation within the environment of localization regulations that exist in Asian countries.

(3) Metal Press Industry

Among materials processing industries, metal pressing was relatively quick to develop following World War II. Because large quantities of press parts and components are used in automobiles and electric machines, etc., assembly makers were quick to promote internal manufacture and parts and components vendors were fostered. Having said that, the industry is still underdeveloped in the field of precision processing.

(4) Die Industry

The die industry, once monopolized by Japan, has also witnessed the emergence of Korea, Taiwan and Singapore as makers of general purpose products.

The die industry has distinctive features in each country, and recently Malaysian dies (precision dies) have been attracting attention.

Table 5-2-18 Size of the Die Market in Selected Asian Countries in 1995

Unit: Billion Yen

Item	Taiwan	Singapore	Malaysia	Thailand
Domestic market size	156.0	60.0	53.0	55.0
Domestic production	186.0	36.0	12.5	10.0
Exports	48.0			5.0
Imports	18.0	24.0	40.5	50.0
Features	High export ratio	High reliance on imports	Very high reliance on imports	Very high reliance on imports

Source: Prepared by SRC from JETRO data

Table 5-2-19 Overview of the Casting Industry in Asian Countries

Country	Overview of the Industry	Main Applications
China	<ul style="list-style-type: none"> • Casting has a long history and there are approximately 20,000 plants, employing more than 1,000,000 workers. • Production in 1997 amounted to just under 12 million tons, and supply to the automobile and construction industries is growing. • Exports to Japan have increased in recent times. • There has been dramatic introduction of new technology and equipment in recent years. 	<ul style="list-style-type: none"> • Agricultural machinery, internal combustion engines • Cast iron pipes • Automobiles • Mining machinery
Korea	<ul style="list-style-type: none"> • Approximately 500 plants are located throughout the country. • In line with the development of the machinery industry (automobiles, machine tools, etc.), production has increased tenfold over the past 20 years. Demand fell by half in the wake of the 1997 currency crisis. • Quality levels are good because technology has been vigorously introduced from Japan. 	<ul style="list-style-type: none"> • Automobiles • Ships • General machinery
Taiwan	<ul style="list-style-type: none"> • There are approximately 1,600 casting manufacturers, employing some 25,000 workers. • Production in 1996 amounted to 1,390,000 tons, but it is thought that this will drop to 1,300,000 tons in 1997 due to reduction of exports caused by the currency crisis in Asia. • Exports of automobile brake systems and pump castings are large. • Major companies are shifting to mechanized production, however, most small and medium enterprises still adopt labor-intensive production setups. • Due to soaring wages and movement of young people away from the industry, the shift of the casting industry to the Chinese mainland and ASEAN is gathering pace. 	<ul style="list-style-type: none"> • Automobiles • Pipe sockets and valves • Pump and hydraulic parts
Singapore	<ul style="list-style-type: none"> • Approximately 30 companies are located here, but the four largest companies account for the majority of production. • The casting industry is shifting to Malaysia and Indonesia due to high wages and a labor shortage. 	<ul style="list-style-type: none"> • Automobiles • Auto joints • Ship parts • Machine tools
Thailand	<ul style="list-style-type: none"> • Companies are concentrated in Bangkok. • In line with advances made by foreign affiliated companies, production has multiplied by seven times in the past 10 years. • Production for the automobile industry is doing well, and the industry was fueled by this and exports in 1995. Production was estimated to be approximately 700,000 tons at this time. • The technological disparity between the major corporations (foreign affiliates) and small local companies is large and growing wider all the time. 	<ul style="list-style-type: none"> • Automobiles • Agricultural machinery • Mining • Cement machinery

Table 5-2-19 Overview of the Casting Industry in Asian Countries (Continued)

Country	Overview of the Industry	Main Applications
Malaysia	<ul style="list-style-type: none"> • It is estimated that there are 161 casting companies employing some 3,500 workers. • Casting production in 1997 was approximately 90,000 tons and some of this was exported to Southeast Asia. • Many small companies are run by Chinese owners. • Proton and Hicom Group operate modern plants. 	<ul style="list-style-type: none"> • Pipe joints, drainpipes • Mining machinery • Domestic electrical appliances • Automobiles
Indonesia	<ul style="list-style-type: none"> • Except for a few major state-owned enterprises, the industry is largely dominated by small local companies. • Most companies are located in and around Jakarta. • The industry has been stagnant in recent years, however, it is hoped that entry by foreign affiliated companies will trigger rapid growth from now on (especially in automobile-related areas). • However, production fell by roughly three-quarters as a result of the currency crisis in Asia. 	<ul style="list-style-type: none"> • General machinery • Pumps • Automobile parts and components
Philippines	<ul style="list-style-type: none"> • It is estimated that 80 companies, mostly located in Luzon, are in operation. • Casting has a long history in the Philippines, but it stagnated due to the failure of the OEM market to develop. Demand from the automobile and machinery industries has picked up in recent times. Production in 1996 was estimated to be around 200,000 tons, but it is thought to be around one-quarter of this now. This decline has been caused by a major fall in exports. • There is low awareness among companies concerning production management and quality control. 	<ul style="list-style-type: none"> • Machinery parts and components • Construction machinery • Automobiles
Vietnam	<ul style="list-style-type: none"> • Casting companies are located in and around Ho Chi Minh (approximately 300 companies) and Hanoi. Production in the Ho Chi Minh region amounts to 3,000 tons per month. • Production equipment mostly dates back to the 1970s and is deteriorated. 	<ul style="list-style-type: none"> • Machinery plants conduct internal casting • Pumps, agricultural machinery
India	<ul style="list-style-type: none"> • There are no overall statistics, but it is estimated that annual production is around 1,600,000 tons (production capacity is put at 2,300,000 tons). • In the same way as the case in China, there are many companies (approximately 6,000), however, there are only around 500 leading companies capable of producing industrial castings. • High level growth has continued since 1991 and exports of cast steel products are well known. 	<ul style="list-style-type: none"> • General machinery • Automobiles • Ships • Railway

Source: Prepared based on local data and interviews

Table 5-2-20 Overview of the Forging Industry in Asian Countries

Country	Overview of the Industry
China	<ul style="list-style-type: none"> • There are approximately 3,000 forging-related bodies, mainly consisting of internal forging plants of machinery manufacturers. • Production in 1996 amounted to approximately 2,400,000 tons, with open die-forged products accounting for 70% of the total. • Forged parts for motorcycles can be domestically produced, however, the overall level of the industry is low.
Korea	<ul style="list-style-type: none"> • There are approximately 100 companies, producing 300,000 tons of forged iron and 280,000 tons of forged steel. • Because Japanese machinery has been introduced, quality levels are high, however, in terms of die service life and nonconformity rates, the forging industry here is inferior to that in Japan. • Exports are small.
Taiwan	<ul style="list-style-type: none"> • There are approximately 400 steel and nonferrous forging companies, 80% of which are small and medium enterprises. • Domestic demand in the past two or three years has been approximately T\$70 million. Forged products are mainly used as parts for transportation machinery (automobiles, motorcycles, bicycles, etc.). • Major export destinations are Japan for forged iron and steel products, and the United States for forged nonferrous products. • Forged products are of medium quality, but production is still labor-intensive. • Since there is no mass production of special steel for forging, this is imported.
Thailand	<ul style="list-style-type: none"> • There are more than 30 companies throughout Thailand, and Japanese affiliated companies have also advanced into the automobile parts and components sector (internal production). • Production capacity is around 50,000 tons (as of 1996), the highest of any ASEAN country. • Main products are motorcycle parts and agricultural diesel engine parts. • A number of local plants have the technical capability to manufacture products of given specifications. • A Japanese affiliated manufacturer attracted attention for setting up a crank production plant in 1996.
Malaysia	<ul style="list-style-type: none"> • Three iron forging companies have been given permission to establish automobile-related operations. • There are a number of hand tool and bolt manufacturers. • Future growth is anticipated, however, plant investment in Malaysia may be difficult due to the expense.
Indonesia	<ul style="list-style-type: none"> • There were previously only a few assembly manufacturers and four specialized forging manufacturers in Jakarta, however, there are now between 10-20 companies following a spate of new establishments mostly by Japanese affiliated companies in the past two or three years. • Production capacity is somewhere between 20,000 and 30,000 tons, but the market demand is more than 50,000 tons and this was expected to double in 1995. Therefore, there is a shortage of supply.

Table 5-2-20 Overview of the Forging Industry in Asian Countries (Continued)

Country	Overview of the Industry
Philippines	<ul style="list-style-type: none">• There are seven representative companies, two of which are specialist makers.• Production capacity is roughly 60,000 tons. Automobile component parts, heavy equipment and machinery parts, and industrial machinery parts are manufactured.• Only three companies own presses and can perform die forging. These companies possess dies and heat treatment equipment and produce products of reasonable quality.
Vietnam	<ul style="list-style-type: none">• There are no actual forging companies but just a few minute forge smiths.• Problems are the absence of good quality steel materials and inferior production technology.
India	<ul style="list-style-type: none">• There are no detailed statistics, however, current production, consisting of open die forging and closed die forging, amounts to roughly 600,000 tons.• The industry is export-oriented with around 80,000 tons exported to Europe and America every year.

Source: Prepared based on local data and interviews

Table 5-2-21 Overview of the Metal Press Industry in Asian Countries

Country	Overview of the Industry
China	<ul style="list-style-type: none"> • Details are unknown.
Korea	<ul style="list-style-type: none"> • Korea is considered to be a leader of press technology in Asia, second only to Japan. In terms of press machinery, automation and die technology, Korea is on a par with Japan, however, it is behind Japan in terms of precision processing and fine blanking, etc.
Taiwan	<ul style="list-style-type: none"> • Taiwan appears to be slightly behind Japan and Korea in terms of machine manufacturing capacity and die technology. Difficulties exist with respect to large and precision press items, but production of general press products is efficient.
Singapore	<ul style="list-style-type: none"> • Details are unknown.
Thailand	<ul style="list-style-type: none"> • Because the metal press industry in Thailand largely manufactures products for automobiles, it is skilled at making large products (but this is limited to Japanese affiliated companies). On the other hand, since production for electrical appliances is limited, no attempt has been made to produce precision products. • Local companies use old-fashioned machinery and pressing technology is not well established. There is also little awareness of quality issues.
Malaysia	<ul style="list-style-type: none"> • Unlike Thailand, the press industry here is characterized by precision processing (progressive processing) and boasts the highest technical level within ASEAN. • However, many local companies are supplied with dies from customers and do not possess high technical capability. • Since there are no manufacturers of press machinery, maintenance is difficult.
Indonesia	<ul style="list-style-type: none"> • In the same way as in Thailand, the press industry mainly supplies products for automobiles. Almost all Japanese affiliated assembly manufacturers conduct internal pressing. There are also some specialist makers of large press items. • Compared to other metal processing industries, the press industry is well developed and 100% localization is possible.
Philippines	<ul style="list-style-type: none"> • The press industry here is relatively underdeveloped within ASEAN and equipment is deteriorated. • A wide range of large and small products are manufactured, but quality levels seem to be low.
India	<ul style="list-style-type: none"> • Details are unknown.

Source: Prepared based on local data and interviews

Table 5-2-22 Overview of the Die Industry in Asian Countries

Country	Overview of the Industry
China	<ul style="list-style-type: none"> • There are approximately 6,000 die plants, including 150 specialist makers, and it is estimated that these employ roughly 200,000 workers. • The value of production in 1996 amounted to US \$2.9 billion, but there was still a shortage of supply. Large dies, precision dies and complex dies are imported,. • The level of technology is thought to be 15-20 years behind that of Japan.
Korea	<ul style="list-style-type: none"> • There are approximately 2,000 die manufacturers, of which there are an estimated 300 specialist makers. • As a result of the industrialization that began in the 1970s, Korea is second only to Germany in terms of production value and its exports to Japan and the United States are growing every year. • Internal production rates are high, especially in the automobile industry, and the development of specialist die companies is an issue. • Die trading previously showed a deficit, but it entered the black in 1994. The value of production in 1994 was roughly 140 billion yen.
Taiwan	<ul style="list-style-type: none"> • There are 5,000 die manufacturers, mostly small and medium enterprises. • Taiwan is the fifth largest producer of dies in the world, and production in 1997 amounted to T \$47.5 billion (11% up on the previous year). • Die trading is in the black. Among exports, dies for air conditioner and television set front and rear covers and computer boxes, etc., are common, while imports largely consist of dies for electronic parts and relays, etc. • The average plant possesses lathes, drilling machines, grinding machines, milling machines, EDM and copy milling machines, and the technology level has improved in recent years.
Singapore	<ul style="list-style-type: none"> • There are 460 die-related manufacturers, most of which are small and medium enterprises. • Since there are no automobile-related industries, most die production is for the electric machine and electronics sectors. In particular, attention is focused on the production of precision dies for electronic parts (Malaysian electronics industry). • Half of all dies are imported. There are some exports. • The level of technology is the highest in ASEAN.
Thailand	<ul style="list-style-type: none"> • There are 1,260 die manufacturers registered with the government, and there are around 50 specialist makers. • The main die user industries are automobiles (60%) and electric machinery (40%), but the ratio of production for electric machinery is increasing every year. • In the field of press dies, Japanese affiliated makers are making vigorous advances into the industry. • Imports greatly exceed exports. • Almost all companies possess basic equipment such as lathes and grinding machines, and the introduction of modern equipment is also advancing.

Table 5-2-22 Overview of the Die Industry in Asian Countries (Continued)

Country	Overview of the Industry
Malaysia	<ul style="list-style-type: none"> • There are estimated to be 200 die-related manufacturers in Selangor Province alone, and these also carry out processing. • Sales in 1994 amounted to 1.16 billion ringgit. The localization of plastic dies started earlier than the localization of metal processing dies, and imports are relied on to provide large dies for such items as television cabinets and car bumpers, etc. Imports are still large and approximately 70% come from Japan, Taiwan and Singapore. • Some plants have introduced the latest machine tools, but many plants still use old-fashioned measuring equipment. • Vendors related to Matsushita have rapidly gained in strength, more so than even in Singapore.
Indonesia	<ul style="list-style-type: none"> • There are between 20-30 die-related manufacturers, including a few specialist makers. • There tends to be a shortage in the domestic supply of dies, and high level dies are ordered and imported from Hong Kong, Taiwan, Thailand, Malaysia and even India to a certain degree. • Dies for use in die casting cannot be produced domestically and need to be imported from Korea. • Automobile and electric machine manufacturers (joint undertakings with foreign capital) either internally produce dies or import from Korea.
Philippines	<ul style="list-style-type: none"> • There are just under 100 die manufacturers, mostly consisting of parts and components manufacturers that conduct internal production. • Demand for metals is increasing and is thought will rise at an annual rate of 10% or more from now on. • Equipment and technology levels are high at some top level local companies and foreign affiliated companies, however, the large majority of companies (approximately 70%) rely on general purpose machine tools and hand finishing.
India	<ul style="list-style-type: none"> • Details are unknown, but there are said to be more than 3,000 die-related companies. • There are around 200 major and leading companies. • Dies for cast iron and forging are said to be of excellent quality.
Hong Kong	<ul style="list-style-type: none"> • There are approximately 2,000 die manufacturers, including 1,000 specialist makers. More than 70% of companies are small in scale, employing 10 employees or less. • Die-using industries are the plastics industry, metal processing industry, and electronics and electric industry. • The die industry is characterized by a high ratio of exports (to China).

Source: Prepared based on local data and interviews

CHAPTER VI. OVERALL DEVELOPMENT STRATEGIES FOR THE SUPPORTING INDUSTRIES

1. PROBLEMS OF THE SUPPORTING INDUSTRIES IN INDONESIA

1.1 SHORT-TERM PROBLEMS

The slackening in domestic consumption has caused assembler production to fall, with the exception of the export oriented electronics industry, and as a result, the turnover of the supporting industries has also fallen dramatically. The supporting industries find themselves having to cut operating hours and cut staff, and are faced with the difficulties of opening up new markets.

In order to break free from the current difficulties, the supporting industries need the following issues to be resolved.

- To regain the macroeconomic stability.
- To open up new markets for their products.
- To normalize the function of corporate financing.

As for macroeconomic stability, the major task is to regain the confidence in the Indonesian economy through the followings:

- To stabilize the exchange rate;
- To recover the social and political stability; and
- To carry out the economic structural reform.

As for new market development, the major tasks are as follows:

- To expand international marketing activities;
- To find new customers within Indonesia;
- To improve product quality levels to match international standards;
- To promote diversification of products; and
- To improve the local content rate of products.

As for corporate financing, the major tasks are as follows:

- To provide working capital at an appropriate level of interest;
- To lessen the difficulties in opening L/Cs; and
- To provide trade financing for the import of basic raw materials.

1.2 MEDIUM AND LONG-TERM PROBLEMS

The competition with the neighboring countries will be intensified with the realization of the ASEAN Free Trade Area (AFTA) in 2002. Indonesian supporting industries will face tough competition from supporting industries of other ASEAN nations by 2002 when customs duties will be reduced to 0% to 5% within ASEAN nations by the CEPT scheme.

Under this situation, the supporting industries in Indonesia still have the structural problems which were pointed out by the previous study. The economic crisis have made some of these problems more serious.

To survive this tough competition, Indonesian supporting industries should increase their international competitiveness significantly by improving product quality, increasing their quality control level, and cutting down lead time, along with reducing costs. In order to accomplish the international competitiveness, the structural problems as mentioned below should be continuously tackled.

Problems Regarding the Industrial Structure

The supporting industries have not yet adequately developed either in number or size. They do not compose a pyramid structure, ordinarily observed in the advanced countries, where wider secondary and tertiary layers are formed under the assemblers.

The problems of the supporting industries from the view point of assemblers' procurement are as follows:

- i. Assemblers still rely mainly on imports and in-house production for essential

and/or critical parts and components.

- ii. Among their local procurements, purchases from foreign-affiliated companies occupy a larger portion in terms of value.
- iii. Indonesian parts and components manufacturers supply a limited range of products, such as products which do not require high technologies and auxiliary materials.

Problems Regarding the Managerial and Technological Capabilities of Local Parts and Components Manufacturers

The local parts and components manufacturers have the following problems in terms of management, technological level, and production management.

- Management
 - i. Most of the businesses are family-run and they have not acquired modern management skills.
 - ii. They lack marketing know-how and do not engage actively in marketing activities.
 - iii. They are not eager to start new business.
- Technological Level
 - i. They are lacking in modern production control technologies.
 - ii. It is not unusual that their equipment and facilities are obsolete.
- Production Management
 - i. Their internal training is not sufficient enough to develop good supervisors.
 - ii. Delay in delivery often occurs due to poor delivery control systems.
 - iii. Poor quality control systems bring about unstable quality and high defect ratios.
 - iv. Their cost competitiveness is weak for their quality level.

2. BASIC POLICY FOR THE DEVELOPMENT OF THE SUPPORTING INDUSTRIES

2.1 PRINCIPLES FOR THE DEVELOPMENT

The development of the supporting industries shall be promoted on the basis of the following principles:

- i. The development of the supporting industries will be promoted from two perspectives. The first one is short-term measures to ease the current difficulties of the supporting industries. The second is medium and long-term measures to realize the international competitiveness of the supporting industries in the era of trade liberalization under AFTA.

In line with the first perspective, the expansion of export promotion will be promoted by analyzing export potentials of Indonesian products and formulating a master plan for export promotion. As for the second perspective, industrial policies for the establishment of future competitiveness of the supporting industries will be formulated.

- ii. The development will be effectively promoted by taking an integrated approach towards identified development targets, with the purpose of developing strong parts and components manufacturers instead of protecting small scale enterprises. From this viewpoint, supportive measures will be targeted to the supporting industries which have potential to be internationally competitive in the regional market.
- iii. The reduction in the dependence on imported parts and components and the expansion of exports of parts and components will be pursued through the improvement of management and technological capabilities of the supporting industries.
- iv. The linkage between assemblers and the supporting industries will be widened by promoting the development of potential suppliers.

