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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL SERVICES IN JAPAN

Technological Division
Industrial Institutions Section

66-03427

TABLE OF CONTENTS

FOREWORD

The present report is one in a series of thirty-four country studies in Asia, Africa and Latin America, which attempt to identify those public and semi-public institutions important to the organization and administration of industrial development. This is not a study of the substantive aspects of the Japanese economy but rather a review of the institutional framework for industrial development.

The study was undertaken by the Centre for Industrial Development after the endorsement of this programme by the Committee for Industrial Development during its Fifth Session in May 1965.

To ensure some measure of uniformity in the country reports, the Centre for Industrial Development suggested a general outline for the use of the consultants responsible for the country reports. In accordance with these guidelines, the Japan report follows a functional breakdown of the institutions involved in industrial development, namely: (a) objectives; (b) planning; (c) research and standardization; (d) promotion and development; (e) public industrial enterprises; (f) finance; (g) manpower and training; (h) extension services; and (i) legal and regulatory provisions.

This report has been prepared with the assistance of Dr. Lawrence W. Bass who conducted the study in Japan in October 1965 as a consultant to the Centre for Industrial Development.

ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL SERVICES IN JAPAN

Background

1. "At the end of World War II, the Japanese economy was on the brink of total devastation and exhaustion", according to an analysis made by the Japan Development Bank (33)... "At this time, the world and even the Japanese themselves viewed with a doubtful eye the possibility of an early economic recovery...Since then, however, the economy has achieved remarkable habilitation and growth; and today, after a lapse of less than twenty years, its real gross national product has attained the level 4.8 times that of 1946." (33)

2. The first phase of recovery, lasting from 1946 to 1950, "was a period characterized by re-adjustment of the post-war confusion, and laying a foundation upon which the country's economy would develop again." (33) Overseas markets had vanished, the Zaibatsu trust was dissolved, large enterprises were split up, and land reform altered the pattern of agricultural production. A violent inflationary spiral and a serious food shortage occurred. Mining and manufacturing amounted to only 30 percent of the pre-war level.

3. During 1947-48, production regained momentum as government policy shifted from food production to encouraging iron and steel and coal mining to provide a springboard for industry. Financial stabilization was achieved in 1949 and the enterprises of the country paid more attention to productivity, efficiency, and cost reduction. The outbreak of the Korean War gave impetus to the economy and industrial production rose to the pre-war level, with the prospect that the nation would become self-supporting. In April 1951, the Japan Development Bank was established to supply long-term loans to promote economic reconstruction and industrial development.

4. The second phase, 1950-55, witnessed the development of the economy at a full pace, in spite of minor recessions in 1951 and 1954. The gross national product increased at a rate of nine percent per annum. Manufacturing and mining production was doubled, foreign trade expanded two-fold, installed capacity of industry was twice the level of 1935, and the international balance of payments turned favourably.

5. The highest rate of economic growth came after 1955, with gross national product expanding at 10 percent per year, as compared with the normal pre-war rate of 4 percent. The national income rose from ¥6,500 billion in 1955 to ¥17,600 billion in 1963. For these same years, per capita income increased from US $209 to $509. Wage rates rose 83 percent and per capita real consumer spending by 78 percent. Labour productivity in the machinery industry rose to 275 percent of that in 1955; in chemicals, iron and steel, textiles, and general manufacturing, between 160 and 225 percent; in the food industries productivity remained about the same.

6. "Since that time (1955), the Japanese economy has further attained a remarkable growth...The following three (factors) were worthy of special note: high level of investment in plant and equipment; forward-looking management and abundant labour force with relatively high educational qualifications; the expansion of exports." (33)

7. The rate of growth of private investment in plant and equipment during 1951-55 was only 4 percent per year, but it jumped to 24 percent during 1955-63. Private fixed investment has recently been exceeding 20 percent of gross national product, of which nearly 50 percent has gone into expansion and improved technology of the iron and steel, machinery, and chemical industries. Capital formation has depended heavily on personal saving which during the period was as high as 16 percent of disposable income. Government financial institutions have also played an important part in supplying funds.

8. Management and labour attitudes and skills have been a key factor in the expansion. The dissolution of the Zaibatsu trust and the Anti-monopoly Law have brought about keen competition. Management has been progressive in modernizing business methods. The labour force rose from 36 million in 1950 to 46 million in 1963. There has been a transfer from sectors with low productivity, such as agriculture, which still requires one-third of the active labour force, and smaller industries. Nine years of education are compulsory, and there is a high proportion of students progressing to senior high school and on to the colleges and universities.

9. The increase in industrial activity has had a marked effect on standards of living, and the consumption level rose by 60 percent between 1955 and 1963, with a considerably greater portion of the consumer budget being spent for durable items and cultural and entertainment activities. The percentage of urban householders owning electric refrigerators rose to 51.9 in 1963 from 2.8 in 1957. Over 90 percent own television sets and over 70 percent have electric washing machines. The percentage of household budgets being spent on food dropped to 38.5 percent in 1963 from 46.9 percent in 1955.