- v. The development will emphasize the market mechanism to build competitive industries.
- vi. The development will make use of supportive activities by the private sector, especially those of assemblers.

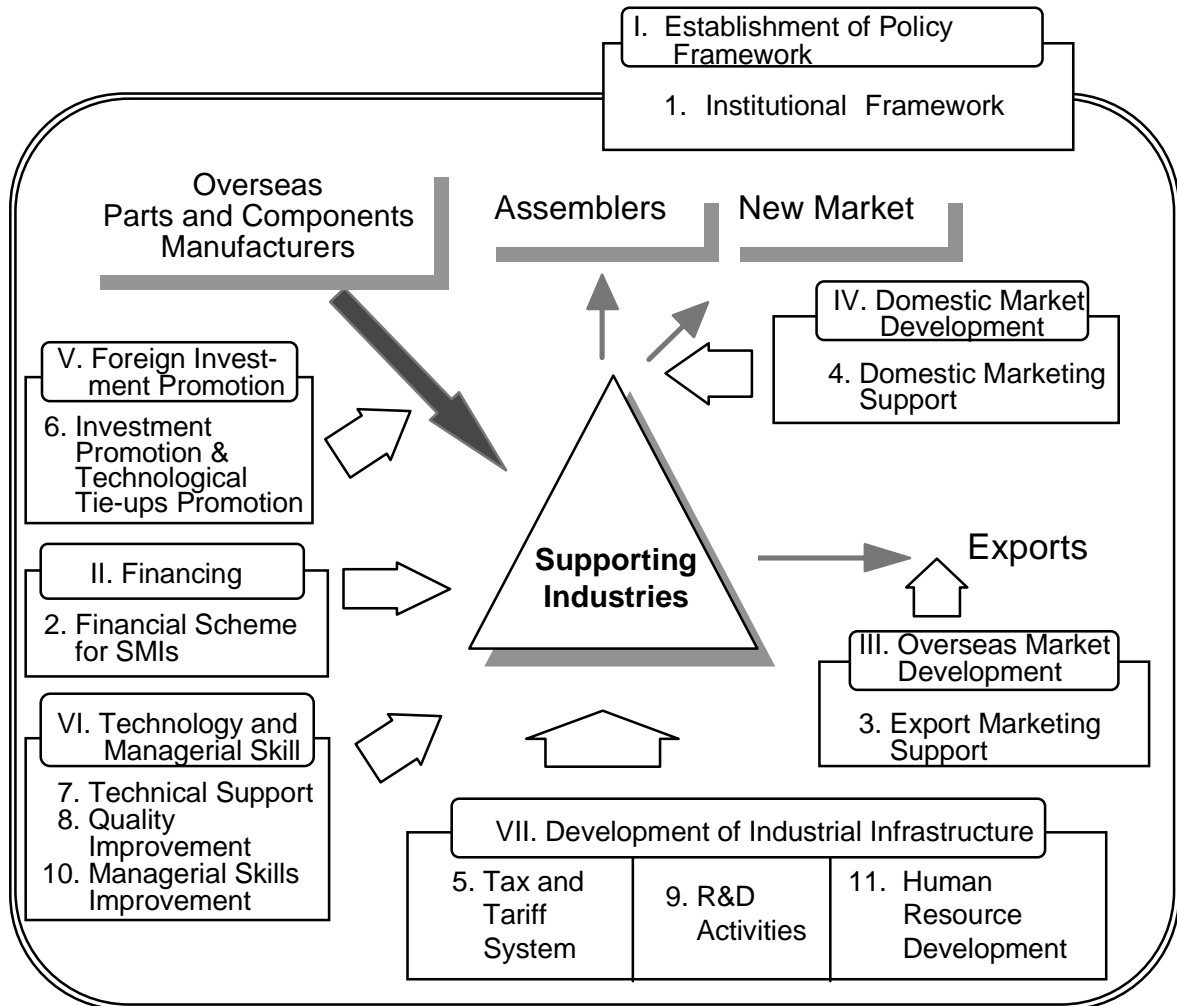
2.2 DEVELOPMENT APPROACHES

The seven basic approaches shall be adopted as basic development strategies for the supporting industries in Indonesia are shown in Table 6-2-1.

Table 6-2-1 Approaches for the Development of the Supporting Industries

Approach			Action to Be Taken
1	Institutional Framework	To establish a policy framework for the development of the supporting industries and an organization for effective implementation	To establish an institutional framework for the development of the supporting industries. (Measure No. 1)
2	Financing	To provide financial support to the supporting industries	To expand loans for the supporting industries. (Measure No. 2)
3	Export Promotion	To expand exports of parts and components by intensifying export promotion activities	To support overseas marketing activities of the supporting industries. (Measure No. 3)
4	Domestic Market Development	To promote subcontracting businesses in order to develop the linkage between assemblers and the supporting industries and assist the supporting industries in finding new markets	To support domestic marketing activities of the supporting industries. (Measure No. 4)
5	Investment Promotion	To promote the foreign direct investments by leading parts and components manufacturers and/or technological tie-ups among overseas and local manufacturers	To promote foreign direct investments and technological tie-ups. (Measure No. 6)
6	Technology and Management Skill Development	To improve the levels of the supporting industries in terms of production technologies, quality level and managerial skills	To support the improvement of the technological level of the supporting industries (Measure No. 7) To improve the quality level of the supporting industries (Measure No. 8) To support the improvement of managerial skills of the supporting industries. (Measure No. 10)
7	Industrial Infrastructure	To promote the development of industrial infrastructure by the government to provide a good business environment for the supporting industries	To rationalize tax and tariff systems (Measure No. 5) To expand the support for R&D activities of the supporting industries (Measure No. 9) To expand human resource development (Measure No. 11)

Fig. 6-2-1 Concept of the Approaches for the Development of the Supporting Industries



3. OVERALL DEVELOPMENT MEASURES FOR THE SUPPORTING INDUSTRIES

Implementation of the following measures, the Overall Development Measures, is recommended to assist the supporting industries in Indonesia in line with the basic strategies mentioned above:

Institutional Policy Framework

Measure 1: Preparation of the Institutional Framework for the Development of the Supporting Industries

1-1 Problems Regarding the Institutional Framework and Policy Mechanism

The following are pointed out as problems concerning the existing SMIs development measures:

- i. The on-going emergency programs are targeted only to the micro and small scale industries, which are in a difficult condition due to the economic crisis.
- ii. Policies and measures for the development of medium scale industries are still lacking in the government's SMIs policies.
- iii. The SMIs policies are subject to the restraint that they have to cover a large number of companies located all over the vast country within the limited budgets.
- iv. An integrated approach is required for the development of the supporting industries.
- v. Coordination and cooperation among many related ministries is essential for effective development of the SMIs.

1-2 Recommendations

- (1) Short-term Measures

- i. Upward shift of target companies of SMIs policies

A category of medium scale industries defined as below should be introduced.

New Definition of Enterprises in the Industrial Sector

Small Scale Industries: Total assets (excluding land and buildings) of Rp. 0.6 billion or less

Medium Scale Industries: Total assets (excluding land and building) of Rp. 5.0 billion or less

Large Scale Industries: Total assets (excluding land and buildings) over Rp. 5.0 billion.

- ii. To formulate development measures for the medium scale industries

The scope of small scale industry development measures will be extended to the medium scale industries and some new measures will be introduced responding to the features and needs of the medium scale industries.

- iii. To set up a “one-stop service center” for the supporting industries

“One-stop service center,” general contact desk for government’s services for the supporting industries, should be established under the Directorate General for the Small Industry and Trade. This will provide the following services:

- Construction of databases and provision of information
Provision of information on government’s supportive programs; technical guidance programs; training programs; assemblers’ purchase needs; and export opportunities
- Matching services of subcontracting businesses
- Arrangements and implementation of management advisory services and technical guidance services
- Desk for receiving applications for various governmental approvals

- iv. To realize more coordination with other SMI-related ministries and organizations

The government services to SMIs by related ministries and organizations should be coordinated to make these services more efficient.

(2) Long-term Measures

- i. To expand the function and activities of the Directorate General of Small Industry and Trade

The directorate will handle the medium scale industry as well as the small scale industry. The directorate will administer the development policies for SMIs, including the supporting industries. In the long run, the directorate will fulfill the following functions:

- To make development policies for the supporting industries
- To implement development policies for the supporting industries
- To coordinate the activities of various organizations related to the supporting industries development
- To monitor and evaluate the progress of the measures and programs for the supporting industries development
- To carry out research and establish databases on the supporting industries

- ii. Establishment of harmony with international business rules and with society

The requirements set by the international business world, such as the protection of property rights, the introduction of environmental standards, and the restriction on unfair trade treatments by WTO, are connected directly and indirectly with Indonesian supporting industries. These problems should be fully considered in formulating the policies for the supporting industries development.

Careful consideration should be given to possible environmental problems. This is because the small and medium scale industries tend to create environmental problems, for example, in the pollution of nearby areas, bad working conditions, improper treatment of waste due to obsolete equipment and bad operating conditions.

Financial Support

Measure 2: Expansion of Finance to Small and Medium Industries

2-1 Problems Regarding Finance for the Supporting Industries

Major problems of the supporting industries are a shortage of working capital, a limited availability of trade financing, and high interest rates.

i. Shortage of working capital

The supporting industries are requested to pay by cash in advance when they purchase raw materials or parts because their credibility has fallen. This is a heavy burden especially for SMIs. They usually do not have enough self-capital or assets suitable for collateral of bank loans.

For the small scale industries, including the supporting industries, several finance schemes, for example, KPKM, IKM, and Dana Bergulir, have already been introduced as a part of the social safety net. However, these schemes do not function well yet because of the complexity of procedures. In addition, there are problems that maximum lending amounts are too small and medium scale enterprises are not eligible.

ii. Limited availability of trade financing

The supporting industries have difficulties in importing raw materials and parts because the trade financing function of the banking sector has been paralyzed. The main reason is that overseas banks are reluctant to accept letters of credit (L/C) issued by Indonesian Banks due to the collapse of the banking sector in Indonesia. Bank Indonesia and foreign countries have provided L/C guarantee schemes to ease this problem. However, until now, these schemes have not achieved good results.

iii. High interest rates

Bank Indonesia maintains a high interest policy and SBI rates stay at around 40% per annum. As of March 1999, commercial banks' basic lending rates are 38 to 45%. These rates are too high for the industrial sector to carry out investments.

As major problems when the supporting industries raise funds, the following are pointed out:

Problems on the borrower side

- i. They can not offer appropriate collateral for bank loans because their assets are limited.
- ii. They can not prepare a loan application form for special loan schemes for the small industries because they lack a knowledge of these schemes and the procedures are complicated.
- iii. They can not prepare a feasible project because they lack the project formation capability and they are not accustomed to application procedures.
- iv. There often is an eligibility problem due to a drop in sales and their poor management capabilities.

Problems on the lender side

- i. Commercial banks are very reluctant to provide new loans because they are required to improve their capital adequacy ratio (CAR) under the on-going recapitalization program and they do not want to increase risk assets.
- ii. Commercial banks suffer from negative spread between deposit and lending rates because of the soaring interest rates of deposits.
- iii. Credit cost is high because amounts of credits to small scale industries are small.
- iv. Credits to SMIs are high risk and it is difficult to find viable borrowers and feasible projects.

2-2 Recommendations

(1) Short-term Measures

The entire solution of problems in corporate financing must wait until the current banking

sector reforms are accomplished and the confidence on the banking sector recover, which is considered to require more than one year. Under these circumstances, measures to ease the difficulty of the supporting industry in procuring necessary funds should be taken.

- i. To realize a credit guarantee scheme for L/C opening.

The Government announced that it would introduce a credit guarantee scheme for L/C opening by PT. ASKRINDO. However, the guidelines of the scheme has not yet been announced. This scheme should be realized as soon as possible to encourage commercial banks' import financing.

- ii. To set up a special bank in trade financing.

The government plans to set up a commercial bank specialized in trade financing by reforming a commercial bank taken over by the Government. This plan should be promoted to expand trade financing for the Indonesian industry, including the supporting industry.

- iii. To introduce a loan scheme for the medium scale industries.

It is necessary to introduce a loan scheme which aims to provide loans to the medium scale industries which are not covered by the social-safety-net loan schemes. One of options is to introduce the scheme as a two-step loan funded by overseas sources.

- iv. To expand technical assistance to SMIs in preparing loan proposals.

Technical assistance by MOIT, Ministry of Cooperative and Small & Medium Enterprises, and other related ministries should be expanded. MOIT, through local offices and extension workers, should extend more guidance on financial management and preparation of a loan application.

(2) Long-term Measures

- i. To establish a public financial institution specializing in finances for small and medium scale companies.

A financial institution specializing in finance for the small and medium scale industries should be established. This institution will provide low-interest long- and medium-term loans for capital investments, including expenses for technical assistance. This institution will keep a sufficient number of loan officers specialized in loans for SMIs for a quick flow of funds, better project finding, and reduced credit risks.

Marketing

Measure 3: Support for Export Marketing

3-1 Problems Regarding Export Marketing

Major problems concerning export marketing for the supporting industries are as follows:

(1) Short Term Problems

i. Disorder of trade financing mechanism

Due to declining confidence on Indonesian banks and, as a result, disorder of their trade financing function, Indonesian exporters have difficulty in acquiring imported materials for producing export products.

ii. Drop in order receipts due to Indonesia's political and social unrest

Because of the repeated riots and political unrest following the economic crisis, foreign buyers have become very cautious about placing orders to Indonesian exporters, worrying about their inability to provide secure and steady delivery of goods.

iii. Complicated and unclear export procedures

The custom clearance procedures and the export application documentation, which are criticized for being too complicated and not transparent, have to be simplified. The high fiscal tax levied on trips for business purposes is also a burden for SMEs'

export promotion.

iv. Time-consuming procedures for the draw back system

Many exporters still complain about the draw back system of VAT levied on export products. They complain that it takes too long time for the VAT levied on exported goods to be paid back from the Government.

v. Lack of tax incentives for indirect exports

There are many tax incentive policies applicable to direct export while, on the other hand, there is almost nothing for indirect export.

(2) Medium and Long Term Problems

i. NAFED's insufficient capability in export promotion

NAFED has been providing various trade support services. However, their activities have been directed to non-industrial commodities. Most of NAFED's officers have no business experience in foreign trade. In 1998, all the Indonesian Trade Promotion Centers (ITPC) abroad were closed due to insufficient governmental funding. Therefore, NAFED has no specialized export promotion offices abroad.

ii. Low quality of Indonesian products for export

It is often reported that many products exported from Indonesia are of inferior quality compared to similar products from competing countries. Failure to satisfy export quality leads to a market claim and a loss of the buyer's confidence.

iii. Poor trade-related infrastructure

Sea transportation is one of the biggest problems of Indonesia's trade-related infrastructure. Vessel schedules are not as frequent as needed. This makes it more difficult to meet promised delivery terms and also to make flexible procurement plans of imported materials.

Higher shipping rates is another problem. Because the expensive freight is a consequence of the distance from the destination, it seems that not much can be done about this problem. If Indonesia could have competitive shipping companies of its own by utilizing its relatively lower cost of manpower, it might be a great help for the country's export capability.

3-2 Recommendations

Promotion of export is an urgent task for Indonesia considering the fact that export is one of the most important means to realize the nation's economic recovery and to sustain the supporting industries in terms of sales and employment.

(1) Short-term Measures

- i. To review the existing tax system concerning trade and export promotion

This includes the introduction of tax incentives for indirect export and the computerization for quicker processing of taxation.

- ii. To streamline cargo handling procedures at ports

The regulations on cargo handling should be clearer and the related handling charges including VAT on port services should be lifted or reduced.

- iii. To exempt the fiscal tax for export promotion purpose trips

- iv. To introduce trade financing schemes in order to correct the current disorder of trade finance in Indonesia

- v. To encourage the exports by foreign-invested assemblers and parts and components manufacturers

Foreign assemblers and parts manufacturers have been increasing their exports to maintain their operations. It is necessary to facilitate their exports by providing easier tax and customs procedures.

- vi. To expand and make effective NAFED's export promotion activities

It is necessary to improve the function of NAFED and make its activities more effective. Especially, export promotion of industrial goods should be upgraded with the cooperation of sectoral directorates of MOIT. In line with this, the basic export promotion policy of NAFED will be reviewed and its officers will be trained in the fields of export promotion, market research, etc.

- vii. To expand public organizations' support for overseas marketing activities

To strengthen the linkage between public organizations such as NAFED, and trade associations in such export promotion activities as participation in overseas trade fairs, dispatch of trade missions, and sales promotion to overseas potential buyers.

- viii. To provide information services on overseas markets by public organizations

NAFED and trade associations should make comparative surveys concerning the export competitiveness of Indonesian products and identify products with export potential. They should also provide information on products which foreign buyers want to buy. Export promotion activities by individual companies and by trade associations will make use of the results of these surveys.

- ix. To provide guidance on export marketing to SMEs

It is necessary to expand advice and consultancy service to SMEs which do not have export experience and export promotion know-how. NAFED and MOIT's local offices will extend this service.

- x. To expand training on export marketing

Training programs on export marketing should be refined to be more practical and these programs are to be provided, especially to export-oriented SMEs.

- xi. To hold parts & components procurement trade fairs (reverse trade fairs)

It is useful to hold in Indonesia reverse trade fairs where assemblers of final products and/or parts & components participate to look for local vendors and invite foreign participants.

(2) Medium and Long-term Measures

i. To expand the function of NAFED and upgrade its capability

Such activities of NAFED as business matching service, information service, overseas promotion, etc., should be continuously expanded. For this target, personnel training from the long-term point of view should be instituted.

ii. To develop trade-related service activities

The development of sea transportation companies is also important for the competitiveness of Indonesian industries. It is also necessary to expand the forwarding industry that performs customs clearance, packing, storing, and transporting work for better cargo handling.

iii. To upgrade the quality of Indonesian products

It is necessary to improve Indonesian products in order to expand overseas markets. Product quality should be increased through such measures as technical guidance by foreign experts and public institutions, worker training, introduction of new equipment, R&D activities, etc.

iv. To increase the cost competitiveness of Indonesian products

Major industrial products of Indonesia are cost conscious items. When the Indonesian currency value recovers, the cost difference between Indonesia and major competing countries, such as China and Thailand, will become smaller and Indonesia's competitiveness over those countries will be lost. Therefore, measures to improve the efficiency of workers should be continued.

Measure 4: Support for Domestic Marketing

4-1 Problems Regarding Domestic Marketing

The local supporting industries are in dire need of finding new customers in the different industries because their market has sharply shrunk due to the economic crisis. Major bottlenecks of local parts and components manufacturers in diversifying their businesses are insufficient marketing capability, lack of information on potential customers, and insufficient new customer development activities. Supports for subcontractors in finding new customers, by providing necessary information and mediating businesses, is necessary.

4-2 Recommendations

(1) Short-term Measures

- i. Support to parts and components manufacturers in finding orders from new customers

The following activities should be provided:

- To support the preparation of a company's brochure and pamphlets
- To support the preparation of cost estimates
- To make standard models of contracts
- To provide information on buyers' wants for parts and components purchase

- ii. To hold parts & components procurement trade fairs (reverse trade fairs)

Reverse trade fairs where assemblers of final products and/or parts & components participate to look for local vendors should be held in Indonesia.

- iii. Preparation of a database on parts and components manufacturers

A database specializing in the supporting industries with detailed information should be developed for the business development of supporting industries.

The database will be developed by inputting with a unified form data of parts and components manufacturers collected by local offices of MOIT, local chambers of commerce and industry, and trade associations. The database will be equipped within MOIT and made open to the public, especially to buyers.

- iv. Expansion of activities to mediate between suppliers and buyers of parts and components

Besides the provision of information based on the database mentioned above, business negotiations at occasions such as trade fairs will be supported by public organizations.