10. The rate of expansion of exports has been 14 percent per year since 1954 as a result of the stronger competitive power of Japanese industry. The need to meet quality and price standards in international trade has exerted considerable influence on the use of technical and management assistance from the array of sources that have been made available in the country through programmes supported by the national and local governments.

11. There have also been noteworthy changes in the structure of industry, in that the share of secondary industry in the economy has grown since 1955 from 30 to 39 percent at the expense of primary industry, which has declined from 23 to 13 percent. Industrial production has been rising at a rate of 15 percent per year, and expansion has been particularly impressive in electrical and transportation machinery, petroleum products and chemicals, iron and steel, and non-ferrous metals.

12. Major problems that remain to be faced are stabilization of consumer prices, improvement in the small business sector and agriculture, modernization of the labour market, and improved housing.

13. During the latter part of 1965 there was a recession in the level of economic activity which caused considerable concern. The rate of growth fell to an estimated 2.7 percent (as compared with the average of 10 percent per year during 1955-63) for the fiscal year ending 31 March 1966. Projections for the coming year anticipate a growth of 6.5 - 7.5 percent. (1, 5, 21, 33, 37, 38)

I. INDUSTRIAL POLICIES, AIMS, AND OBJECTIVES

14. Government policy is based on the principle of private enterprise and a free market (1). Long-term government economic plans, of which there have been more than ten since World War II, have been formulated with the objective of strengthening the private sector so as to bring about full employment and higher living standards.

15. The Five-Year Plan for Economic Self-Support for 1956-1960, the first to be adopted by the Cabinet, saw as a major objective the need for attaining 5 percent annual economic growth to improve employment; modernizing the export industry and encouraging import-competing industry were goals to improve the balance of trade. Active introduction of foreign technology, begun about 1955, resulted in a greater rate of growth than that projected in the Plan.

16. The New Long-Range Economic Plan (1958-1962), outlined in 1957, when per capita income had returned to the pre-war level, was aimed at "attaining the highest possible growth rate, while maintaining the stability of the economy". (1) A growth rate of 6.5 percent annually was thought to be most appropriate for meeting the goals of increasing employment, improving balance of trade, and accomodating the balance between investment and saving.

17. The great success of attaining a growth rate as high as 11 percent annually in 1958-60 with relatively stable prices is ascribed to three factors: (a) a reduction of 20 percent in imports with a steady rate of increase in exports; (b) a ratio of total savings of 38 percent of gross national product versus 32 percent in the Plan; (c) a very rapid modernization of the industrial structure, particularly in the engineering industry.

18. The Doubling National Income Plan (1961-1970) was based on a long-range forecast of the economy for 1960-80 prepared in 1959-60 by the Economic Deliberation Council. The ten-year plan approved by the Cabinet in 1960 had the following major objectives: expansion of social overhead capital; furthering industrial modernization; promotion of foreign trade and economic co-operation; development of human resources, science, and techniques; easing the public-private structure of the economy; and securing social stability.

19. The Medium-Term Economic Plan (1964-1968) prepared by the Economic Deliberation Council (1, 14), was adopted by the Government early in 1965. This step was thought necessary because the projections of the ten-year plan had been greatly exceeded, since annual rate of growth was 11 percent instead of the 7-8 percent in the plan, and since private investment in equipment was so large that the ten-year goal was almost attained in the first year.

20. The chief objectives of the new plan are: to cope with such new situations as labour shortage and an open-door economy; to remedy imbalances such as consumer price increases and income differentials; and to promote social development. These are to be sought through the following policies: (a) foreign trade expansion and modernization of industrial structure; (b) manpower development and promotion of science and technology; (c) modernization of low productivity sectors, chiefly agriculture, small business, and distribution; (d) more effective utilization of the labour force; (e) improvement of standard of living in housing, physical environment, and social security.

21. Boundary conditions to be observed are: attainment of equilibrium in the current account of international peyments which have shown substantial deficits in recent years; stable wholesale prices; stabilization of consumer prices, which have increased 6 percent per year for the past three years; economic growth around 8 percent per annum against the average of 10 percent for the past 10 years. The plan envisages strong emphasis on reserve allocation, which has promoted growth of large firms (but has slowed down modernization of agriculture and small business), and improvement of living conditions such as housing, sewage disposal, low-productivity sectors, and abatement of public nuisances.

22. Announcement of the plan refrained from details of estimates of increase in private sectors to minimize the investment boom and foreign exchange crisis such as occurred in 1961. Econometric models were utilized in developing the plan, and projections were based on an input-output model of 60 economic sectors for 1968.

II. ORGANIZATION FOR PLANNING, IMPLEMENTATION, AND EVALUATION (1)

23. Planning Agencies. The Economic Deliberation Council prepares a long-term economic plans for Japan at the request of the Prime Minister, to whom it serves as an advisory body. It is composed of 30 members appointed by him. Temporary or special members may be appointed and the council may set up commissions.

24. The Economic Planning Agency is the secretariat of the Council and is an external organ of the Prime Minister's Office. Its Director-General has the status of Minister of State. The Agency has the organization structure shown in Chart 1. It has a staff of 582.

25. The Chairman of the Economic Deliberation Council set up a Planning Commission at the time the Medium-Term Economic Plan was prepared. It had the structure shown in Chart 2.

26. Implementation. Plans are usually decided on by the Cabinet. The ministries concerned carry out their functions in accordance with these guidelines. Co-ordination and adjustment of the execution of policies and projects is the responsibility of the Co-ordination Bureau of the Economic Planning Agency.

27. Plans regarding the private sector are projectional and private enterprises are not directly bound by the projections. Hence, equipment investment, wages, prices, and international payments, which depend upon private business, cannot be expected to move according to the plan.

28. Evaluation. The Economic Deliberation Council is constantly following estimates in comparison with performance. If any notable discrepancy develops in three years or so under the Medium-Term Economic Plan, a revision is to be made. Analysis should permit diagnosis of differences as being due to difference in policy variables and plan, errors in estimation of exogenous variables, or errors in the econometric model itself.

29. Possible Effects of the Plan. Although in the private sector the Plan is indicative rather than imperative, the situation does not imply lack of effect of planning on economic growth. Japanese entrepreneurs have made utmost efforts to maintain and expand their respective markets. The conclusion is that this system of planning has made government policies acceptable and have given entrepreneurs greater confidence in the future of the economy.

CHART 1

Organization Chart of Economic Planning Agency

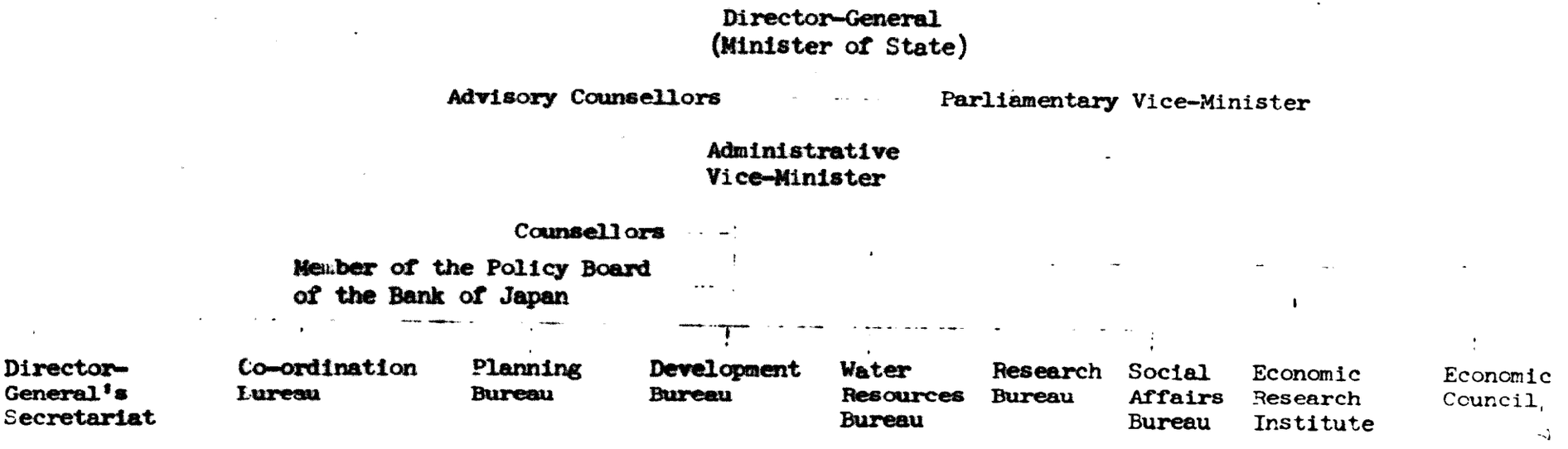
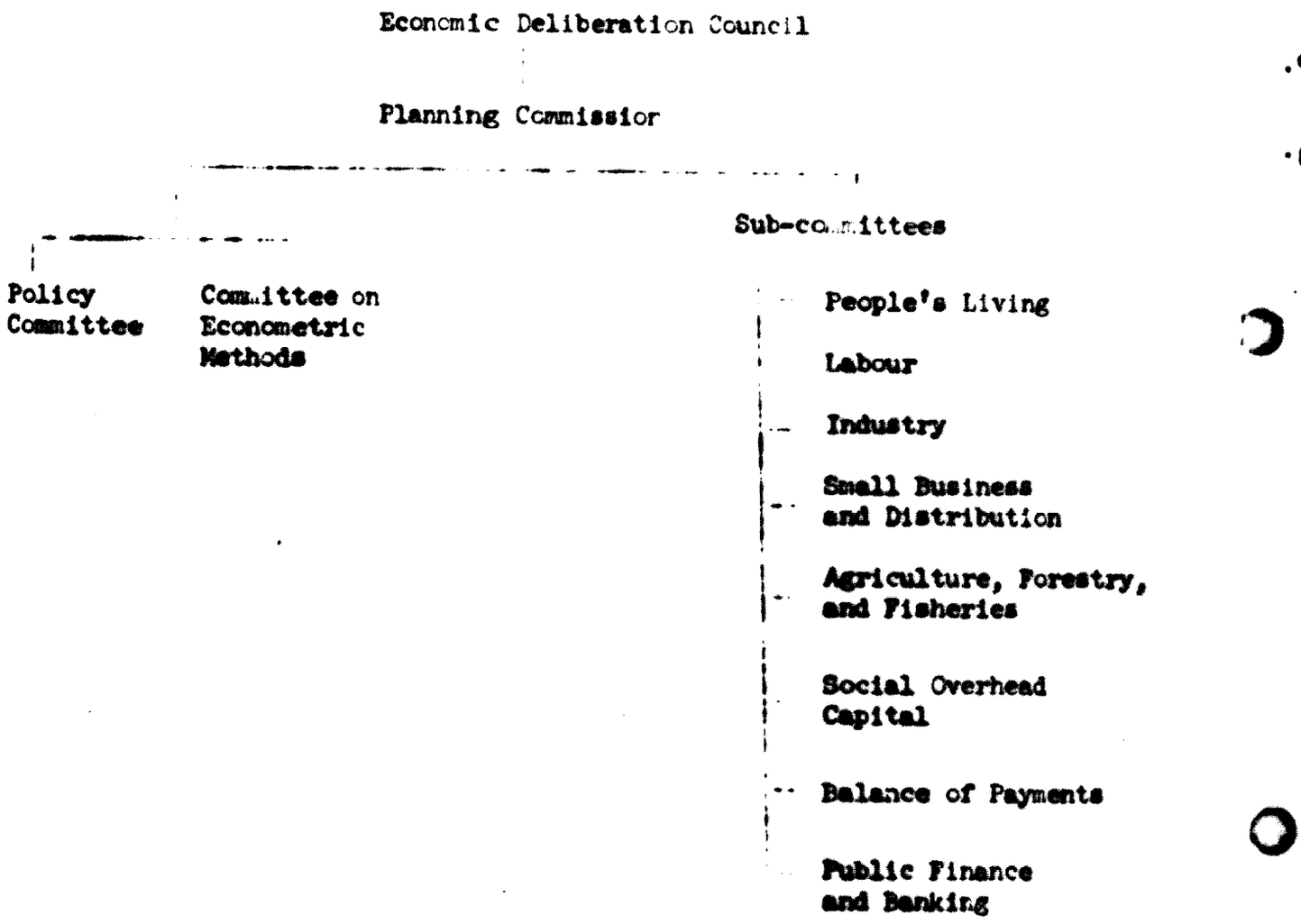