(2) Medium and Long-term Measures

- i. To provide support for product diversification by the supporting industries

It is necessary for parts and components manufacturers to diversify products considering the market situation under the trade liberalization under the AFTA. Such measures to support their product diversification as information service, technical assistance, financial support, etc., are needed.

Measure 5: Rationalization of Tax and Tariff Systems

5-1 Problems of Tax and Tariff Systems

Luxury taxes are one of the problems in expanding the domestic market. These high luxury taxes restrain the growth of the domestic market for electric home appliances. This limits the market size of the parts and components industries as well. Under the current situation, it is necessary to reduce luxury taxes to encourage domestic consumption.

5-2 Recommendations

- (1) Short-term Measures

- i. To reduce luxury taxes

Luxury taxes shall be reexamined from the viewpoints of stimulating domestic consumption as well as realizing sound development of the industries.

- ii. To secure an accord between industrial policy and the tariff system

According to the agreement with the WTO, the government is reviewing the current import tariffs on automotive parts and components. For other industries, it is necessary to pay adequate consideration to the accordance between industrial policy and the tariff system.

Investment Promotion

Measures 6: Expansion of Investment Promotion Activities

6-1 Present Problems Regarding Investment Promotion

The major competitive parts and components manufacturers are foreign-invested companies. They are essential to a higher level of competitiveness and value added of Indonesian machinery, automotive, and electrical and electronic industries. From this aspect, it is necessary to encourage foreign direct investment in the supporting industries. However, the deterioration of business environments in the ASEAN region and the political instability in Indonesia have drastically decreased foreign direct investments into Indonesia. At the same time, many local parts and component manufacturers need capital participation by foreign investors in order to solve their financial difficulty as well as to receive technical assistance. However, foreign companies are taking a wait-and-see attitude until the Indonesian political situation is settled.

6-2 Recommendations

- (1) Short-term Measures

i. Expansion of provision of information for investment promotion

It is necessary to set up a system which can provide foreign investors with information on local companies wishing a joint venture or technological collaboration with foreign companies by preparing a database of this information. At the same time, the services of mediating foreign companies and local companies will be expanded.

ii. Implementation of investment promotion activities toward clarified targets

Most of the foreign parts and components manufacturers are small and medium scale. Therefore, it is necessary to carry out investment promotion and provide investment supports which can match the needs of small and medium scale companies.

It is recommended that investment promotion activities be carried out, such as dispatch of investment promotion missions and invitation of potential investors, targeting foreign parts and components manufacturers producing priority products identified in this Study.

iii. Provision of assistance to investments by foreign small and medium parts and components manufacturers

For the promotion of investments by foreign small and medium scale parts and components manufacturers, a system facilitating their investments should be prepared such as a one-stop-service center dealing with all the investment procedures and industrial estates which provide common facilities.

(2) Medium and Long-term Measures

i. Promotion of a shift of production base from other Asian countries

Leading foreign manufacturers of automotive, and electrical and electronic parts and components are establishing a system of a regional division of production within Asian region. Therefore, it is necessary to promote the investments into Indonesia by major parts and components manufacturers located in the Asian region.

Technical Support/ R&D Capability Improvement

Measures 7: Improvement of Technological Level of the Supporting Industries

7-1 Problems Regarding Technological Level

The upgrading of technological level of production is necessary to increase parts and components exports to the Asian region and/or advanced countries because the level of quality, cost, and delivery (QCD) of local manufacturers do not satisfy the requirements of foreign customers.

Production-related technologies can be largely divided into two categories: technologies specific to products, and production management technologies. The former are technologies related to the technological level of product, such as R&D, production process and production equipment, and the latter are the technologies related to QCD (quality, cost and delivery), such as production control, quality control, physical distribution, and labor management.

The improvement of specific technologies should be promoted through the modernization of facilities and equipment, and the introduction of the latest production processes. Technical tie-ups, studies on latest technologies, and the expansion of R&D capabilities are major methods of upgrading specific technologies. As for production management technologies, continuous and steady efforts for improvement, upon managers' recognition of their importance, are necessary. Technical guidance by assemblers, public institutions, and specialists are effective methods of improving production management technologies.

The improvement of production technologies is a key for the Indonesian supporting industries to reach the technological level at which they can supply OEM parts and components to assemblers including foreign-affiliated assemblers and they can acquire the international competitiveness in cost and quality against other ASEAN countries.

7-2 Recommendations

(1) Short-term Measures

i. Promotion of technological transfer from assemblers to their subcontractors

Assistance by assemblers to local vendors should be expanded with the purpose of upgrading the products of local vendors to the level of requirements of overseas users, which is essential for parts and components exports.

Assemblers are promoting the development of local subcontractors. Some of them have formulated an integrated program for subcontractor development, including technical guidance. These efforts should be further encouraged.

ii. Improvement of production technologies with the assistance of experts

The improvement of production technologies which can be done in the short term should be conducted with the assistance of foreign experts and/or local public institutions. Improvement in production technologies, jigs & fixtures, production management, inspection system, delivery control, etc., will be carried out.

iii. Expansion of technical guidance by public institutions

It is recommended to expand traveling technical guidance by public institutions. The content of technical guidance will be upgraded through education and training of instructors and provision of additional necessary equipment. In addition, a technical advisor system will be introduced to register specialists and experts as technical advisors and to make the most use of them.

iv. Upgrading of public technical support centers in the region

Public technical support centers in the region, UPTs, can not satisfy the needs of technical assistance to the supporting industries because their facilities and technological level are obsolete. It is necessary to upgrade some UPTs in the key regions where many local parts and component manufacturers are located.

v. Promotion of education and training on production management for engineers

Factories of Indonesian supporting industries lack personnel who have sufficient knowledge on production management necessary for process control, product evaluation, and systematic improvement activities. It is necessary to expand education and training on production management at universities and public training institutions. Utilization of training in the country and overseas under various schemes supported by foreign countries and organization should be encouraged.

v. Expansion of activities of trade associations

It is recommended that the activities of trade associations, especially activities for upgrading technological levels of member companies, be expanded. In more detail, the following should be carried out:

- Provision of information on latest technologies
- Formation of study groups of members for study on technology improvement
- Organizing of factory visits to excellent factories

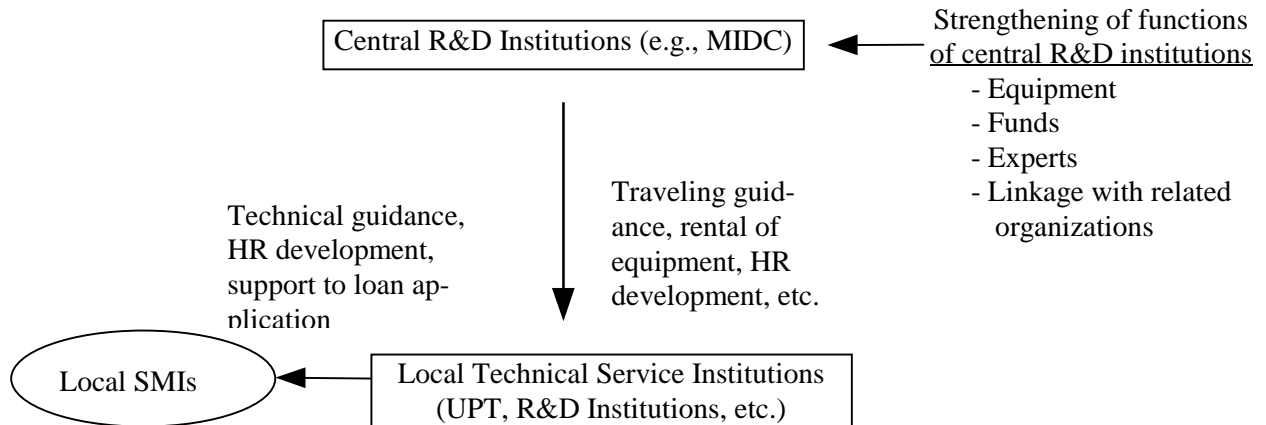
(2) Medium and Long-term Measures

i. Establishment of a technical assistance system by public institutions

At local areas, the services of local R&D institutions and UPTs should be modernized and upgraded. It is necessary to reinforce central R&D institutions so that they can support the expansion of local R&D institutions' capabilities. More UPTs should be also upgraded. The linkage between R&D institutions and UPTs should be strengthened to improve the technical assistance to the supporting industries.

As for the expansion of local institutions, the important areas should be identified and given development priority. Possible candidate priority areas are JABOTABEK and Surabaya where many assemblers are located, and areas in which many metal processing industries including casting and forging are concentrated.

Fig.6-3-1 Flow of Technical Assistance



ii. Mediation of technological tie-ups

Technological tie-ups between foreign licensors and Indonesian parts and components manufacturers will be promoted and assisted by the Indonesian government and assemblers in order to start the production of parts and components which are not currently produced.

Measures 8: Improvement of Quality Level

8-1 Problems Regarding Quality Level

The acquisition of ISO 9000 is a common task of parts and components manufacturers in Indonesia. This is essential for export-oriented parts and components manufacturers. However, it is very difficult for SMIs to establish a quality control system on the basis of ISO 9000. Therefore, it is necessary to develop a quality control system which is suitable for SMIs and get it to them.

In Indonesia, many primary subcontractors have introduced a quality control system. However, they have problems concerning the selection and maintenance of inspection equipment and this leads to the production of defective products. At secondary subcontractors, in general, even inspection systems are not sufficiently established and quality

control systems have not been introduced.

Major problems in parts and components manufacturers establishing a quality control system are:

- i. Both top management and workers have insufficient recognition of the importance of quality.
- ii. Knowledge of quality control methods is insufficient.
- iii. There are insufficient personnel who can take care of quality control.

8-2 Recommendations

(1) Short-term Measures

- i. Promotion of technical guidance by assemblers to their subcontractors

Assemblers' technical guidance to local vendors for the improvement of quality level should be encouraged to expand so that their product quality be upgraded to satisfy the requirements of overseas assemblers.

- ii. Improvement of quality control with the assistance of experts

Local parts and components manufacturers should be encouraged to accept foreign experts to improve their quality level as well as production technologies.

- iii. Development of a quality control system suited to SMIs and preparation of an introduction manual for that system

A quality control system which is appropriate for SMIs shall be developed and diffused to SMIs.

- iv. Provision of information on quality control

It is necessary to collect books and materials concerning quality control both overseas and domestic and make them open to the public, especially to persons engaging in quality control.

v. Preparation of Indonesian Industrial Standards

It is necessary to increase items of Indonesian Industrial Standards covering parts and components and make these popular among the industries. This will lead to a rise in the recognition of product quality among the industries.

(2) Medium and Long-term Measures

i. Establishment of an institution which engages in the diffusion of quality control technologies

In Indonesia there exist several organizations providing advisory services and training for quality control, for example, PT Sucofindo, B4T, and ITQC. However, there is no institution responsible for the diffusion of quality control to the whole country. It is recommended that an institution be set up which carries out research on quality control and spreads systematically and continuously the outcome to companies in the country.

ii. Organizing of personnel in charge of quality control

Quality control personnel and advisors of private companies, the governmental offices, public institutions, and the academic world shall be registered as QC specialists. The latest information on quality control will be distributed to the persons registered.

Measure 9: Improvement of R&D Activities

9-1 Problems Regarding R&D Activities

Almost none of the parts and components manufacturers, except foreign-affiliated companies, engage in in-house R&D activities. Local subcontractors are at the level that they can manufacture products as instructed by drawings provided by assemblers. Local manufacturers producing general parts or REM parts remain at a low technological level and it is hard for them to make new products based on their original technologies or to ex-

port their products . This situation is due to their insufficient R&D capabilities in terms of business size, facilities, technological level, and personnel.

The local parts and components manufactures are faced with the necessity of diversifying their products because their existing market has been sharply reduced after the economic crisis for the short run, and because the competitive situation of the market will change after the market liberalization for the long run. However, they do not have enough capability of doing the product diversification by themselves.

Both the provision of direct support and incentives to promote R&D activities by the private sector and the expansion of public institutions' support to the public sector are necessary for the betterment of R&D capabilities of the supporting industries.

9-2 Recommendations

(1) Short-term Measures

i. Provision of information for product diversification

It is necessary to provide such information on products, market needs, technical requirement, necessary technologies, etc., to support local parts and components manufacturers' product diversification to the different industries.

ii. Support for R&D by private companies

Such governmental incentives as tax incentives and subsidies are necessary to support private sector's R&D activities to diversify their products for new markets.

Tax incentives for R&D have already been introduced. However, it is pointed out that these do not function well due to operational problems. It is recommended that this system be reviewed to make it work effectively.

In addition to tax incentives, the introduction of an R&D subsidy which covers one third to a half of total expenses and subsidy for researches on overseas technologies

should be examined. These measures are effective to support technology-oriented SMIs and ventures started by engineers who have excellent ideas but need such support.

iii. Promotion of the localization of the function of authorizing new parts and components at assemblers

In the automotive industries, prototypes newly developed by parts and components manufacturers have to follow a complicated and time-consuming process of authorization until they are accepted by assemblers. This has been one of the major factors which hinder the development of parts and components manufacturers' R&D capabilities and original technologies. Promoting the localization of assemblers' functions to encourage the use of local parts and components is important to activate R&D activities of parts and components manufacturers.

iv. Promotion of the transfer of foreign-invested assemblers' product designs and development processes to Indonesia

If assemblers carry out product development in Indonesia, the participation of local parts manufacturers in this process becomes possible. Foreign electrical and electronic manufacturers are shifting development processes to Asian countries. It is necessary to encourage this trend and prepare the necessary environment.

v. Expansion of facilities of R&D institutions under MOIT

With the localization of parts and components, the products developed locally should be evaluated to see whether they are manufactured according to the designs. However, it is a big financial burden for parts and components manufacturers to be equipped with testing facilities. They ask public and private testing institutions or overseas institutions to provide such facilities. This is because R&D institutions under MOIT can not respond fully to the testing needs of the supporting industries due to the lack of necessary facilities and poor maintenance of equipment.

In order to solve this problem, it is necessary to install large-scale and expensive

testing facilities and equipment in public institutions which can not be borne by individual companies and provide testing services through public institutions to the private sector.

(2) Medium and Long-term Measures

i. Promotion of joint R&D activities by the industry, public sector and academic sector

Such products as machinery, automobiles, and electrical and electronic equipment are composed of a large number of parts and components which are synthetic and organically combined. Therefore, they call for both synthetic and diversified technologies as well as technologies specific to individual parts and components. In these industries, diversified joint R&D is undertaken in addition to R&D by individual parts and components manufacturers.

As for the use of new materials, joint R&D by material manufacturers, an assembler, and parts and components manufacturers is carried out in advanced countries. Joint R&D by types of processing, e.g., casting, forging, and machining, and joint R&D for assembled units is also carried out.

ii. Education and training for R&D personnel

The developing of excellent engineers is also an important task for the promotion of local R&D, as well as other technological issues. Especially for R&D, the following measures should be taken in the area of education and training:

- To expand the engineering curriculum at universities.
- To expand scholarships to promote overseas training at private companies.
- To activate information exchanges and association among engineers in private companies, public institutions, and universities.
- To accumulate experienced personnel through joint R&D activities.

Management Skills

Measure 10: Improvement of Managerial Skills of SMIs

10-1 Problems Regarding Management Skills

The major problems concerning the level of management skills of the supporting industries are as follows:

- i. Lack of modern management skills at the small and medium scale industries

It is pointed out that many small and medium scale companies engaging in secondary and tertiary subcontracting do not have modern management systems. The reasons for this are that most of them are family businesses.

- ii. Management skills are not developed enough to promote exports and raise new funds

At present, local parts and components manufactures are eagerly engaging in sales promotion to domestic and overseas market. However, their experience and skills are not sufficient. In addition, they have a problem of procuring necessary funds. Their insufficient management skill is a burden to fund raising.

- iii. The supporting industry should improve their management skill to modernize their management.

Local small and medium scale companies should acquire a modern management system when they grow in order to be strong parts and components manufacturers which can support assemblers. In the near future, their competition with imported products will be more severe because of the market liberalization. Local small and medium scale companies should rationalize their management with modern management skills to compete with imported products.

10-2 Recommendations

(1) Short-term Measures

- i. To develop training programs on managerial skill and expand them to SMIs.

It is necessary to upgrade the existing training programs on managerial skills and extend them to the SMIs, focusing on marketing, export promotion, financing, and product diversification. Program development will be carried out by PUSBINLAT, PPEI and other related organizations. Programs will be made more practical to meet the needs of SMIs.

- ii. To re-train extension workers engaging in advisory services for SMIs

The consulting skills of extension workers will be upgraded for the improvement of management and technological level of SMIs

- iii. To expand advice and consultancy services to SMIs on management, including business planning, marketing, and financing.

This will be achieved through the expansion of activities of extension workers, and the modernization of UPTs.

(2) Medium and Long-term Measures

- i. To establish an SMI consultant system in MOIT

The system of bringing up management advisors will be established. They should conduct management diagnosis of SMIs, and based on the results, continuously give management advice on appropriate business planning and improvements in management.

- ii. To expand the function of SMI guidance by MOIT

The function of SMI guidance by MOIT should be expanded. This includes the preparation of a database, information service, and researches on SMIs.

Human Resource Development

Measure 11: Expansion of Human Resource Development

11-1 Present Problems Regarding Human Resource Development

Small and medium parts and components manufacturers have a problem of insufficient skilled labor because in-house human resource development systems are not established and working conditions are bad.

As for vocational training, public vocational training centers are insufficient in number, in facilities, and in curriculums. The vocational training is offered insufficiently not only for the supporting industries but for all the industries.

From the viewpoint of upgrading the technological level, production management, and R&D of the supporting industries, an insufficient supply of engineers and technicians is also pointed out as a problem.

11-2 Recommendations

(1) Short-term Measures

i. Expansion of employee training within the industries

Vocational training institutions operated by big enterprises possess abundant training know-how in the area of practical skills. It is useful to make these institutions open to the public and contribute to the improvement of employees' skills of the supporting industries. To provide engineers of the supporting industries with training courses for wide knowledge on technologies, even though that may be shallow, is effective to raise the technological level of the supporting industries. Therefore, such supports as tax incentives and/or subsidies should be given for the establishment of training institutions by private companies.

- ii. Utilization of schemes for vocational training funded by foreign countries and organizations

There are various types of schemes for the training within the country and overseas funded by foreign countries and organizations. The use of these schemes should be encouraged to upgrade the level of employees.

- iii. Development of training programs for high need technologies

There are several technologies related to the supporting industries which are not sufficiently covered by the existing vocational training system. Examples are plastic molding, metal press, and die and mold designing. For these high need subjects, the training system including curriculum, equipment, and the level of instructors should be enriched by such organizations as CHEVEST.

(2) Medium and Long-term Measures

- i. Establishment of a national-level vocational training system which responds to the needs of industries.

It is necessary to expand and enrich skill training in the areas highly needed by the industries. The Ministry of Manpower periodically monitors the needs of the industries and identifies training needs. Through this kind of efforts, it necessary to expand the vocational training system flexibly responding to these needs.

- ii. Expansion of the skill certification system

The skill certification system hardly covers skills related to the supporting industries. In addition to the expansion of the training system, it is necessary, from the long-term perspective, to make the skill certification system cover skills related to the supporting industries. By certifying highly skilled personnel, the skill certification system can raise the position of skilled personnel, and furthermore, raise the skill level of the whole industry.

- iii. Expansion of vocational training centers

The modernization of existing vocational training centers is steadily promoted by the Ministry of Manpower. It is necessary to continue to this effort to expand and enrich the vocational training in such fields as metal processing and electronics, which are highly demanded by the supporting industries.