CHART 2

Organization Chart of the Planning Commission, Economic Deliberation Council



30. The Ministry of International Trade and Industry (MITI) (1) is the chief agency for the co-ordination of activities embraced in the national economic plans. As stated earlier, the basic policy is to stimulate private enterprise. There is no law imposing general restrictions on investment. There is, however, a mechanism for appraisal of plans for investment presented by companies, and these are reviewed with respect to the balance of the national economy, the consolidation of industrial structure appropriate to different categories of industry, the nationalization of enterprises, etc., in order that investment plans may be considered on an industry basis. The plans are reported to the Minister of International Trade and Industry for acceptance and administrative guidance after they have been approved.

31. The laws and regulations under which such plans are implemented are described in more detail in Section IX of this report. They cover such matters as imports of capital goods, physical location to prevent over-concentration in congested centres, extent of foreign participation, control of raw materials, control of power supply and transportation, and importation of technical know-how (1).

32. The structure of MITI is shown in Chart 3. In 1965 it had a total staff of 14,104 employees; in the central division there were 2,930 employees, in the auxiliary organizations 5,035, in regional bureaus and offices 4,123, in the patent office 1,414, and in the Smaller Enterprise Agency, which has the function of co-ordination of decentralized activities of the prefectures and larger municipalities, 167 employees.

33. The functions of the International Trade Bureau and the Trade and Development Bureau will be described in the following paragraphs (22). They are particularly important because of the heavy emphasis on foreign trade in the economic plans. In Section IV the activities of the Smaller Enterprise Agency (an "external organ") and in Section III the Agency of Industrial Science and Technology (an "auxiliary organ") will be summarized.

34. The International Trade Bureau of MITI has the organization shown in Chart 4 (22). The responsibilities of the International Economic Affairs Division are for multi-lateral agreements such as GATT, OECD, UN, IMF, EEC, ECSC, commodity arrangements, and tariff matters. The International Trade Counsellor is responsible for bilateral affairs.