At present, vocational training centers have introduced a dual training system which includes practice at companies in addition to training at centers. This should be expanded because this is effective from the viewpoint of practical vocational training.

iv. Training of engineers and technicians

The following should be promoted to develop engineers and technicians with engineering knowledge:

- Expansion and enrichment of engineer education at universities
- Expansion of polytechnics
- Introduction of training programs for technician level personnel working at companies

Table 6-3-1 Overall Development Measures for the Supporting Industries

	Item	Short Term	Medium and Long Term
1	Preparation of the Institutional Framework for the Development of the Supporting Industries	<ul style="list-style-type: none"> i. Upward shift of target companies of SMIs policies ii. To formulate development measures for the medium scale industries iii. To set up a "one-stop service center" for the supporting industries iv. To realize more coordination with other SMI-related ministries and organizations 	<ul style="list-style-type: none"> i. To expand the function and activities of the Directorate General of Small Industry and Trade ii. Establishment of harmony with international business rules and with society
2	Expansion of Finance to Small and Medium Industries	<ul style="list-style-type: none"> i. To realize a credit guarantee scheme for L/C opening ii. To set up a special bank in trade financing iii. To introduce a loan scheme for the medium scale industries iv. To expand technical assistance to SMIs in preparing loan proposals 	<ul style="list-style-type: none"> i. To establish a public financial institution specializing in finances for small and medium scale companies.
3	Support for Export Marketing	<ul style="list-style-type: none"> i. To review the existing tax system concerning trade and export promotion ii. To streamline cargo handling procedures at ports iii. To exempt the fiscal tax for export promotion trips iv. To introduce trade financing schemes in order to correct the current disorder of trade finance in Indonesia v. To encourage the exports by foreign-invested assemblers and parts and components manufacturers vi. To expand and make effective NAFED's export promotion activities vii. To expand public organizations' support for overseas marketing activities viii. To provide information services on overseas markets by public organizations ix. To provide guidance on export marketing to SMIs x. To expand training on export marketing xi. To hold parts & components procurement trade fairs (reverse trade fairs) 	<ul style="list-style-type: none"> i. To expand the function of NAFED and upgrade its capability ii. To develop trade-related service activities iii. To upgrade the quality of Indonesian products iv. To increase the cost competitiveness of Indonesian products
4	Support for Domestic Marketing	<ul style="list-style-type: none"> i. Support to parts and components manufacturers in finding orders from new customers ii. To hold parts & components procurement trade fairs (reverse trade fairs) iii. Preparation of a database on parts and components manufacturers iv. Expansion of activities to mediate between suppliers and buyers of parts and components 	<ul style="list-style-type: none"> i. To provide support for product diversification by the supporting industries
5	Rationalization of Tax and Tariff Systems	<ul style="list-style-type: none"> i. To review luxury taxes ii. To secure an accord between industrial policy and the tariff system 	<ul style="list-style-type: none"> i. To secure an accord between industrial policy and the tariff system

Table 6-1 Overall Development Measures for the Supporting Industries (Continued)

	Item	Short Term	Medium and Long Term
6	Expansion of Investment Promotion Activities	<ul style="list-style-type: none"> i. Expansion of provision of information for investment promotion ii. Implementation of investment promotion activities toward clarified targets iii. Provision of assistance to investments by foreign small and medium parts and components manufacturers 	<ul style="list-style-type: none"> i. Promotion of a shift of production base from other ASEAN countries
7	Improvement of Technological Level of the Supporting Industries	<ul style="list-style-type: none"> i. Promotion of technological transfer from assemblers to their subcontractors ii. Improvement of production technologies with the assistance of experts iii. Expansion of technical guidance by public institutions iv. Upgrading of public technical support centers in the region v. Promotion of education and training on production management for engineers vi. Expansion of activities of trade associations 	<ul style="list-style-type: none"> i. Establishment of a technical assistance system by public institutions ii. Mediation of technological tie-ups
8	Improvement of Quality Level	<ul style="list-style-type: none"> i. Promotion of technical guidance from assemblers to their subcontractors ii. Improvement of quality control with the assistance of experts iii. Development of a quality control system suited to SMIs and preparation of an introduction manual for that system iv. Provision of information on quality control v. Preparation of Indonesian Industrial Standards 	<ul style="list-style-type: none"> i. Establishment of an institution which engages in the diffusion of quality control technologies ii. Organizing of personnel in charge of quality control
9	Improvement of R&D Activities	<ul style="list-style-type: none"> i. Provision of information for product diversification ii. Support for R&D by private companies iii. Promotion of the localization of the function of authorizing new parts and components at assemblers iv. Promotion of the transfer of foreign-invested assemblers' product designs and development processes to Indonesia v. Expansion of facilities of R&D institutions under MOIT 	<ul style="list-style-type: none"> i. Promotion of joint R&D activities by the industry, public sector and academic sector ii. Education and training for R&D personnel
10	Improvement of Managerial Skills of SMIs	<ul style="list-style-type: none"> i. To develop training programs on managerial skill and expand them to SMIs. ii. To re-train extension workers engaging in advisory services for SMIs iii. To expand advice and consultancy services to SMIs on management, including business planning, marketing, and financing. 	<ul style="list-style-type: none"> i. To establish an SMI consultant system in MOIT ii. To expand the function of SMI guidance by MOIT
11	Expansion of Human Resource Development	<ul style="list-style-type: none"> i. Expansion of employee training within the industries ii. Utilization of schemes for vocational training funded by foreign countries and organizations iii. Development of training programs for high need technologies 	<ul style="list-style-type: none"> i. Establishment of a national-level vocational training system which responds to the needs of industries. ii. Expansion of the skill certification system iii. Expansion of vocational training centers iv. Training of engineers and technicians

CHAPTER VII. ACTION PROGRAMS

1. SELECTION OF ACTION PROGRAMS

In the studies of the machinery parts, automotive parts and electrical and electronic parts sectors, various problems currently being faced by the supporting industries in Indonesia were identified, and possible countermeasures to these problems were investigated. Further, having synthesized the results of the investigations in each sector, recommendations were made for overall strategies for the development of the supporting industries.

These overall strategies are all vitally important, and work should begin on them as soon as possible. However, due to restraints on human resources and finances, it will be difficult to begin implementation of all of them at once. Therefore, after consideration of the following conditions, 1) the degree of urgency from the perspective of the majority of supporting industry companies which are facing business management difficulties due to the sudden decrease in demand, 2) measures which do not necessarily require major personnel or financial investments, such as import duty system reviews and the relaxing of regulations, etc., to be set aside, and 3) measures that have the possibility of receiving assistance from international aid organizations and of moving comparatively quickly to implementation, and which address the current most pressing problems, several hypothetical action programs were proposed, and the level of priority and feasibility of each investigated. Through this process, the following five action programs were recommended.

- 1) Development Study for the Establishment of an Export Promotion Master Plan.
- 2) Project for the Establishment of Model Industrial Service Centers (ISCs)
- 3) Supporting Industry Development Fairs
- 4) Expansion of Management Skill Development Program for Small and Medium Industries
- 5) Supporting Industry and Export Oriented Small and Medium Industries International Competitiveness Strengthening Program - Two Step Loan (TSL)

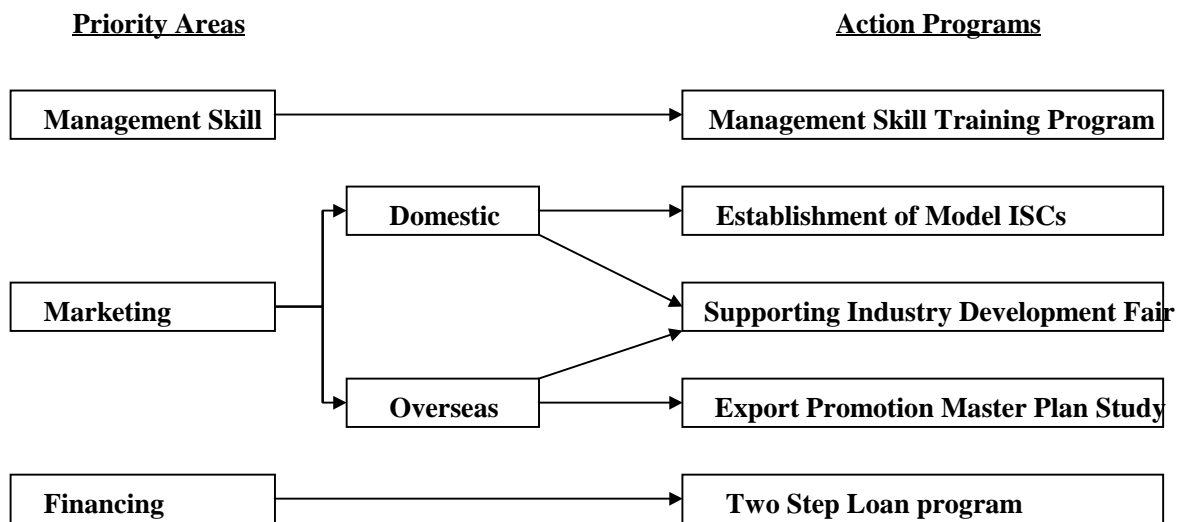
The major factors considered in the selection of the action programs were as follows.

- a. The majority of businesses in Indonesia's supporting industries are facing business difficulties as a result of the sudden drop in demand, following the economic crisis. The greatest requirement is for assistance in marketing.
- b. The supporting industry's main target market are the domestic assemblers, but there is a very large information gap between the supporting industry companies and the assemblers. There is a need for programs that provide the assemblers with information about potential domestic parts and components suppliers, and the supporting industries with information about the kinds of products for which assemblers want domestic supply.
- c. Under the current economic crisis, domestic demand is expected to take some time to recover. The development of new markets abroad has become a pressing matter for the supporting industries also. For businesses that have previously had little experience in exporting, there is a need for programs that will introduce them to potential customers overseas. Also, until now, support from Indonesia's public organizations has concentrated on the export of consumer goods, and there is an obvious problem with their ability to provide support for exports of the kinds of industrial products that are manufactured by the supporting industries. A master plan for the promotion of exports overall needs to be decided upon, and within that, the positioning of support strategies for industrial products made clear.
- d. Until now, businesses in the supporting industries have been engaged in subcontract production, but if they are to expand their domestic sales channels and to open up new markets overseas, they will need to develop their awareness as operators of their own businesses. It is vital that steps be taken to raise business operators' levels of awareness, and to further develop training programs for the improvement of management skills.
- e. Even if businesses in the supporting industries do develop new markets overseas, under the current financial situation, they will face very serious financial restraints in their

attempts to purchase the plant and equipment necessary to produce the required products, and to provide the required raw materials. There needs to be a program to provide mid to long term financing to businesses with overseas and domestic customers.

- f. Given the current fragility of the Indonesian supporting industries, assistance in marketing only or in management skills only or in financing only cannot be expected to bring satisfactory results. The priority must be on the development of comprehensive support programs that encompass marketing, management and technical skills and finance.

Fig. 7-1-1 Selection of Action Programs



2. CONTENTS OF THE PROPOSED ACTION PROGRAMS

2.1 ESTABLISHMENT OF EXPORT PROMOTION MASTER PLAN

(1) Background

The recent economic crisis in Indonesia was triggered by the sudden depreciation of the rupiah against the dollar, as a result of the currency crisis that swept through Asia from July, 1997. The sudden depreciation of the Indonesian currency was not caused by changes in trade structures, but rather by a drastic hemorrhaging of short term capital. However, in order to control the economic turmoil, and to achieve re-stabilized economic growth, it will be necessary to improve the export competitiveness of Indonesian products, and to aim for the stabilization of overseas earnings.

Thus, along with reducing the country's dependency on imports, one of the Indonesian government's main economic strategies is to try to promote exports by improving competitive strength in the ASEAN region. This thinking is reflected in the country's industrial policies also, which contain policies such as 1) promoting the expansion of production and exports in raw material processing industries that have a low dependency on imports, and are labor intensive, and expanding exports of these industries, and 2) in the nurturing and development of supporting industries, emphasize those elements that can contribute most to these labor intensive industries.

While the basic direction of these policies is not wrong, it is often that case that specific policies followed in the case of one individual industry do not always add up to an integrated policy. For example, the electric and electronics industry may be referred to as one with a typically high dependency on imports. Indeed, there are comparatively many foreign owned businesses that have entered this sector, using Indonesia as an export base, and their dependency on imported materials and parts and components is very high. However, the overall export value of this sector is even now higher than the total import value, including imports of raw materials and parts and components for products for the domestic market. The argument that import dependency is currently very high does not

reduce the potential of the electric and electronics industry as a motive force behind exports in the future. Also, if one considers the food processing industry as an example of a raw materials processing industry, the domestic demand for the agricultural products that make up almost all of the raw materials in this case will certainly increase in the future. As a result, there are many cases where there has been no study done as to just how much export reserve can be produced. Further, fresh fruit and vegetables and fish have more market value than processed, canned products. As far as export potential is concerned, the relative merits of the construction of a distribution network for fresh food products will have a greater effect than production costs. With regard to this aspect, there has not yet been sufficient study done as to the competitive strength of Indonesian products in the ASEAN region.

Within the ASEAN region, including Indonesia, the Common Effective Preferential Tariffs (CEPT) scheme for the formation of an ASEAN Free Trade Area (AFTA), is working to have practically all duties reduced to within 5%, by the year 2002. Against the backdrop of this movement, it is expected that a division of labor will develop within ASEAN, and Indonesia needs to come up with a master plan for the promotion of exports, after having fully considered which kinds of products it should specialize in the production of.

(2) Objective

To conduct a simulation of the kinds of structural division of labor that will develop in the region, after the formation of the ASEAN Free Trade Area (AFTA), after the target year 2002, and to formulate an export promotion master plan for Indonesia. Further, specific measures for the realization of this master plan will be drawn together into an action plan.

(3) Specific Details of the “Master Plan Study”

- 1) Analyze Indonesia’s export structure, the export competitive strength of her main

- industries, export promotion organization, export promotion policies, etc.
- 2) After having made a comparison between the export structures of the ASEAN nations, their export competitive strength, export promotion policies, etc. and those of Indonesia, conduct a simulation analysis of the division of labor structures that are likely to develop in the ASEAN region, after the formation of AFTA, and formulate a hypothesis as to the best export structure for Indonesia to adopt.
 - 3) Formulate a master plan for the eradication of bottlenecks from Indonesia's current export promotion activities, and for the advancement of the competitive strength of strategic industries. The master plan will contain, in essence, the following.
 - Basic direction for the export promotion policies.
 - Measures for the development and improvement of export promotion systems.
 - Measures for the development and strengthening of export promotion organizations and functions.
 - Measures for the expansion and strengthening of information provision.
 - Measures for the expansion and strengthening of trade mediation, trade research and advertising and display activities.
 - Measures for the development of export oriented industries.
 - 4) Draw up an action plan for the realization of the above master plan, in a format that relates to the master plan.

(4) Agencies Involved in the Implementation

The work of formulating the master plan will be undertaken by the Ministry of Industry and Trade's National Agency For Export Development (NAFED) and the Directorate General for Overseas Trade, the Directorate General for International Industry and Trade Institutional Cooperation and other agencies involved in export promotion. Also, the cooperation of international technical cooperation agencies will be requested, as they have considerable experience in the formulation of such national export promotion policies.

2.2 ESTABLISHMENT OF MODEL INDUSTRIAL SERVICE CENTER (ISC)

(1) Background

Small scale metal processing work industries in Indonesia are dispersed throughout several regions, such as the suburbs of Jakarta, Bogor, Tegal, Sukabumi, and Yogyakarta, etc. These local industries have the potential to become supporting industries for modern industry sectors, such as the automotive, electric and electronic parts and machinery industries, etc., but the majority of them are very small, and lack maturity in terms of business skill, technical skill and marketing skill. Therefore, they do not have sufficient links with foreign affiliated and other large assemblers.

The nurturing and development of these small firms has long been recognized as one of the Ministry of Industry and Trade's most important policies, and many different support strategies have been implemented. One of the most central of these policies is the establishment of Common Service Facilities (CSF). CSFs are equipped with various types of machinery and equipment that can be used in common by the enterprises of the local area, in response to the industrial needs of the area. Currently, there are 97 CSFs throughout Indonesia. They serve not only the metal processing industry, but also textiles, timber processing, ceramics, bamboo work, rattan work and leather work, etc. Further, in order to conduct technical training for local firms, using the CSF as a nucleus, TPLs (Field Extension Workers) were trained and stationed in local areas. There are currently just under 200 of these TPLs, working as either managers of the local CSFs, or as CSF liaison staff in the local offices of the Ministry of Industry and Trade. These TPLs are not civil servants, but are regarded as private sector field workers. The TPL system was changed into the TPP (Industrial Research Workers) system, in which the local staff of the Ministry of Industry and Trade were trained management and marketing support skills. A part of TPLs were also changed to TPPs, and given the status of civil servants. These TPPs are also providing support to the CSFs.

While the CSFs and TPLs are in place, the problem is that the CSFs were set up some 20 years ago, and their machinery and equipment have not been renewed, and are generally in a

state of considerable disrepair. Meanwhile, foreign affiliates and others in fields like metal processing work, etc., are beginning to demand ever higher levels of technical skill. The Ministry of Industry and Trade has drawn up a plan for the revitalization of the CSFs, and is planning to renew the machinery and equipment in them. However, in order to nurture local industries so that they can develop into supporting industries for the modern industries, merely renovating the CSFs will not be enough. A full range of instructional service capabilities will be required, covering all areas of business activity, such as technical development, quality control, management and marketing.

(2) Objective

Areas with a high concentration of metal processing work firms are potential bases for the supporting industries, and it is in these areas that model Industrial Service Centers (ISCs) will be set up, and the capabilities of the CSFs. expanded.

Specifically, two or three out of the existing CSFs will be selected, and the assistance of international cooperation agencies requested in furnishing the centers with modern machinery and equipment, and the introduction of the latest technologies. At the same time, the CSFs will be reorganized so that they are capable of functioning as comprehensive business centers, providing not only technical assistance, but management and marketing guidance as well.

Also, in the long term, using the experience gained in the model centers as a foundation, all existing CSFs will be restructured into profitable, self sufficient business center organizations, capable of providing firms in their areas with marketing information, as well as the introduction of technology needed to expand sales, and the technical and business guidance necessary for the improvement of competitive strength.

(3) Target Areas for the Establishment of Model Centers

From among metal working related CSFs that are situated in the areas where small and

medium metal working businesses are concentrated, two or three sites will be selected for the establishment of model centers. Owing to time constraints on the field study of Indonesia, a survey was conducted of the general conditions of the CSF at Sukabumi and Tegal and the surrounding businesses.

At Sukabumi, there are said to be around 180 metal working businesses. An examination of the actual activities of these companies shows that the work that they do is extremely diversified, and they can serve for almost any work, including sheet metal processing and welding, non-ferrous cast products, general parts and components for construction equipment, steel frames for construction, some mining machinery, civil engineering tools, instruments, artistic metal products, medical equipment and motorcycle parts, etc. They do not necessarily specialize in the "metal working area". In comparison, the businesses in the Tegal area all have some connection with metal products, such as sheet metal processing, welded structural parts, cast parts, agricultural tools, machinery and parts, parts and components for fishing vessels, etc., and may all be grouped in the "metal working area". In both areas, the majority of businesses have suffered the effects of the dramatic drop in domestic demand, though there are several companies that are busy, thanks to orders from Japanese construction machinery and agricultural machinery manufacturers. Many of the parts and components manufactured by these companies tend to be those which can be assembled in a fairly simple process of sheet metal press work and welding, such as the covers for large fans used at construction sites and brackets and arms, etc., for construction machinery.

Practically all of the local companies in these areas are using rather dilapidated machinery and equipment, and are processing various types of parts and components without much concern for quality. Even though the current technical level be improved considerably, with a slight improvement in the precision of single press work, or in welding techniques, it will still take time before they can achieve the stringent quality and delivery management levels demanded by automobiles and motorcycles and electric and electronic parts and components.

The CSFs were established some 20 years ago, and their facilities and equipment are noticeably dilapidated and run down. Some of the facilities and equipment are used by local

companies, but in actual fact they have become more like subcontractor factories for the companies that have many order, and have drifted quite far from their original aim of providing technical guidance for local enterprises, and now have all but lost their subjectivity. Under these conditions, introducing CNC machines and the latest equipment into the CSF, and attempting to develop primary subcontractors that could supply the assemblers directly with parts and components, would have little meaning. Rather, it would be more practical to replace and upgrade the currently dilapidated general purpose machines in the CSF, and enable them to manufacture metal work products, or the jigs and fixtures required in metal working. Using this kind of support to encourage those local companies that have a relatively high technical level to enter the parts and components market for secondary subcontractors and the after-sales market, and then using these companies as models for the guidance and education of smaller businesses would likely be more effective and bring results more quickly.

(4) Details of Activities of Model ISCs

The activities that the model ISCs are expected to be involved in are as follows.

1) Gathering of corporate information in the target areas.

The construction of a corporate data base for the verification of business management guidance and technical guidance needs, and for business mediation activities.

2) Providing businesses in the area with machinery and equipment for shared use.

Replacement of press mold, sheet metal processing and machining equipment in order to enable the manufacture of the jigs and tools required for the improvement of technical levels in metal working.

3) Encouraging the use of latest technology among the local enterprises.

Main technological topics will be a. improvement of general purpose press mold technology (better mold precision leads to higher product added value, and helps in securing orders), b. improvement in machining technology for cast products and die-cast products (leading to the improvement of product added value of companies manufacturing these products) and c. improvement of press technology (enabling production of parts and components with a higher level of precision than at present, and

allowing companies to respond to multiple item and small volume production needs), etc. Judging from the current activities of the local companies, press work and parts machining will probably be the main focus. Therefore, the order of priority is likely to be a, b and c.

4) Business management guidance for companies in the target areas

Providing company executives with business management guidance, marketing guidance and market and other business information.

(5) Project Costs and Staffing Plans

1) Equipment replacement costs

Even in locations like Tegal, where there has been comparatively good maintenance carried out, the machinery and equipment in the current CSFs tend to be in dilapidated condition, which means that their level of precision is low, and they are limited in the products than they can produce. Major items of equipment, which will be the focus of technical guidance, need to be replaced. Therefore, there are slight differences in details between the types of machinery and equipment that need to be purchased, and the CSF existing facilities, but the following table provides a basic reference.

Table 7-2-1 Tentative Upgrading Plan of CSF Facilities

	Press Mold	Metal Press	Machining	Cost (¥ 1,000)
NC lathe	x			15,000
NC milling machine	x		x	8,000
Surface grinding machine	x	x	x	5,000
Formed grinding machine	x		x	5,000
Tool grinding machine	x		x	3,000
Tools & jigs	x		x	7,000
Heat treatment equipment	x			10,000
Drafter	x		x	800
NC disk brake		x		8,000
Press machines	x	x		20,000
NC tarret punch press		x		10,000
Shearing machine		x		5,000
Roll bending machine		x		5,000
Punch sets (50 kinds)			x	5,000
TIC welding machine		x		1,000
MIG CO ₂ welding machine		x		1,000
Resistance welding machine		x		1,000
Measuring instruments (slide caliper, dial gage, scribing bloc, micro meter, etc.)	x	x	x	900
TOTAL	-	-	-	110,700

Source : JICA Study Team

2) Staffing plans

The existing CSFs basically have the staff that they require. However, given their current technical skill levels and business management skill levels, they would not be fully able to conduct the types of activities that would be required in order to promote and develop the expected activities of the model industrial service centers. In addition to receiving instruction and guidance from overseas experts in the fields listed below, as needs require, staff levels need to be augmented by staff from research organizations under the auspices of the Ministry of Industry and Trade, such as MIDC, etc. In particular, care needs to be taken to ensure that staff of sufficient caliber are selected as the Indonesian local counterparts to the foreign specialists in the technical and business management fields.

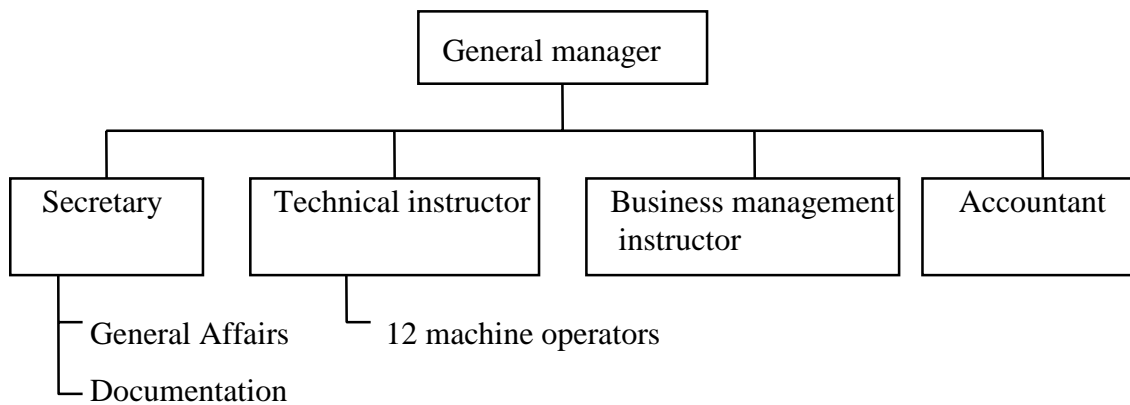
Foreign specialists

Press work engineer 1 person x 36 months

Mold design engineer 1 person x 36 months

Machining engineer	1 person x 36 months
Corporate management consultant	1 person x 36 months
Marketing consultant	1 person x 36 months

Fig. 7-2-2 Current Organizational Structure of CSF in Sukabumi



Source : UPT/LIK, Sukabumi

(6) Organizational Planning

Within the Ministry of Industry and Trade, the Directorate General for Small Scale Industry and Small Scale Trade, which currently has jurisdiction over the CSF, and the Directorate General for Metal, Machining, Electronics and Multifarious Industries, which is taking the lead in the development of the supporting industries, and the local area offices of the Ministry of Industry and Trade in the selected model areas, are still the leading organizations in the management of the model industrial service centres. In addition, the local governments provide the center buildings in the areas where the model centers are located. Also, these centers are supported by technical staff seconded from research institutions such as MIDC, etc., who come under the Ministry of Industry and Trade.

For the time being, as with the existing CSFs, the key staff in the model industrial service centers will be Ministry of Industry and Trade officials, or local government officials. On the other hand, the wages of the CSF machine operators and other center running expenses have to be met out of CSF earnings. In the future, the common facility section (machinery

and equipment department) should ideally become a self supporting unit, separated from other publicly managed instructional service departments.

(7) Implementation Schedule

The project will be implemented according to the following process.

Step 1: Plans for the establishment of industrial technology centers

The establishment plans will be set up in the following order.

- Selection of priority development areas (two or three locations)
- Understanding of the technical guidance and marketing needs of local industries
- Investigation of conditions of existing CSF facilities (UPT units)
- Clarification of equipment and facilities and technical instructors to renewed/
replaced
- Investigation of technical assistance available from public bodies
- Establishment of center management plans

Step 2: Establishment of centers

Establishment of model industrial centers by government and other participating and cooperating organizations.

Step 3: Training of technical instructors

Training of technical instructors by public research institutions, universities or overseas specialists.

Step 4: Guidance, etc., for local industries

Implemented in accordance with the activities described in (4), above.

Step 5: Review of center management system

A review of the long term management of the centers, including 1) organization of machinery and equipment departments as self supporting CSF, 2) establishment of cooperative set-up with public research institutions and universities, etc., and 3) plans for the renewal and replacement of center machinery, equipment and instruments.

Fig. 7-2-3 Implementation Schedule of Model ISC Establishment Program

	1st year				2nd year				3rd year			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Planning	■											
2. Facility Installment		■	■	■								
3. Training of instructors		■	■	■	■	■	■	■	■	■	■	■
4. Guidance		■	■	■	■	■	■	■	■	■	■	■
5. Management review											■	■

(8) Expected Results

- 1) The implementation of this project will be instrumental in raising the technical and product quality levels of businesses in the metal working industrial areas. In addition, it will also help to expand related markets.
- 2) By providing the managers of small businesses in the area with business management guidance, business information and production management training, the project will be able to transform those companies from traditional, small businesses into supporting industry enterprises in a modern industrial sector.
- 3) Providing higher class businesses in the area with technical services and appropriate guidance will enable them to develop into parts and components manufacturers capable of supplying to foreign affiliated assemblers.

2.3 SUPPORTING INDUSTRY DEVELOPMENT FAIR

(1) Background

Industrial development in Indonesia has led to the establishment of many foreign affiliated or joint venture assemblers in modern industry sectors, such as the automotive, electric and electronic and industrial machinery industries, and the production of many types of products for the export and domestic markets. However, the basic materials, parts and components of these industries are still largely imported. This keeps Indonesia's added value production at a low level, and is one factor that restricts Indonesia's international earnings.

The low level of linkage between the large assemblers and local small to medium sized businesses is largely due to the industrial structure in Indonesia, where businesses tend to be polarized into large scale enterprises or local, small scale businesses, and intermediate supporting industries capable of supplying the large assemblers with parts and components are as yet under-developed. One other important factor is that there is poor provision for business information in Indonesia, so that it is difficult for the large assemblers to gather information on companies that would be able to supply parts and components domestically, and for the local small to medium sized businesses to get information about the kinds of products that the large assemblers require. There exists an information gap between the two sides.

As a means of reducing this information gap, in recent years 'Supporting Industry Development Fairs' have been held in many countries and regions throughout Asia. At these fairs, producers of parts and components display their products in the hope of finding customers, and the assemblers display the types of parts and components that they need, in the hope of finding suppliers. Since 1992, Malaysia has been successfully hosting a fair for small to medium sized businesses, the 'SMI-EXPO', every year in various major cities.

(2) Objective

In the major cities in Indonesia, 'Supporting Industry Development Fairs' will be held in

order to gather together large domestic and foreign companies and local small and medium sized companies with the potential to become sub-contractees, with the aim of strengthening communication between the two sides, and promoting sub-contracting deals.

By holding these fairs every year on a regular basis, information on related companies can be gathered and used to construct a data base.

(3) Specific Details of the “Supporting Development Fair”

- 1) The kinds of parts and components that large companies in the automotive, electric and electronics and industrial machinery sectors, which assemble products and their major parts and components in Indonesia, are hoping to be able to supply from within Indonesia or the ASEAN region, will be displayed, in an effort to try to identify companies with the potential to become suppliers. As far as possible, large companies from Japan and other ASEAN nations will be invited to participate in the fair.
- 2) Small and medium sized companies that are producing parts and components for the automotive, electric and electronics and industrial machinery sectors, or who would like to be involved in that business, will display the kinds of products that they are capable of producing, in an effort to identify potential customer firms. As far as possible, small and medium sized companies from Japan and other ASEAN nations will be invited to participate in the fair.
- 3) In parallel with the fair, there will be seminars at which the representatives of large companies will be able to explain their companies’ parts supply strategies, and where experienced engineers will be able to talk about the kinds of technical information required in order to be able to enter the parts and components market.

(4) Organizations Involved

Organizations involved in the implementation of the fairs include departments concerned with the development of the supporting industries, such as the Ministry of Industry and

Trade's Directorate General for Small Scale Industry and Small Scale Trade, and Directorate General for Metal, Machinery, Electronics and Multifarious Industries, as well as Indonesia's National Agency For Export Development (NAFED), GAIKINDO (Association of Indonesian Car Manufacturers), GEI (Association of Electronics and Electrical Home Appliances Industries of Indonesia), GIAMM (Association of Indonesian Automotive Parts Manufacturers), GIAMMA (Federation of Indonesian Metalworks and Machinery Industries), and other related industrial groups.

In addition, international trade promotion organizations with experience in running these kinds of fairs, and that are able to invite foreign firms to attend, will be called upon for their cooperation.

(5) Supporting Industry Development Fair - Case study

Rather than holding a large scale, one-off Supporting Industry Development Fair, it would be better to hold smaller events, every year, in major Indonesian cities. However, in this Study, the holding of the first such event in Jakarta were assumed, and have outlined the following tentative plan was established:

1) Exhibitors

Around 150 exhibitors, including 1) approximately 50 large scale assemblers located in Indonesia, assembling automobiles, electric and electronic goods and industrial machinery or parts and components, and wishing to increase parts supply within Indonesia, 2) around 20 companies assembling similar products in Japan and the ASEAN region, and considering obtaining parts and components from Indonesia and 3) around 80 Indonesian small and medium sized enterprises that are considering supplying parts and components to assemblers in Indonesia, Japan and the ASEAN region.

2) Venue

International exhibition ground in Jakarta or environs.

3) Length of exhibition

Three days

4) Required exhibition space

Large assembler booths: 15m²

Small and medium parts manufacturer booths:9m²

5) Estimated costs

Approx. US\$400,000

6) Other

In parallel with the exhibitions, representatives from the major assemblers would present their parts supply strategies, or experienced engineers would give seminars on the kinds of technical information required for entry into the parts and components market.

2.4 MANAGEMENT SKILL DEVELOPMENT PROGRAM

The small and medium scale supporting industries in Indonesia have faced with serious managerial problems including the sharp shrinkage of the market and the lack of working capital in the economic crisis. The support to these industries in the form of financial advise for fund recruitment, e.g., use of institutional loan schemes for small industries, and assistance to marketing activities, especially export marketing, are highly needed. From the medium term point of view, the acquisition of modern managerial techniques on production and management, as well as the modernization of production facilities and quality improvement, is essential for the small and medium scale industries to grow to be internationally competitive parts and components industries. It is necessary to provide regular management advice and technical guidance for the small and medium scale supporting industries to achieve this target.

Considering these needs, it is proposed to expand the guidance to the small and medium scale industries by the Ministry of Industry and Trade (MOIT) and to provide training programs which meet the current necessity of these industries to the priority small and medium scale industries all over the country.

2.4.1. Extension Workers (TPPs) Revitalization Program

(1) Background

The field extension worker (Tenaga Penyuluh Lapangan, TPL) system was created in 1978. TPLs were dispatched to UPTs and Sentras and engaged in the guidance of small enterprises on a contract basis. In 1991, MOIT reviewed the system and changed it into the industrial research worker (Tenaga Penyuluh Perindustrian, TPP) system, when some of TPLs were converted to TPPs and given the status of civil servants. TPPs were transferred to the Directorate General of Small Industry and Trade in February, 1999 in order to reorganize their activities to support small enterprises. There are 1,043 TPPs in 27 provinces.

One of major problems of TPPs is the necessity of upgrading knowledge and capability of TPPs. At the beginning, TPLs were trained in CHEVEST. However, at present, a

systematic training is not given to TPPs. There are a certain number of TPPs lacking experience in the field among those who were transferred to be TPPs in the 1990's. Therefore, the re-training of TPPs, especially, to make their capability meet the development of the small industry and progress in its technological level, is necessary. The second problem of TPPs is that it is necessary to establish the management system of TPPs. The well-organized management system of TPPs, including experience sharing and career path, has not established because they separately work in the region. Considering these problems, it is an urgent task to upgrade the capability of TPPs and establish the management system of TPPs to accelerate the development of the small industry.

(2) Objective

The objective of this sub-program is to set up the management system of TPPs, upgrade the capability of TPPs, and expand consulting services to small and medium scale enterprises.

(3) Content of the Program

- i) To set up the management system of TPPs and formulate the master plan for the development of TPPs

The following tasks will be carried out:

Identification of the needs of small and medium scale enterprises to guidance and consultancy services from TPPs

Preparation of standards for the evaluation of TPPs' skills and capabilities

Preparation of data base of TPPs

Establishment of career planning for TPPs

Reorganization of TPPs' organization for more effective guidance to small and medium scale enterprises (Effective organizational structure, clear responsibility, cooperation with related organizations, information on successful cases, better communication among TPPs, etc.)

Preparation of manuals of the guidance and consultancy services to small and medium scale enterprises

When the above management system is established and data base of experience in field services is accumulated, the following functions will be added to TPPs after examination.

- Research on problems concerning management of small and medium enterprises
- Study on the situation of small and medium enterprises
- Counseling service on management of small and medium enterprises
- Development of skills for guidance and consultancy services on management of small and medium enterprises

ii) To make a plan of TPP re-training and implement it

The following tasks will be carried out:

Designing of content of TPP re-training

The content of training necessary for the upgrading of management guidance skill, e.g., regulations for small scale enterprises, corporate diagnosis, marketing, management, production management, information management, etc., will be designed. Field training for TPPs lacking field experience will be included. A system in which TPPs can share their experience and exchange their views will be also examined.

Preparation of a training plan

A training plan of TPPs according to the level of experience and capability will be prepared and the implementation schedule of training will be made.

Implementation of the training plan

The training of TPPs will be regularly carried out and the TPPs' capability will be continuously upgraded.

(4) Implementing Organizations

Directorate General of Small Industry and Trade under MOIT will be responsible for the establishment of the master plan. As for training programs for TPPs, it will cooperate with PUSBINLAT, R&D institutions under MOIT, etc.

It is desirable to receive the cooperation from overseas organizations which have experience

in the field of management and technical guidance to the small and medium scale enterprises. The following types of support from overseas are needed:

- i. Assistance to the establishment of the management system of TPPs
 Dispatched experts will give advise to the establishment of the management system, formulation of the master plan, and preparation of management guidance manuals.
- ii. Assistance to the development of the training plan
 Dispatched experts will support the designing of the training plan.
- iii. Provision of equipment for the activities of TPPs
 Such equipment as computers, motorcycles, equipment for guidance and consultancy services, will be necessary to facilitate TPPs' activities.

(5) Implementation Schedule

The implementation schedule of this program is as shown in the figure below.

Fig.7-2-4 Implementation Schedule for Extension Workers Revitalization Program

		Year				
		1 st	2 nd	3 rd	4 th	5 th
1	Establishment and Enhancement of Organization for TPP	██████████				
2	Preparation of TPP training programs		██████████			
3	Development of TPP training programs and SMI Counsuting Manual		██████████	██████████		
4	Implementation of training programs	██████████	██████████	██████████	██████████	██████████
5	Provision of equipment for the activities of TPPs		██████████	██████████	██████████	██████████

(6) Cost

Most part of expenses for this program have a nature of being funded by the current budget of

the Ministry of Industry and Trade. However, it is necessary to seek for additional sources for finance, e.g., foreign donor countries and/or international organizations, in order to overcome a problem of scarce budget. Major expense items are as follows:

- i. Expenses for printing SMI Consulting Manuals
- ii. Expenses for training TPPs
They include payments to instructors, transportation fees, accommodations expenses, expenses for teaching materials, etc.
- iii. Expenses for equipment
Provision of computers to be used for management analysis, motorcycle/automobile for transportation will be large expense items.

A sum of US\$200,000 will be annually necessary if the following expenses are made.

- i. Training of TPPs
(If a two-week workshop with about 50 participants is held five times a year in Jakarta)
 $US\$15,000/\text{time} \times 5 \text{ times} = US\$75,000$
- ii. Provision of Equipment
(If 100 sets of computers are provided each year)
 $US\$1,200/\text{set} \times 100 \text{ sets} = US\$120,000$

2.4.2. Expansion of Training Programs for the Improvement of the Management Skills of the Small and Medium Scale Industries

(1) Background

Pusat Pembinaan Pelatihan Keterampilan dan Kejuruan (PUSBINLAT) under MOIT provides various kinds of training programs for the upgrading of managerial skills of the industries. They include entrepreneurship development as well management on production, marketing, finance, and human resource development.

More practical training programs should be urgently prepared and provided to a wide range of small and medium industries for the improvement of their management skills immediately management to solve managerial problems and expand markets, including overseas market.

(2) Objective

The objective of this sub-program is to upgrade management training through PUSBINLAT. The main targets of training are: i) managers of small and medium enterprises, and ii) the above mentioned TPPs.