CHART 3

Organization of the Ministry of International Trade and Industry

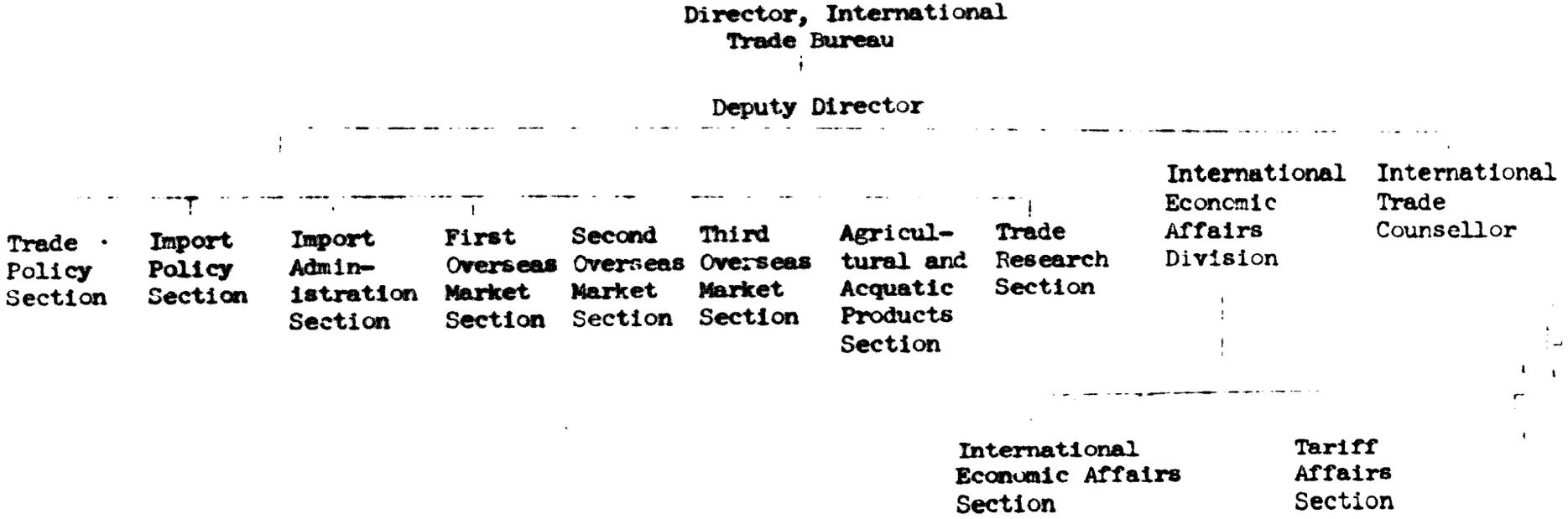
Minister of MITI

Vice-Minister

Internal Division	Regional Bureaus and Offices (8)	External Organs	Auxiliary Organs	Related Government Financial Institutes	Local Government (46 prefectures)
Minister's Secretariat		Patent Office	Agency of Industrial Science and Technology (see Section III)		
International Trade Bureau		Smaller Enterprise Agency (see Section IV)			
Trade and Development Bureau			Industrial Products Inspection Institute		
Enterprise Bureau			Textile Products Inspection Institutes (8)		
Heavy Industry Bureau			Safety Techniques Training Institute		
Light Industry Bureau			Measurement Training Institute		
Textile Bureau			Mine Inspectors Training Institute		
Mine Bureau					
Coal Bureau					
Mine Safety Bureau					
Public Utilities Bureau					

CHART 4

Organisation of International Trade Bureau
Ministry of International Trade and Industry



35. The Trade Policy Section is charged with administration and co-ordination of overall policies. The Import Policy Section is responsible for policy planning, import liberalization, and estimates of imports, while the Import Administration Section deals with licensing and orderly marketing of imported industrial goods and raw materials.

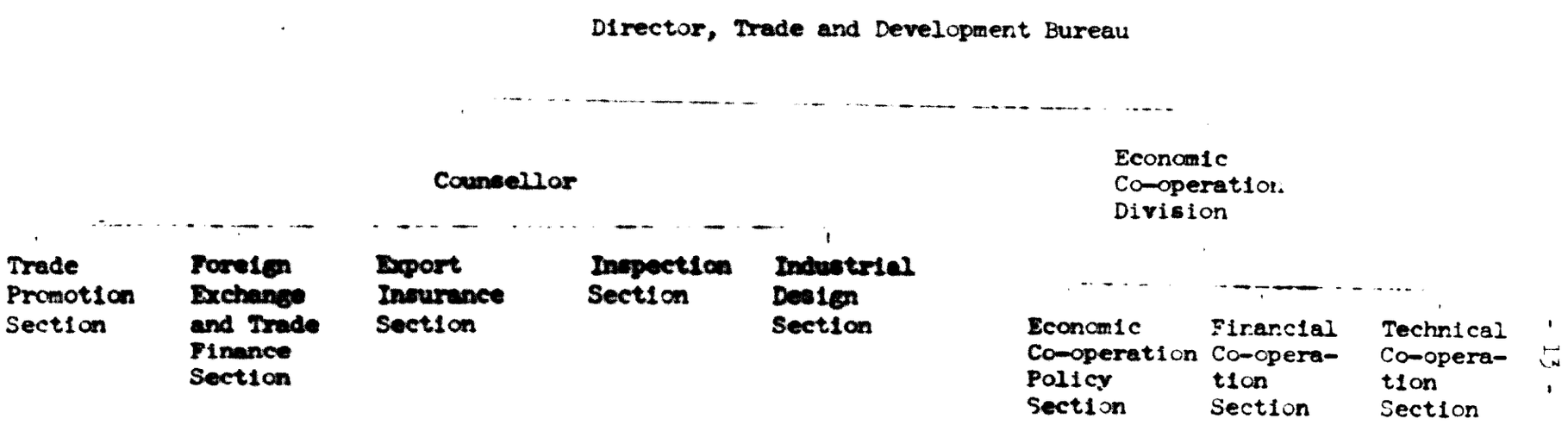
36. The three Overseas Market Sections have responsibility for bilateral affairs concerning, respectively: (a) United States, Canada, and Europe; (b) Latin America, Africa, Southwest Asia and Oceania, including Australia and New Zealand; (c) Southeastern Asia, Far Eastern Countries and the Communist countries. The Agricultural and Aquatic Products Section is charged with export and import licensing and orderly marketing of such commodities.