(3) Content of the Program

The following activities will be carried out by PUSBINLAT:

- to develop curriculum on small and medium enterprise management
- to hold short-term courses on small and medium enterprise management
- to hold long-term courses on small and medium enterprise management

Curriculum will be developed through the following measures:

- Review of existing curriculum
- Joint development with outside organizations
- Participation of outside experts

The following are examples of curriculum to be developed.

Short-term Courses: To be held at PUSBINLAT, Kanwil, Kandep, and other related local centers

Period: Night courses, one day courses, and 1 to 2-week courses

Courses: Examples of courses are as follows:

Marketing/ export marketing/ financial management and fund raising/
human resource management/ production management/ quality control/
entrepreneurship development/ small and medium enterprise diagnosis and
consulting skill development

Long-term Courses: To be held at Akademi Pimpinan Perusahaan (APP) under the supervision of PUSBINLAT.

Period: 3 to 6 months

Courses: Management diagnosis, business management and production management

Content: Combination of training at APP, correspondence course, and practice/team project at small and medium enterprises.

(4) Implementing Organizations

PUSBINLAT, including its academies, will be responsible for the implementation of the Program. Curriculum will be developed with the cooperation from the Pendidikan dan Pelatihan Ekspor Indonesia (PPEI), universities, the Ministry of Manpower, and Ministry of Education and Culture.

It is also necessary to receive the cooperation from the private sector, in the form of provision of training facilities, recruit of participants, dispatch of lecturers, sharing of expenses, etc., in implementing training programs.

As for this program, the following assistance from overseas would be desirable.

- i. Overseas training of instructors

Although outside instructors such as university professors, consultants, private management education and training institutions are actively used, it is necessary to train internal instructors. Chief instructors in charge of curriculum development and instructor training will be sent for overseas training.

- ii. Receipt of experts for curriculum development and instructor training

Dispatched experts will engage in curriculum development and training of instructors.

(5) Implementation Schedule

The implementation schedule of this program is as follows:

Fig. 7-2-5 Implementation Schedule for Expansion of Training Programs

		Year				
		1 st	2 nd	3 rd	4 th	5 th
1	Development of curriculum	████████████████████				
2	Implementation of short-term training courses	████████	██			
3	Implementation of long-term training courses		██			

2.5 SUPPORTING AND EXPORT ORIENTED SMALL AND MEDIUM INDUSTRIES INTERNATIONAL COMPETITIVENESS STRENGTHENING PROGRAM - TWO STEP LOAN (TSL)

(1) Background

Because they were hard hit by the currency crisis and following socio-economic turmoil, all of the Indonesian industries have been affected very severely. The manufacturing sector, which had been a locomotive of the past sustained high economic growth in Indonesia, was no exception. Due to 1) the drastic shrinkage of domestic demand, 2) the sky-high inflation of imported raw materials, parts and components, and 3) the destruction of transport and other infrastructure facilities, the gross output of the sector in the first half of 1998 is estimated to have contracted by 14%.

While the majority of the Indonesian manufacturing industries stand at the edge of survival caused by serious managerial problems in the domestic market, they are also faced with a severe challenge from outside the country. Under the CEPT scheme, a majority of products are to be traded within the ASEAN market with 0 to 5% custom duties by the year 2002.

Under the above circumstances, the implementation of the following two financial measures is urgently needed. One is the immediate financial rescue package in response to the lack of working capital of the majority of small and micro scale industries. The other is financial support for strengthening the international competitiveness of the supporting and export-oriented industries, by upgrading both their production technologies and facilities. As for the former, the Government has already initiated a series of programs such as “the Working Capital Support Fund for Small and Medium Enterprises” established under the control of the Ministry of Industry and Trade or “the Credit for Small-scale and Micro Business through Smallholder Credit Banks” under the control of the Ministry of Cooperatives and Small and Medium Enterprises.

The Proposed project, thus, is mainly for the purpose of the latter, and is directed to those

Indonesian Small and Medium Industries which have the potential to grow to become internationally competitive companies, which could be the locomotive of the future industrial development of Indonesia.

(2) Objective

- 1) To strengthen the international competitiveness of the Indonesian supporting industries by providing both technical and financial support
- 2) To straighten the export capabilities to the Indonesian Small and Medium Industries by providing both technical and financial support

(3) Target Industries

- 1) Those supporting industries that have the potential to be internationally competitive by providing financial support for the expansion of their production facilities
- 2) Small and medium scale supporting industries that have the potential to produce internationally competitive products and to increase their sales both for domestic and overseas markets by providing financial support for the procurement of raw materials
- 3) Those small and medium industries that would largely expand their exports by providing financial support both for the expansion of production capacity and for raw materials and parts procurement

(4) Contents of the Proposed Project

The proposed project consists of the following 4 packages of schemes.

Package 1. Supporting Industry International Competitiveness Strengthening Fund

Making use of the Two Step Loan (TSL) scheme of international financing organizations,

capital investment funds are provided, and the international competitiveness of the Indonesian supporting industries is to be strengthened. A part of the TSL funds is to be allocated to the establishment and management of a technical support service team (TSST-Package 4), which would give technical support service for supporting industries and would also work as an intermediary between assemblers and supporting industries in technical areas.

1) Total Loan Fund Scale

Rp. 300 billion

2) Target Industries

- Indonesian local majority companies
- Manufacturing industries which supply parts, components or engineering services for those assembly industries as industrial machinery, automotive or electric and electronics industries
- Those industries whose technical capability is evaluated as a satisfactory level by TSST
- Those industries which received a long-term purchase guarantees from assemblers

3) Lending Conditions

Use of the funds : Capital investment funds for production expansion

Maximum amount: Rp. 20.0 billion for small industries having less than 20 employees

Rp. 10.0 billion for industries having over 20 employees

Interest rates : SBI for small industries having less than 20 employees, but max. 20%

SBI + 5% for industries having over 20 employees, but max. 25%

Repayment period: 3 to 10 years including 1 to 3 years grace period

Loan guarantee : a. Financial appraisal by handling banks

b. Technical appraisal by the technical support service team

c. Assemblers' guarantees for long-term purchase

d. Credit guarantee by a credit guarantee corporation, according to its necessity

Package 2. Small and Medium Supporting Industry Financial Support Fund

Making use of the Two Step Loan (TSL) scheme of international financing organizations, short-term working capital funds for the procurement of raw materials and parts are provided for those small and medium supporting industries which have enough technical capabilities. A part of the TSL funds is to be allocated to the establishment and management of a technical support service team (Package 4).

1) Total Loan Fund Scale

Rp. 125 billion

2) Target Industries

- Indonesian local majority companies
- Small and medium manufacturing industries having less than 300 employees, which supply parts, components or engineering services for those assembly industries as industrial machinery, automotive or electric and electronics industries
- Those industries whose technical capability is evaluated as a satisfactory level by TSST
- Those industries which received a long-term purchase guarantees from assemblers

3) Lending Conditions

Use of the funds : Working capital for the procurement of raw materials and parts which are needed for the production of ordered products

Maximum amount: Rp. 1.0 billion for small industries having less than 20 employees
Rp. 5.0 billion for industries having over 20 employees

Interest rates : SBI + 5%, but max. 30%

Repayment period: Within 1 year

Loan guarantee : a. Financial appraisal by handling banks
b. Technical appraisal by the technical support service team
c. Assemblers' guarantees for product purchase

- d. Credit guarantee by a credit guarantee corporation, according to its necessity

Package 3. Export Oriented Small and Medium Industry Development Fund

Making use of the Two Step Loan (TSL) scheme of international financing organizations, capital investment, as well as working capital, funds are provided, and the export capabilities of the Indonesian small and medium industries are to be strengthened. A part of the TSL funds is to be allocated to the establishment and management of TSST, which would give technical support service for export-oriented small and medium industries and would also work as an intermediary between importers and the Indonesian industries in technical areas.

1) Total Loan Fund Scale

Rp. 500 billion

2) Target Industries

- Indonesian local majority companies
- Small and medium manufacturing industries having less than 300 employees, which export their products
- Those industries whose technical capability is evaluated as a satisfactory level by TSST
- Those industries which received purchase guarantees from importers

3) Lending Conditions

Use of the funds : Capital investment and working capital funds for export expansion

Maximum amount: Rp. 2.0 billion for small industries having less than 20 employees

Rp. 10.0 billion for industries having over 20 employees

Interest rates: SBI for small industries having less than 20 employees, but max. 20%

SBI + 5% for industries having over 20 employees, but max. 25%

Repayment period: Working capital ; within 1 year

Capital investment ; 3 to 10 years including 1 to 3 years grace period

- Loan guarantee:
- a. Financial appraisal by handling banks
 - b. Technical appraisal by the technical support service team
 - c. Assemblers' guarantees for long-term purchase
 - d. Credit guarantee by a credit guarantee corporation, according to its necessity

Package 4. Supporting Industry and Export Oriented Small and Medium Industry
Technical Support Program

In Indonesia, there are many foreign experts who work for the technical upgrading of many Indonesian small and medium scale industries. From Japan, for example, JICA dispatches a large number of long-term and short-term technical experts to various public technical service organizations, JODC assists in sending around 80 to 100 long-term experts every year for the technical guidance of small and medium scale private industries and JETRO also dispatches 10 to 20 short-term technical experts per year in the area of supporting industries.

Although these experts are contributing to the development of a large number of small and medium scale industries in Indonesia, their activities are not necessarily organized. Their range of activities is not confined to technical areas, but often expanded to such other areas as marketing or management. Thus, it is considered that the effects of their activities could further be enlarged, if they could assist in the financial recruitment of these companies.

In consideration of the above, Package 4 proposes the establishment of a technical support service team in the Ministry of Industry and Trade, for which a part of the proposed TSL funds is to be allocated.

1) Total Management Cost of the Technical Support Service Team

Rp. 75 billion (Rp. 25 billion/year x 3 years)

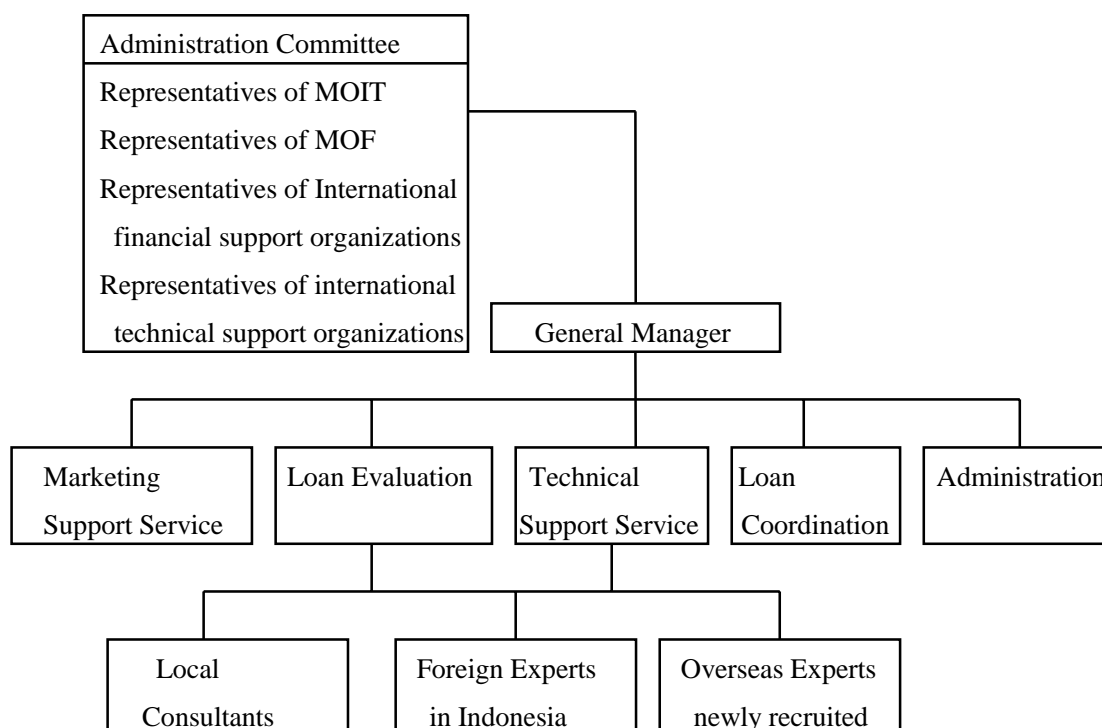
2) Activities of the Technical Support Service Team

- Organizing the total activities of technical support experts in Indonesia
- Access to the market needs for technical experts and arranging the recruitment of new experts
- Work as intermediaries between assemblers and supporting industries
- Work as intermediaries between importers and local potential exporters
- Support the access of capable SMIs to relevant financing schemes, and implement the technical appraisal for the proposed TSL loan applications
- Coordination of the progress of loan activities with handling banks and monitoring of the results of loan disbursement

3) Organization of the Technical Support Service Team

TSST is a temporary organization which is formed within MOIT and support the smooth implementation of loan schemes. The actual technical service activities would be conducted by 1) those foreign experts who are dispatched from various international technical support organizations to Indonesia through various cooperation schemes, 2) Indonesian local consultants or 3) foreign experts newly recruited for the proposed project. However, the final accreditation right of technical evaluation would be kept within TSST. In a long run, the activities of TSST should be transferred to an independent private organization which would financially be operated by the revenue of technical appraisals or associated technical service activities.

Fig. 7-2-6 Organization of TSST



(5) Remarks for Implementation

For the implementation of this project, the following points should be noted.

- 1) Owing to the current fragility of the Indonesian financial system overall, it is not easy to select reliable handling banks. Selection should be made after narrowing the focus on those banks which a) fully understand the purport of this project, b) have a financial structure that will allow them to expand their financing and c) have sufficient capability to screen small and medium companies for financing. Also, Indonesia is currently investigating the setting up of a trade loan bank and a small and medium sized enterprise loan bank. These new banks will likely be prime candidates as handling banks.
- 2) Many Indonesian companies have poor credit capability, because of the burden of repayment of past loans. Also, because financial institutions are also requiring improved equity ratios, they are extremely cautious about expanding new loans. In order to start a new loan program under these circumstances, government policies for the expansion of

the public credit guarantee system will be required. The Indonesian government has already announced plans for the expansion of the credit guarantee function of PT Askrindo. In the loan administration work of this project also, it will be necessary to involve this kind of credit complementation system.

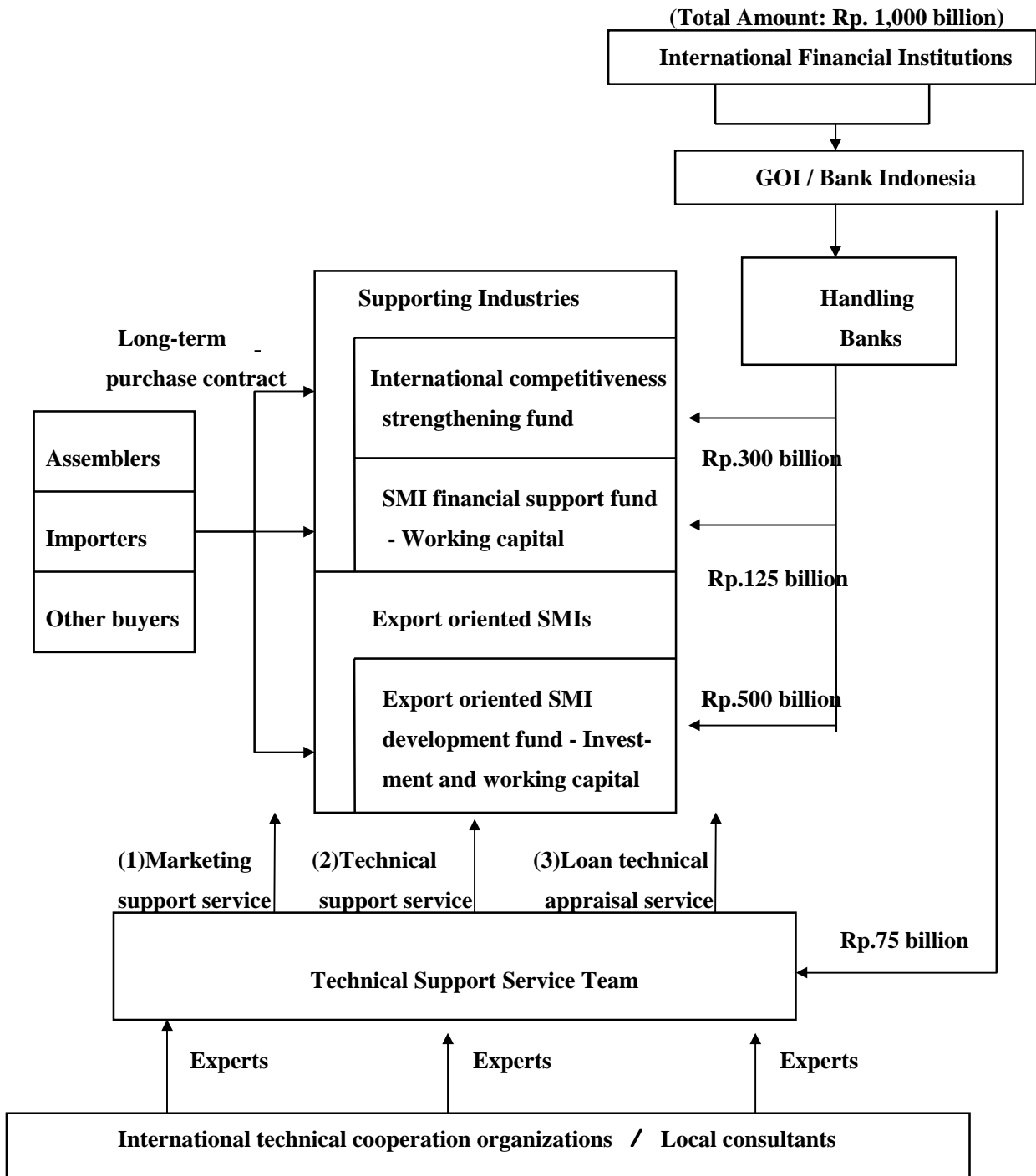
- 3) Though their size and the importance of the required financing may be small, the role played by the technical support service team is very important. Not only do they handle the distribution of operating capital, but they need to consider carefully the creation of systems for the integration of overseas specialists, sent with the support of international technical support organizations through other cooperation schemes, into the project, as support groups.

Table 7-2-2 Outline of Loan Schemes

	Use of Funds	Target Industries	Maximum Loan Amount (Rp. Billion)	Interest Rates (Maximum)	Loan Period (Grace Period)	Total Funds (Rp. Billion)
Supporting industry international competitiveness strengthening fund	Capital investment	Supporting industries	No. of employees: less than 2.0; 2.0 20 or more; 10.0	SBI(20%) SBI+5% (25%)	3 - 10 years (1 - 3years)	300.0
Small and medium supporting Industry financial support fund	Working capital	Supporting industries with less than 300 employees	No. of employees: less than 2.0; 1.0 20 or more; 5.0	SBI + 5% (30%)	Within 1 year (none)	125.0
Export oriented small and medium industry development fund	Capital investment & working capital	Export-oriented small and medium industries with less than 300 employees	No. of employees: less than 2.0; 2.0 20 or more; 10.0	SBI (20%) SBI + 5 % (25%)	Capital funds:3-10 years (1 ~ 3 years) Working capital: 1year (none)	500.0
Supporting industry and export oriented small and medium industry technical support program	Technical service	All supporting and export-oriented industries				75.0

Source : JICA Study Team

Fig. 7-2-7 Concept of Supporting Industry and Export Oriented SMI International Competitiveness Strengthening Program



REFERENCE

- Badan Pusat Statistik. (1998, December). Tinjauan Ekonomi Regional Indonesia 1994 - 97.
- Badan Pusat Statistik. (1998, April). Indonesian Foreign Trade Statistics - Export 1997.
- Badan Pusat Statistik. (1998, April). Indonesian Foreign Trade Statistics - Import 1997.
- Badan Pusat Statistik. (1998, March). National Income of Indonesia 1994 - 97.
- Badan Pusat Statistik. (1998, January). Large and Medium Manufacturing Statistics 1996.
- Badan Pusat Statistik. (1998, January). Large and Medium Manufacturing Statistics 1996 Indicators.
- Badan Pusat Statistik. (1997, January). Large and Medium Manufacturing Statistics 1995.
- Badan Pusat Statistik. (1998, December). Monthly Statistical Bulletin Economic Indicator.
- Bank Indonesia. (1999, January). Indonesian Financial Statistics.
- Bank Indonesia. (1998). Bank Indonesia -Report for the Financial Year 1997/98.
- Indonesia Export Training Center. (1998). Buletin Pelatihan Ekspor No. 04/1998.
- International Monetary Fund. (1999, March). Indonesia Supplementary Memorandum of Economic and Financial Policies, Fourth Review under the Extended Arrangement.
- International Monetary Fund. (1998, November). Indonesia Supplementary Memorandum of Economic and Financial Policies.
- Japan International Cooperation Agency. (1997, February). The Study on the Development of Supporting Industries in the Republic of Indonesia.

APPENDIX

- APPENDIX 1. STUDY TEAM MEMBER LIST
- APPENDIX 2. QUESTIONNAIRE SHEET FOR THE QUESTIONNAIRE SURVEY
- APPENDIX 3. SUMMARY OF THE RESULTS OF QUESTIONNAIRE SURVEY
- APPENDIX 4. LIST OF INDUSTRIAL ASSOCIATIONS IN MAJOR ASIAN COUNTRIES

APPENDIX 1.

STUDY TEAM MEMBER LIST

APPENDIX 1. STUDY TEAM MEMBER LIST

Task	Name	Company
Team Leader	Takashi Nobehara	The Japan Research Institute Ltd.
Industrial Development Policies	Kazuo Mishima	The Japan Research Institute Ltd.
Finance Systems	Toshio Tachibana	The Japan Research Institute Ltd.
Industry Analysis (Machine Parts)	Toshihide Hayashi	Yachiyo Engineering Co., Ltd.
Industry Analysis (Automotive Parts)	Hiroshi Imai	The Japan Research Institute Ltd.
Industry Analysis (Electrical and Electronic Parts)	Tatsuro Bando	The Japan Research Institute Ltd.
Market Analysis (Export-oriented Products)	Yoichi Matsui	Pentrade Corporation
Production Technology (Machine Parts)	Tetsuo Nihei	Yachiyo Engineering Co., Ltd.
Production Technology (Automotive Parts)	Masahiro Hamano	The Materials Process Technology Center of Japan
Production Technology (Electrical and Electronic Parts)	Masahiro Chiji	I. K. Tool International Co., Ltd.
Marketing and Export Promotion	Tamaichi Matsumoto	The Japan External Trade Organization (JETRO)
Market Analysis*	Reiko Iizuka	The Materials Process Technology Center of Japan

*Only studied in Japan.

APPENDIX 2.

QUESTIONNAIRE SHEET FOR THE QUESTIONNAIRE SURVEY

**QUESTIONNAIRE
TO
SUPPORTING INDUSTRIES
AND
OTHER SMALL & MEDIUM INDUSTRIES
IN INDONESIA**

***KUESIONER
UNTUK
INDUSTRI PENUNJANG
DAN
INDUSTRI KECIL & MENENGAH LAINNYA
DI INDONESIA***

Company Name :
Nama Perusahaan
Line of Business :
Bidang Usaha
Major Products :
Produk Utama
Interview Date :
Tanggal Wawancara
Interviewee Name : Position :
Nama Yang Diwawancara Jabatan
Interviewer Name : Signature :
Nama Pewawancara Tanda tangan

1. COMPANY OUTLINE/DATA UMUM PERUSAHAAN

1-1 <u>Company Name</u> <i>Nama Perusahaan</i>			
1-2 <u>Address</u> <i>Alamat</i>	<input type="checkbox"/> EPZ	<input type="checkbox"/> EPTE	Tel: Fax: E-Mail:
1-3 <u>Established in</u> <i>Didirikan tahun</i>	19	1-4 <u>Status of Company</u> <i>Status Perusahaan</i>	<input type="checkbox"/> PMDN <input type="checkbox"/> PMA <input type="checkbox"/> BUMN <input type="checkbox"/> NON-PMA/PMDN
1-5 <u>Paid-up Capital</u> <i>Modal disetor</i>	<u>Million Rp. of which Domestic</u> % <u>Foreign</u> % (<u>Country:</u>) <i>Juta Rp., terdiri dari: Domestik</i> <i>Asing</i> <i>Negara</i>		
1-6 <u>Sales Amount (1997)</u> <i>Penjualan (1997)</i>	<u>Million Rp./Year</u> <i>Juta Rp./Tahun</i>	1-7 <u>No. of Employee</u> <i>Jumlah Tenaga Kerja</i>	<u>Persons</u> <i>Orang</i>

1-8 What are your company's production items? Please check V in of applicable products.
Apakah barang-barang produksi perusahaan Anda? Beri tand V pada untuk produk-produk yang sesuai.

<p>Parts and Component for Electrical equipment/Part dan Komponen Peralatan listrik</p> <p><input type="checkbox"/> A. Parts for consumer electrical goods (washing machine, refrigerator, etc.) <i>Part untuk peralatan listrik rumah tangga (mesin cuci, kulkas, dll.)</i></p> <p><input type="checkbox"/> B. Part for industrial electric equipment (motors, transformers, generators, etc.) <i>Part untuk peralatan listrik industri (motor listrik, trafo, pembangkit listrik, dll.)</i></p> <p>Parts and Component for Electronic equipment/Part dan Komponen untuk Peralatan elektronik</p> <p><input type="checkbox"/> C. Parts for consumer electronic goods (TVS, radios, video equipment, etc.) <i>Part untuk elektronik konsumsi (TV, radio, peralatan video, dll.)</i></p> <p><input type="checkbox"/> D. Part for industrial electronic equipment/Part untuk peralatan elektronik industri</p> <p><input type="checkbox"/> D-1 Part for telecommunication devices/Part untuk peralatan komunikasi</p> <p><input type="checkbox"/> D-2. Part for office equipment/Part untuk peralatan kantor.</p> <p>Part and Component for Automobiles/Part dan Komponen untuk Otomobil</p> <p><input type="checkbox"/> E. Parts for four-wheel vehicles/Part untuk kendaraan roda empat</p> <p><input type="checkbox"/> E-1 Parts for passenger vehicles/Part untuk kendaraan penumpang</p> <p><input type="checkbox"/> E-2 Parts for commercial vehicles/Part untuk kendaraan niaga</p> <p><input type="checkbox"/> F. Parts for motorcycles/Part untuk sepeda motor</p> <p>Parts and Component for Machinery/Part dan Komponen untuk Permesinan</p> <p><input type="checkbox"/> G. Parts for agricultural machinery/Part untuk mesin pertanian</p> <p><input type="checkbox"/> H. Parts for Pumps/Part untuk pompa</p> <p><input type="checkbox"/> I. Part for common machine tools/Part untuk mesin perkakas umum</p> <p><input type="checkbox"/> J. Textile machines/Mesin tekstil</p> <p><input type="checkbox"/> K. Combustion engines/Motor bakar</p> <p><input type="checkbox"/> L. Others Machinery/Mesin lainnya.</p> <p>Others/Lain-lain</p> <p><input type="checkbox"/> M. Textile products/Produk tekstil</p> <p><input type="checkbox"/> N. Footwear/Alas kaki</p> <p><input type="checkbox"/> O. Processed foods/Makanan olahan</p> <p><input type="checkbox"/> P. Handicrafts/Kerajinan</p> <p><input type="checkbox"/> Q. Others/Lain-lain (Please specify/Sebutkan:)</p>
--

3-3 If yes, please write major export products in terms of value and its export amount and destination.
Bila ya, mohon tuliskan produk-produk ekspor utama dalam nilai, volume dan negara tujuan.

No.	Name of Product/ <i>Nama Produk</i>	Amount/ <i>Nilai Ekspor (US\$)</i>	Major Destination Countries/ <i>Negara Tujuan Utama</i>	Major Competing Countries in the Market/ <i>Negara Pesaing Utama</i>
1				
2				
3				
4				
5				

3-4 What are major problems or difficulties in promoting exports? Please check applicable items and specify the content.
Apa yang menjadi masalah dan kesulitan utama dalam mempromosikan ekspor? Beri tanda pada item yang sesuai.

- a. Government policies/*Kebijakan pemerintah* (Please specify/*Sebutkan:*)
- b. Financing/*Pembiayaan* (Please specify/*Sebutkan:*)
- c. Foreign exchange/*Nilai tukar mata uang asing* (Please specify/*Sebutkan:*)
- d. Taxation/*Perpajakan* (Please specify/*Sebutkan:*)
- e. Infrastructure/*Prasarana* (Please specify/*Sebutkan:*)
 (Ports and airports/*Pelabuhan dan Bandara, transportation/transportasi, communication system/sistem komunikasi, etc.*)
- f. Company's export promotion capability/*Kemampuan promosi ekspor perusahaan*
 (Please specify/*Sebutkan:*)
- g. Company's export handling capability/*Kemampuan perusahaan menangani ekspor*
 (Please specify/*Sebutkan:*)
- h. Others/*Lain-lain* (Please specify/*Sebutkan:*)

4. FINANCING/PEMBLAYAAN

4-1 What are sales conditions with your customers?/*Bagaimana kondisi penjualan Anda?*

Order/ <i>Pesanan</i>	<input type="checkbox"/> a. Regular order/ <i>Pesanan reguler</i>	<input type="checkbox"/> b. Ad hoc order/ <i>Pesanan musiman</i>
Average Monthly Sales/ <i>Penjualan Bulanan Rata-rata</i>	Million/ <i>Juta Rp.</i> & US\$	
Payment/ <i>Pembayaran</i>	<input type="checkbox"/> a. By cash/ <i>Tunai</i>	<input type="checkbox"/> b. By credit/ <i>Credit</i> (months/ <i>bulan</i>)

4-2 What are purchase conditions with your suppliers?/*Bagaimana kondisi pembelian dari pemasok Anda?*

Order/ <i>Pesanan</i>	<input type="checkbox"/> a. Regular order/ <i>Pesanan reguler</i>	<input type="checkbox"/> b. Ad hoc order/ <i>Pesanan musiman</i>
Average Monthly Purchase/ <i>Pembelian Bulanan Rata-rata</i>	Million/ <i>Juta Rp.</i> & US\$	
Payment/ <i>Pembayaran</i>	<input type="checkbox"/> a. By cash/ <i>Tunai</i>	<input type="checkbox"/> b. By credit/ <i>Credit</i> (months/ <i>bulan</i>)

- 4-3 Does your company have difficulty in raising necessary funds?/Apakah perusahaan Anda mengalami kesulitan memperoleh dana yang diperlukan?
- 4-3-1 Funds for working capital/Dana untuk modal kerja
 a. No problem *Tidak ada masalah* b. Little problem *Sedikit masalah* c. Much problem *Banyak masalah*
- 4-3-2 Funds for investment/Dana untuk investasi
 a. No problem *Tidak ada masalah* b. Little problem *Sedikit masalah* c. Much problem *Banyak masalah*
- 4-4 Does your company have difficulty in repaying interest and principal?/Apakah perusahaan Anda mengalami kesulitan dalam pembayaran bunga pinjaman dan pinjaman pokok?
 a. No problem *Tidak ada masalah* b. Little problem *Sedikit masalah* c. Much problem *Banyak masalah*
- 4-5 What kind of difficulty does your company have in financing?/Kesulitan apa yang dihadapi perusahaan Anda dalam pembiayaan?
- a. Severe loan eligibility/Persyaratan pinjaman yang berat
 - b. Insufficient mortgage/collateral/Tidak cukup agunan/jaminan
 - c. Financial institutions require guarantee of a guarantee company/Lembaga keuangan mensyaratkan adanya jaminan dari perusahaan penjamin
 - d. Financial institutions take a long time for loan screening/Lembaga keuangan membutuhkan waktu yang lama untuk menyaring peminjam
 - e. Troublesome formalities of borrowing procedures/Kesulitan dalam formalitas prosedur peminjaman
 - f. Loan amount is limited/Jumlah pinjaman dibatasi
 - g. High interest rates/Tingkat suku bunga yang tinggi
 - h. Financial institutions passive attitude to finance small- and medium-sized enterprises/Sikap pasif lembaga keuangan untuk membiayai perusahaan skala kecil dan menengah
 - i. Exposure to exchange risk/Resiko nilai tukar mata uang
 - j. Undeveloped stock exchange market in Indonesia/Pasar bursa yang tidak berkembang di Indonesia
 - k. Lack of access to the international financial market/Kurangnya akses ke pasar keuangan internasional
 - l. Lack of financing know-how in the company/Kurangnya pengetahuan perusahaan tentang pembiayaan
 - m. Others/Lain-lain (Please specify/Sebutkan: _____)
- 4-6 Do you have a plan to raise funds at present?/Apakah Anda mempunyai rencana untuk memperoleh dana saat ini?
 a. Yes/Ya b. No/Tidak

If yes, answer the following:/Bila ya, jawab pertanyaan berikut:

- 4-6-1 How much is the amount and what are the uses of the funds?/Berapa jumlah dana yang diinginkan dan untuk apa penggunaannya?

- (1) Working capital/Modal kerja

Amount of funds to be raised:/Jumlah yang diinginkan: _____ in rupiah/dalam rupiah or/atau in US\$/dalam US\$

Major uses of funds?/Penggunaan utama dana tersebut?

- a. Procurement of raw materials/Pembelian bahan baku
- b. Payment for workers/Pembayaran gaji/upah pekerja
- c. Making-up for loss/Menutup kerugian
- d. Funds to repay other loans/Untuk pembayaran kembali pinjaman lainnya
- e. Others/Lain-lain (Please specify/Sebutkan: _____)

(2) Capital investment/Modal investasi

Amount of funds to be raised:/Jumlah yang diinginkan: in rupiah/dalam rupiah or/atau
in US\$/dalam US\$

Major uses of funds?/Penggunaan utama dana tersebut?

- a. Expansion of existing production facility/Perluasan fasilitas produksi yang telah ada
- b. Modernization of machinery and equipment/Moderenisasi mesin dan peralatan
- c. Construction of a new plant/Pembangunan pabrik baru
- d. Expenditure for R&D/Pembiayaan R&D
- e. Others/Lain-lain (Please specify/Sebutkan:)

(3) Pre-export financing/Pembiayaan ekspor

Amount of funds to be raised:/Jumlah yang diinginkan: in rupiah/dalam rupiah or/atau
in US\$/dalam US\$

Major uses of funds?/Penggunaan utama dana tersebut?

- a. Expansion of existing production facility/Perluasan fasilitas produksi yang telah ada
- b. Modernization of machinery and equipment/Moderenisasi mesin dan peralatan
- c. Procurement of raw materials/Pembelian bahan baku
- d. Export promotion expenditures/Biaya promosi ekspor
- e. Others/Lain-lain (Please specify/Sebutkan:)

4-6-2 From what sources would your company expect to raise funds in the near future?/Dari sumber mana Anda harapkan perusahaan Anda akan memperoleh dana dalam waktu dekat

a. Borrowing/Pinjaman

From Domestic Source/Dari sumber dalam negeri

- National commercial banks in Indonesia/Bank komersial nasional di Indonesia
- Private commercial banks in Indonesia/Bank komersial swasta di Indonesia
- Other financial institutions/Lembaga keuangan lainnya (Please specify/Sebutkan:)
- Parent company and related companies/Perusahaan induk dan perusahaan-perusahaan terkait
- Non-financing private companies except related companies/Perusahaan non-pembiayaan swasta kecuali perusahaan terkait
- Others/Lain-lain (Please specify/Sebutkan:)

From Overseas Source/Dari sumber luar negeri

- Financial Institutions/Lembaga keuangan
- Parent company and related companies/Perusahaan induk dan perusahaan-perusahaan terkait
- Others/Lain-lain (Please specify/Sebutkan:)

b. Issuance of stocks/Penerbitan saham

c. Issuance of bonds/Penerbitan surat berharga

5. EXPECTATION FOR ASSISTANCE FROM GOVERNMENT/HARAPAN BANTUAN DARI PEMERINTAH

5-1 Please evaluate the following financial support measures from public organizations.
Silahkan berikan penilaian atas upaya-upaya dukungan finansial berikut ini dari organisasi publik.

Measures/Upaya	Evaluation/Penilaian		
Special Financial Schemes for Small and Medium Enterprises/Skema finansial khusus untuk perusahaan kecil dan menengah	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Investment Incentives/Insentif investasi	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Financial support/Dukungan finansial	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Tax reductions/Pengurangan pajak	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
R&D Incentives/Insentif R&D	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Financial support/Dukungan finansial	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Tax reductions/Pengurangan pajak	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Others/Lain-lain ()	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting

5-2 Please evaluate the following export promotion support measures.
Silahkan beri penilaian atas upaya-upaya untuk mendukung promosi ekspor berikut ini.

Measures/Upaya	Evaluation/Penilaian		
Trade missions overseas/Misi perdagangan ke luar negeri	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Trade fairs overseas/Pameran dagang di luar negeri	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Provision of information on overseas markets/Penyediaan informasi tentang pasar luar negeri	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Exporters registration system/Sistem registrasi eksportir	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Consulting services on the trading businesses/Pelayanan konsultasi tentang kegiatan perdagangan	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Training courses for trading businesses/Pelatihan untuk kegiatan perdagangan	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Export Incentives/Insentif ekspor	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Financial support/Dukungan finansial	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
- Tax reductions/Pengurangan pajak	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
Others/Lain-lain ()	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting

5-3 Please evaluate the effectiveness and necessity of the following programs for the development of the small and medium industries in Indonesia. /Silahkan beri penilaian atas keefektifan dan kebutuhan program-program berikut ini untuk pengembangan industri kecil dan menengah.

Program/Program	Evaluation/Penilaian		
1. Strengthening of public institutes technical support capabilities for the metal processing industry/Penguatan kemampuan lembaga publik dalam memberikan dukungan teknis kepada industri pengolahan logam	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
2. Support for joint R&D activities by medium scale industries/Dukungan untuk kegiatan R&D bersama oleh industri-industri berskala menengah	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
3. Expansion of technical support and guidance institutions in local regions/Perluasan lembaga pendukung dan pemberi bimbingan teknis di daerah	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
4. Technical guidance visits to supporting industries by experts/Kunjungan bimbingan teknis kepada industri penunjang oleh tenaga ahli	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
5. Joint support for sub-contractor development by government and parent companies/Dukungan bersama oleh pemerintah dan perusahaan-perusahaan induk untuk pengembangan subkontraktor	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
6. Reinforcement of industry association activities/Penguatan kegiatan asosiasi industri	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
7. Special loan scheme for the development of supporting industries and small and medium industries/Skema pinjaman khusus untuk pengembangan industri penunjang dan industri kecil dan menengah	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
8. Establishment of an advanced skill training center/Pendirian pusat pelatihan ketrampilan tingkat lanjut	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
9. Expansion of management skill training/Perluasan pelatihan manajemen	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
10. Development of industrial estate for small and medium scale industries/Pengembangan kawasan industri untuk industri kecil dan menengah	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting
11. Improvement of custom clearance procedures to smooth the flow of goods/Penyempurnaan prosedur bea cukai untuk kelancaran aliran barang	<input type="checkbox"/> a. Very important Sangat penting	<input type="checkbox"/> b. Important Penting	<input type="checkbox"/> c. Not important Tidak penting

12 Provision of matching services to promote subcontracting businesses (business tie-up)/Pemberian pelayanan yang sesuai untuk mempromosikan kegiatan subkontrak	<input type="checkbox"/> a. Very important Sangat penting <input type="checkbox"/> b. Important Penting <input type="checkbox"/> c. Not important Tidak penting
13 Expansion of parts exports promotion activities/Perluasan kegiatan promosi ekspor part	<input type="checkbox"/> a. Very important Sangat penting <input type="checkbox"/> b. Important Penting <input type="checkbox"/> c. Not important Tidak penting
14 Expansion of capital and technical tie-up promotion activities/Perluasan kegiatan promosi ikatan modal dan teknis	<input type="checkbox"/> a. Very important Sangat penting <input type="checkbox"/> b. Important Penting <input type="checkbox"/> c. Not important Tidak penting

5-4 Please give your free opinion for expected governmental support measures.
Silahkan berikan pendapat Anda tentang dukungan pemerintah yang dapat diharapkan

APPENDIX 3.