37. The Trade and Development Bureau of MITI is organized as shown in Chart 5 (22).

38. The Trade Promotion Section has responsibility for such activities as the Japan External Trade Organization (JETRO), fairs, export procedures and licensing, export conferences, special procurement, and export statistics. The Foreign Exchange and Trade Finance Section is involved in policy and planning of these functions, including relations with the Export Import Bank. The duties of the Export Insurance Section are explained by its title. The Inspection Section deals with export inspection, claims, and arbitration. The Industrial Design Section is concerned with improvement of designs of export goods and prevention of infringement of patent rights, designs, etc.

CHART 5

Organization of Trade and Development Bureau
Ministry of International Trade and Industry



III. RESEARCH AND DEVELOPMENT, STATISTICS, TESTING, AND STANDARDIZATION

39. Japan is heavily committed to a programme of research and development, and it has been estimated that in the period 1958-61 the country ranked fifth among nations in percentage of gross national product devoted to such activities (2). Table 1 is adapted from the data on which this conclusion is based.

TABLE 1

Expenditure for Research and Development in Various Countries (1958-60)

Country	R & D Expenditure as Percentage of GNP	R & D Expenditure per Inhabitant (US $)
U.S.A.	2.8	78.4
U.K.	2.5	26.0
U.S.S.R.	2.3(?)	36.4
Sweden	1.8	24.3
Japan	1.6	6.2
Federal Republic of Germany	1.4	15.7
France	1.3	15.2
Canada	1.2	21.9
Poland	0.9(?)	5.3(?)
Norway	0.7	10.0
Yugoslavia	0.7	1.4
Australia	0.6	8.9

40. The figure for Japan of 1.6 percent of GNP expended for research at that period, however, is felt by a number of Japanese to be too high, but unfortunately the methods of compiling such data are far from uniform and therefore exact comparisons are extremely difficult. In fact, a report (24) issued by the Prime Minister's Council for Science and Technology on 4 October 1960, contains the statement; "The total research investment in Japan which now stands at 0.94 percent of national income..." The Ministry of International Trade and Industry gives the following values of the ratio of research funds to gross national product: 1957, 0.98 percent; 1961, 1.39 percent; and 1963, 1.43 percent. (21) In the public or semi-public sector there are 41 state-

operated, 170 public, 101 private, and 38 university research institutes, as well as various academic circles, associations, technical institutes, etc. (1) Research laboratories are supported by many of the larger industrial enterprises.

41. General Policy Regarding Research and Development. The "Report of the Inquiry for the Promotion of Science in the Next Ten Years" (21) referred to in the preceeding paragraph, outlines the important policies proposed in the 10-year plan. These include:

(a) Increasing research investment in Japan to 2 percent of national income, with an increase in the government budget for scientific research paralleling the national total, which was projected at 4,250 million yen for 1920;

(b) Promoting basic science and establishing the objectives of technology;

(c) Improving the organization and administration of research and research equipment;

(d) Strengthening universities and graduate schools to produce scientists of higher quality and to increase the number enrolled to meet the estimated deficits in 1970 of 170,000 scientists and engineers and 440,000 technicians graduating from technical high schools;

(e) Improving the status of scientists, particularly by raising their salaries in universities and government agencies;

(f) Establishing comprehensive information services and improving international exchange in science and technology;

(g) Disseminating scientific and technological knowledge to industry;

(h) Promoting new technology, rather than relying on imported developments;

(i) Improving tax laws to encourage research by industry;

(j) Establishing a fundamental law to provide guiding principles to promote science and technology;

(k) Improving the administrative system for scientific studies from basic research to practical application.

42. The Science and Technology Agency (26), an organization attached to the Office of the Prime Minister, is concerned with the formulation of technical policies. In addition, it serves as official secretariat to the following advisory bodies which are directly attached to the Prime Minister's Office: Council for Science and Technology, Atomic Energy Commission, Radiation Council, Council for Space Exploration, Council for Marine Science.