SUMMARY OF THE RESULTS OF QUESTIONNAIRE SURVEY

APPENDIX 3 . Summary of the Results of Questionnaire Survey

(1) Outline of Surveyed Companies

1-1 Location (Unit: No. of companies)

	<i>Total Effective</i>	<i>Jabotabek Area</i>	<i>West Java</i>	<i>Central Java</i>	<i>East Java</i>	<i>North Sumatra</i>	<i>Batam</i>	<i>Others</i>
Electronics parts	80	47	5	9	13	-	6	-
Automotive parts	105	51	25	20	4	5	-	-
Machinery parts	129	42	20	48	9	6	1	3
Others	11	2	-	9	-	-	-	-
TOTAL	325	142	50	86	26	11	7	3

1-2 Year of Establishment (Unit : No. of companies)

	<i>Total Effective</i>	<i>Before 1969</i>	<i>1970's</i>	<i>1980's</i>	<i>1990's</i>
Electronics parts	87	9	14	16	48
Automotive parts	106	13	17	44	32
Machinery parts	129	13	26	54	36
Others	11	1	2	5	3
TOTAL	333	36	59	119	119

1-3 Paid-up Capital and Shareholders (Unit : No. of companies)

	Paid-up Capital					Local/Foreign		
	<i>Total Effective</i>	<i>Below Rp. 100 million</i>	<i>Rp. 100 ~ 599 billion</i>	<i>Rp. 600 ~ 4,999 million</i>	<i>Over Rp. 5,000 million</i>	<i>Total Effective</i>	<i>Local company</i>	<i>Foreign affiliated company</i>
Electronics parts	56	5	21	14	16	88	56	32
Automotive parts	93	13	41	23	16	106	90	16
Machinery parts	119	21	53	32	13	129	109	20
Others	10	1	5	4	-	11	11	-
TOTAL	278	40	120	73	45	334	266	68

1-4 Sales Amount - 1997

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Below Rp. 100 million</i>	<i>Rp. 100 ~ 999 million</i>	<i>Rp. 1,000 ~ 4,999 million</i>	<i>Rp. 5,000 ~ 9,999 million</i>	<i>Over Rp. 10,000 million</i>
Electronics parts	55	1	21	10	-	23
Automotive parts	96	15	50	9	2	20
Machinery parts	118	14	66	14	8	16
Others	10	-	7	2	-	1
TOTAL	279	30	144	35	10	60

1-5 Number of Employees

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Less than 19</i>	<i>20 ~ 99</i>	<i>100 ~ 299</i>	<i>300 or more</i>
Electronics parts	79	13	20	14	32
Automotive parts	101	42	37	9	13
Machinery parts	126	56	50	13	7
Others	11	5	5	-	1
TOTAL	317	116	112	36	53

1-6 Customer Industries

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Electric and electronics parts industry</i>	<i>Automotive parts industry</i>	<i>Machinery parts industry</i>	<i>Other industries</i>
Electronics parts	88	88	13	13	9
Automotive parts	106	15	106	33	18
Machinery parts	127	22	20	124	30
Others	11	-	-	-	11
TOTAL	332	125	139	170	68

(2) Impact of Economic Crisis

2-1 Evaluation of the Impact of Crisis (Unit: No. of companies)

	<i>Total Effective</i>	<i>Very serious impact</i>	<i>Serious impact</i>	<i>Slightly serious impact</i>	<i>No change</i>	<i>Good impact</i>
Electronics parts	88	34	26	24	3	1
Automotive parts	104	51	34	8	3	8
Machinery parts	128	50	48	16	10	4
Others	11	3	5	2	-	1
TOTAL	331	138	113	50	16	14

2-2 Impact on Domestic Sales (Unit: No. of companies)

	<i>Total Effective</i>	<i>Decrease</i>	<i>No Change</i>	<i>Increase</i>	<i>Average decrease ratio %</i>	<i>Average increase ratio %</i>
Electronics parts	80	67	11	2	64.3	-
Automotive parts	105	92	5	8	63.6	32.1
Machinery parts	128	107	12	9	56.0	53.3
Others	11	10	-	1	49.0	20.0
TOTAL	324	276	28	20	60.1	42.6

2-3 Impact on the Operation Ratio of Factories (Unit: No. of companies)

	<i>Total Effective</i>	<i>Operation ratio after crisis</i>						<i>Average operation ratio after crisis</i>	<i>Average operation ratio before crisis</i>
		<i>Less than 10%</i>	<i>10 ~ 24%</i>	<i>25 ~ 49%</i>	<i>50 ~ 74%</i>	<i>75 ~ 99%</i>	<i>100% or more</i>		
Electronics parts	54	-	9	15	17	9	4	51.4	85.9
Automotive parts	90	8	24	26	20	3	9	40.3	88.3
Machinery parts	119	2	15	48	33	11	10	48.3	90.7
Others	11	-	-	3	8	-	-	49.5	86.4
TOTAL	274	10	48	92	78	23	23	46.3	88.7

2-4 Impact on Exports (Unit: No. of companies)

	<i>Total Effective</i>	<i>Decrease</i>	<i>No Change</i>	<i>Increase</i>	<i>Average decrease ratio %</i>	<i>Average increase ratio %</i>
Electronics parts	52	28	13	11	41.3	145.0
Automotive parts	22	9	7	6	45.3	109.0
Machinery parts	25	8	6	11	62.9	60.0
Others	2	1	-	1	10.0	50.0
TOTAL	101	46	26	29	45.4	98.1

2-5 Impact on Net Profit (Unit: No. of companies)

	<i>Total Effective</i>	<i>Decrease</i>	<i>No Change</i>	<i>Increase</i>	<i>Average decrease ratio %</i>	<i>Average increase ratio %</i>
Electronics parts	77	62	9	6	62.5	24.5
Automotive parts	103	89	6	8	79.2	23.5
Machinery parts	122	96	18	8	53.5	51.4
Others	10	8	-	2	59.4	22.5
TOTAL	312	255	33	24	64.8	33.4

2-6 Measures taken to Overcome the Crisis (Unit: No. of companies)

	<i>Total Effective</i>	<i>More into new domestic markets</i>	<i>More into export market</i>	<i>Diversification of products</i>	<i>Temporary stop of operation</i>	<i>Reduction of the number of employees</i>	<i>Request for support from parent company</i>	<i>Request for support from financial institutions</i>	<i>Others</i>
Electronics parts	86	29	46	27	10	43	16	10	9
Automotive parts	105	48	44	33	10	75	24	27	18
Machinery parts	120	71	29	40	9	76	24	17	12
Others	11	2	4	5	-	6	3	-	1
TOTAL	322	150	123	105	29	200	67	54	40

2-7 Reduction of the Number of Employees (Unit: No. of companies)

	Total Effective	Average number of employees before crisis	Average number of employees after crisis
Electronics parts	24	499	314
Automotive parts	60	236	132
Machinery parts	71	92	53
Others	6	188	129
TOTAL	161	210	125

(3) Export

3-1 Current Export Activities and Future Intention (Unit: No. of companies)

	Current export			Future intention		
	Total Effective	Exporting	Not exporting	Total Effective	Intention to start export	No intention to start export
Electronics parts	88	50	38	30	14	16
Automotive parts	106	25	81	71	26	45
Machinery parts	129	26	103	101	34	67
Others	11	2	9	8	1	8
TOTAL	334	103	231	210	75	135

3-2 Major Problems or Difficulties to Promote Exports (Unit: No. of companies)

	Total Effective	Government Policies	Financing	Foreign exchange	Taxation	Infrastructure	Company's export promotion capability	Company's export handling capability	Others
Electronics parts	51	10	20	14	12	12	19	6	11
Automotive parts	49	8	15	9	3	9	27	13	15
Machinery parts	50	9	17	9	10	13	24	12	7
Others	2	-	1	1	-	-	-	1	-
TOTAL	152	27	53	33	25	34	70	32	33

(4) Financing

4-1 Difficulty in Raising Funds

(Unit: No. of companies)

	Procurement of working capital				Procurement of investment fund			
	<i>Total Effective</i>	<i>No problem</i>	<i>Little problem</i>	<i>Considerable problem</i>	<i>Total Effective</i>	<i>No problem</i>	<i>Little problem</i>	<i>Considerable problem</i>
Electronics parts	85	34	29	22	85	34	26	25
Automotive parts	103	19	35	49	102	28	34	40
Machinery parts	124	28	40	56	121	38	28	55
Others	11	5	5	1	10	6	4	-
TOTAL	323	86	109	128	318	106	92	120

4-2 Difficulty in Repayment Interest and Principal

(Unit: No. of companies)

	<i>Total Effective</i>	<i>No problem</i>	<i>Little problem</i>	<i>Considerable problem</i>
Electronics parts	83	37	30	16
Automotive parts	100	50	22	28
Machinery parts	116	56	28	32
Others	9	6	3	-
TOTAL	308	149	83	76

4-3 Problem Areas in Financing

(Unit: No. of companies)

	<i>Total effective</i>	<i>Severe loan eligibility</i>	<i>Insufficient mortgage</i>	<i>Credit guarantee conditions</i>	<i>Long screening time</i>	<i>Troublesome formality for borrowing</i>	<i>Limited loan amount</i>	<i>High interest rates</i>	<i>Financial institution's passive attitude</i>	<i>Exposure to exchange risk</i>	<i>Undeveloped stock market</i>	<i>Lack of access to international financing</i>	<i>Lack of financing know-how</i>	<i>Others</i>
Electronics parts	68	23	15	9	12	8	25	58	17	26	1	8	3	5
Automotive parts	95	34	17	16	29	17	29	80	25	18	1	7	10	12
Machinery parts	107	27	18	8	15	17	28	91	33	20	1	4	1	11
Others	9	1	-	-	-	1	2	9	1	1	-	-	-	-
TOTAL	279	85	50	33	56	43	84	238	76	65	3	19	14	28

4-4 Plan to Raise Funds (No. of companies)

	<i>Total Effective</i>	<i>No plan of financing</i>	<i>Having plan of financing</i>
Electronics parts	81	41	40
Automotive parts	103	71	32
Machinery parts	127	86	41
Others	11	4	7
TOTAL	322	202	120

4-5 The Amount of Necessary Working Capital and its Uses (Unit: No. of companies)

	Needed amount (Rp. million)					Use of funds					
	<i>Total Effective</i>	<i>Less than 500</i>	<i>Less than 1,000</i>	<i>1,000 or more</i>	<i>Average amount</i>	<i>Total Effective</i>	<i>Procurement of raw materials</i>	<i>Payment for workers</i>	<i>Making-up for loss</i>	<i>Repayment of other loans</i>	<i>Others</i>
Electronics parts	28	11	5	12	8,715	37	33	8	4	9	5
Automotive parts	62	49	3	10	1,213	65	61	37	16	18	7
Machinery parts	79	53	8	18	5,825	83	79	34	16	19	5
Others	4	2	1	1	1,475	4	4	2	-	-	-
TOTAL	173	115	17	41	4,539	189	177	81	36	46	17

4-6 The Amount of Necessary Investment Funds and its Uses

(Unit: No. of companies)

	Needed amount (Rp. Million)					Use of funds					
	<i>Total Effective</i>	<i>Less than 500</i>	<i>Less than 1,000</i>	<i>1,000 or more</i>	<i>Average amount</i>	<i>Total Effective</i>	<i>Expansion of production facilities</i>	<i>Modernization of machinery and equipment</i>	<i>Construction of new plant</i>	<i>Expenditure for R&D</i>	<i>Others</i>
Electronics parts	10	3	5	2	2,212	25	12	15	3	6	-
Automotive parts	48	29	6	13	1,849	52	32	43	1	20	6
Machinery parts	62	38	9	15	1,497	64	46	42	13	7	3
Others	2	2	-	-	225	2	2	1	-	-	-
TOTAL	122	72	20	30	1,673	143	92	101	17	33	9

4-7 The Amount of Necessary Pre-export Funds and its Uses (Unit: No. of companies)

	Necessary amount (Rp. Million)					Use of funds					
	<i>Total Effective</i>	<i>Less than 500</i>	<i>Less than 1,000</i>	<i>1,000 or more</i>	<i>Average amount</i>	<i>Total Effective</i>	<i>Expansion of production facilities</i>	<i>Modernization of machinery and equipment</i>	<i>Procurement of raw materials</i>	<i>Expenditure for export promotion</i>	<i>Others</i>
Electronics parts	3	-	1	2	2,933	11	5	4	7	5	-
Automotive parts	15	8	2	5	3,923	20	8	10	12	12	1
Machinery parts	13	5	3	5	54,750	15	7	8	8	6	-
Others	2	1	-	1	5,165	2	1	-	1	-	-
TOTAL	33	14	6	13	23,931	48	21	22	28	23	1

4-8 Sources to Raise Funds (Unit: No. of companies)

	<i>Total Effective</i>	Domestic						Overseas		
		<i>National commercial banks</i>	<i>Private commercial banks</i>	<i>Other financial institutions</i>	<i>Parent or other related companies</i>	<i>Non-financing private companies</i>	<i>Others</i>	<i>Financial institutions</i>	<i>Parent or other related companies</i>	<i>Others</i>
Electronics parts	35	14	6	3	5	1	6	4	5	5
Automotive parts	66	29	12	14	7	4	32	11	4	4
Machinery parts	74	31	12	26	16	7	16	12	1	1
Others	4	3	1	-	-	-	1	-	-	-
TOTAL	179	77	31	43	28	12	55	27	10	10

(5) Expectation for Assistance from Government

5-1 Public Financial Support Measures

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Very important</i>	<i>Important</i>	<i>Not important</i>
1. Special financial schemes for SMEs	319	215	93	11
2. investment incentives				
2.1 Financial support	317	193	113	11
2.2 Tax reductions	318	191	107	20
3. R&D incentives				
3.1 Financial support	309	152	139	18
3.2 Tax reductions	307	150	129	28
4. Others	11	8	2	1

5-2 Export Promotion Support Measures

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Very important</i>	<i>Important</i>	<i>Not important</i>
1. Trade missions overseas	317	108	117	92
2. Trade fairs overseas	316	92	156	68
3. Provision of information on overseas markets	318	154	138	26
4. Exporter registration system	305	51	145	109
5. Consulting services on trading businesses	313	92	180	41
6. Training courses for trading businesses	310	91	176	43
7. Export incentives				
7.1 Financial support	308	126	149	33
7.2 Tax reductions	307	132	152	23
8. Others	5	4	1	-

5-3 Effectiveness and Necessity of Various Programs

(Unit: No. of companies)

	<i>Total Effective</i>	<i>Very important</i>	<i>Important</i>	<i>Not important</i>
1. Strengthening of public institutes' technical support capabilities for the metal processing industry	318	164	145	9
2. Support for joint R&D activities by medium scale industries	318	149	157	12
3. Expansion of technical support and guidance institutions in local regions	319	143	159	17
4. Technical guidance visits to supporting industries by experts	319	140	170	9
5. Joint support for sub-contractor development by government and parent companies	320	146	158	16
6. Reinforcement of industry association activities	318	71	207	40
7. Special loan scheme for the development of supporting industries and other SMIs	318	170	143	5
8. Establishment of advanced skill training centers	322	118	182	22
9. Expansion of management skill training	320	136	165	19
10. Development of industrial estate for small and medium scale industries	316	83	175	58
11. Improvement of custom clearance procedures to smooth the flow of goods	311	136	146	29
12. Provision of matching services to promote subcontracting businesses	314	109	185	20
13. Expansion of parts export promotion activities	311	117	165	29
14. Expansion of capital and technical tie-up promotion activities	301	83	199	19

APPENDIX 4.

LIST OF INDUSTRIAL ASSOCIATIONS IN MAJOR ASIAN

APPENDIX 4. LIST OF INDUSTRIAL ASSOCIATIONS IN MAJOR ASIAN COUNTRIES

Name	Industry	Address	Tel/Fax
Japan			
The Japan Machinery Federation	All Machinery	3-5-8, Shibakoen, Minato-ku, Tokyo, Japan	Tel: 03-3434-5381 Fax: 03-3434-6698
The Japan Society of Industrial Machinery Manufacturers (JSIM)	Industrial Machinery	3-5-8, Shibakoen, Minato-ku, Tokyo, Japan	Tel: 03-3434-6821 Fax: 03-3434-4767
Japan Farm Machinery Manufacturer's Association	Agricultural Machinery	3-5-8, Shibakoen, Minato-ku, Tokyo, Japan	Tel: 03-3433-0415 Fax: 03-3433-1528
Japan Auto Parts Industries Association	Automotive Parts	1-16-5, Takanawa, Minato-ku, Tokyo	Tel: 03-3445-4211 Fax: 03-3447-5372
Japan Automobile Manufacturers Association, Inc.	Automobile	1-6-1, Otemachi, Chiyoda-ku, Tokyo	Tel: 03-3216-5774 Fax: 03-2287-2072
The Japan Electrical Manufacturers' Association	Electrical Equipment	2-4-15, Nagatacho, Chiyoda-ku, Tokyo	Tel: 03-3581-4841 Fax: 03-3593-3198
Electronic Industries Association of Japan (EIAJ)	Electronic Equipment	Tokyo Shoko Kaigisyo Build., 3-2-2, Marunouchi, Chiyoda-ku, Tokyo	Tel: 03-3211-2765 Fax: 03-3287-1712
Thailand			
The Thai Auto-Parts Manufacturers Association	Automotive Parts	10/16 Phatanathon Village, Charansanitwong 13 Road, Bangkok 10160	Tel: 02-410-8013 Fax:02-410-8013
The Automotive Industry Association	Automobile	394/14 Samsen Road, Dusit, Bangkok 10330	Tel: 02-280-0951 Fax:02-280-0959
Thai Electrical, Electronics and Allied Industries Club of the Federation of Thai Industries	Electrical and Electronics Equipment	Queen Sirikit National Convention Center Zone C, 4th Floor, 60 New Rachadapisek Road Kylongtoey, Bangkok 10110	Tel: 02-229-4255 Fax:02-229-4941
Malaysia			
Malaysian Automotive Component Parts Manufacturers' Association (MACPMA)	Automotive Parts	c/o FMM 17th Floor, Wisma Sime Darby, Jalan Raja Laut 50350 Kuala Lumpur	Tel: 03-293-1244 Fax:03-294-7290
Malaysian Motor Vehicle Assemblers Association (MMVAA)	Automobile	c/o Associated Motor Industries (M) Sdn. Bhd. Jalan Sesiku 15/12, 40000 Shah Alam, Selangor	Tel: 03-550-7139 Fax:03-559-4863
Malaysian Motor Traders Association (MMTA)	Automobile	17-4, 3rd Floor, Jalan 14/22, 46100 P.J., Selangor	Tel: 03-755-0454 Fax:03-755-0954
Motorcycle and Scooter Assemblers and Distributor Association of Malaysia (MASAAM)	Motorcycle	c/o Lion Suzuki Marketing Sdn. Bhd. 2nd Floor, Wisma Lion Suzuki, 72 Pesiaran Jubli Rerak, 40000 Shah Alam, Selangor	Tel: 03-511-8818 Fax:03-511-8641