43. The Agency has the organization shown in Chart 6. In 1965 it had a staff of 1,861 and a budget of 18,470 million yen. The five attached laboratories are listed in a following section summarizing all government laboratories.

44. Its responsibility for the comprehensive administration of science and technology in the national interest excludes the purely humanistic sciences and the research carried out in universities and colleges. Its major tasks are:

(a) Drafting or planning of basic national policies of science and technology;

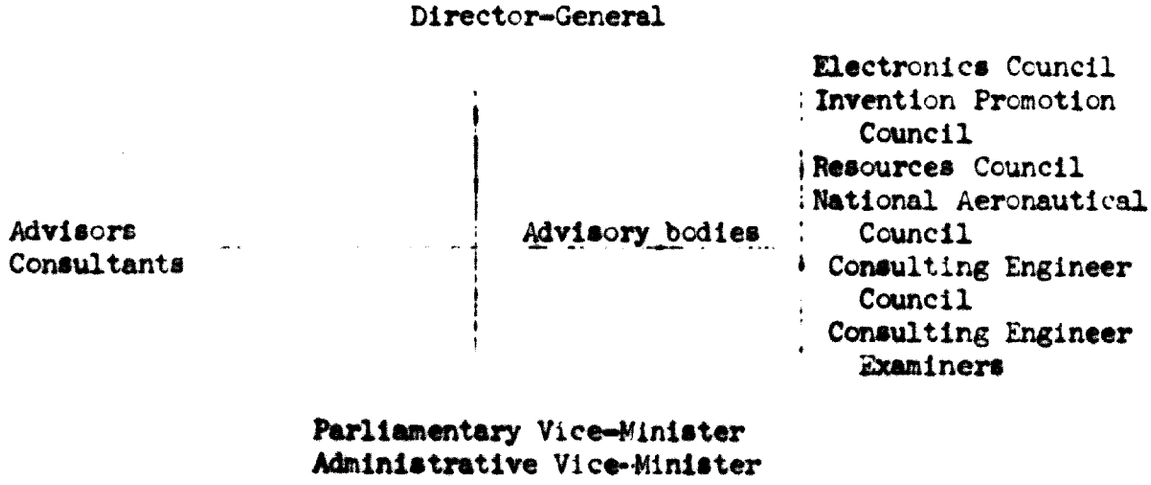
(b) Overall co-ordination of affairs relating to science and technology within all government organizations having science or technology related missions;

(c) Overall co-ordination of budget preparation for expenditures on research in government organizations.

45. The Council for Science and Technology was established in the Prime Minister's Office in 1959 as an advisory body to him. It has a membership of eleven, with the Prime Minister as Chairman; the other members are five government representatives of ministerial or director-general rank and five from academic and industrial circles appointed by the Prime Minister with approval of Parliament.

CHART 6

Organization of the Science and Technology Agency
Office of the Prime Minister



46. This Council, on receipt of inquiry from the Prime Minister, renders advice on the following matters:

(a) Establishment of fundamental and comprehensive policies of science and technology;

(b) Establishment of long-range and comprehensive goals for science and technology;

(c) Establishment of fundamental policies for the promotion of research which is particularly important in attaining these goals.

47. The Agency of Industrial Science and Technology (AIST) (1, 10), an "auxiliary organ" of the Ministry of International Trade and Industry originally established in 1948, has the administrative structure shown in Chart 7. In this chart the 13 laboratories which it manages are not listed in detail, but their functions are described in later paragraphs and they are included in the summary table of all government laboratories presented later in this Section.

48. The main duties of the Agency are the following:

(a) Management of the 13 attached laboratories, which prior to 1948, were under the control of various bureaus in MITI, so as to bring about maximum efficiency by eliminating duplication and correcting deficiencies in their programmes and by bringing about collaboration among them. It also exerts efforts for the propagation and practical application of results;

(b) Promotion of industrial and mining technologies by examining and encouraging adoption of foreign technical methods; by granting subsidies for private researches on subjects of national importance; by encouraging the research association system to stimulate collaboration among private companies; by administering a system of depreciation and tax exemption for research facilities and prototype practical applications of new technology; and by facilitating loans for applying new technology;

(c) Promotion of the Japanese Industrial Standards, which my March 1963, had been extended to 5,183 items;

CHART 7

Administrative Structure of the Agency of Industrial Science and Technology
Ministry of International Trade and Industry

President

Headquarters

General Affairs Division

- General Affairs Section
- Administration Section
- Research Administration Section
- Laboratories Concentration Planning Section
- Technical Development Section
- Techniques Research and Information Section
- Techniques Development Officer

Standards Division

- Standards Section
- Material Standards Section
- Textile and chemical Standards Section
- Machinery Standards Section
- Electric Standards Section
- Transport and Aeronautical Standards Section

Research Institutes and Laboratories (13 Laboratories)

Auxiliary Organizations

- Conference of Industrial Science and Technology
- Japanese Industrial Standards Committee
- Heat Control Examination Committee

(d) Propagation and guidance of heat control in manufacturing to conserve fuels and improve the rationalization of industries;

(e) Providing technical assistance to the bureaus of MITI in the manufacturing and mining industries.

49. Research Institutes and Laboratories of the Agency of Industrial Science and Technology. The 13 laboratories administered by AIST are listed in Table 2, with data on their personnel and budgets as of 1964. A fourteenth laboratory, the Government Industrial Research Institute of Kyushu, is now under construction.

50. Each of these laboratories is under its own local administration, with overall guidance and co-ordination being supplied by the headquarters staff of the Agency. A summary of the fields of their activities is given in the following paragraphs. They are available to industry as sources of information and guidance. They issue technical publications of a wide range of types.

51. The National Research Laboratory of Metrology was originally established in 1903 as the Central Inspection Institute of Weights and Measures. It is located in Tokyo, but has branches in Nagoya, Osaka, and Fukuoka. It establishes, maintains, and supplies metrological units and standards. It carries out research on primary standards of length, mass, temperature, pressure, viscosity, and hardness, and makes studies on the application of measuring techniques.

52. The Government Mechanical Laboratory was established in 1937 to promote the improvement of technology in the mechanical industry. It carries out research on automation, machining and forming, durability of machinery, fluid dynamics, heat transfer, optical instruments, and internal combustion engines. It offers guidance and consultation on mechanical engineering.

53. The Government Chemical Industrial Research Institute, Tokyo, was established in 1900 to assist in promoting chemical manufacturing. Its major areas of research are analytical techniques, high pressure chemistry, chemical reactors, catalysts, utilization of sea water, and disposal of industrial effluents.

TABLE 2

Research Institutes and Laboratories of the Agency of Industrial Science and Technology

Ministry of International Trade & Industry
(Data as of 1 April 1964)

	Total Personnel	Research Personnel	Annual Budget (Millions of U.S. $)
National Research Laboratory of Metrology	283	129	931
Government Mechanical Laboratory	357	285	1,379
Government Chemical Industrial Research Institute, Tokyo	463	305	1,885
Government Industrial Research Institute, Osaka	320	215	1,107
Government Industrial Research Institute, Nagoya	319	231	1,144
Fermentation Research Institute	62	40	280
Textile Research Institute	149	113	504
Geological Survey of Japan	499	254	2,400
Electrotechnical Laboratory	1,206	656	5,022
Industrial Arts Institute	235	165	674
Resources Research Institute	392	259	1,437
Government Industry Development Laboratory, Hokkaido	110	77	539
Sub-totals	4,395	2,729	17,102

54. The Osaka Industrial Research Institute began in 1918 for research and testing on chemicals, ceramics, and machinery in West Japan. Its current research programme includes synthesis of macro-molecular products, special optical instruments, refractory coatings, and materials for nuclear reactors. Its branch in Shikoku is concerned with the paper industry and the sea products industry.

55. The Government Industrial Research Institute, Nagoya, was established in 1952 as an integrated institute for central Japan. Its chief areas of interest are utilization of radio isotopes, ceramic materials, pottery and porcelain, productivity studies in mechanical engineering and foundry technology, and utilization of solar energy.

56. The Fermentation Research Institute, founded in 1940, is concerned with alcohol technology, production of aniylase by mold, induced mutation in molds, screening of new micro-organisms and fermentation processes (such as reductive bacteria, fungi, and methods for producing laccase and fumaric acid), treatment of industrial wastes, and mold inhibition.

57. The Textile Research Institute was originally the Silk Laboratory, established in 1918. Research on artificial fibers was started in 1937 and the laboratory was renamed. Its major areas of work are the manufacture of synthetic fibers, spinning techniques, weaving, dyeing, finishing, and physical properties of fibers.

58. The Geological Survey, established in 1882, is the oldest of the technical organizations in the Agency. Its activities which are pertinent to industrial development include surveys on industrial water and metallic and non-metallic deposits and on fossil fuels.

59. The Electrotechnical Laboratory was founded in 1891, and has 9 branch operations at different locations. It conducts research on electronics, electrical standards, and on electric and atomic power.

60. The Industrial Arts Institute, established in 1928, carries out work on industrial design, art techniques for export merchandise, packaging, and merchandise analysis.

61. The Resources Research Institute was established on a broad base in 1952 to to study problems of preservation, development, and utilization of underground resources. It conducts research on utilization of coal, metallic ores, and petroleum and tar and on heat economy.

62. The Government Industrial Development Laboratory, Hokkaido, began operation in 1960 to carry out investigations and technical guidance on the problems of industry in the Hokkaido district.

63. Industrial Research in Laboratories of Other Ministries. The complex of government research laboratories is described in "Outline of Government Research Institutes in Japan", (26) issued by the Planning Bureau, Science and Technology Agency. This comprehensive listing of information as of 1 April 1963 gives for each laboratory the name and address, the name of the director, the number of personnel, outline of principal research activities, organization of major subdivisions, facilities and equipment, and publications.

64. A summary of these laboratories and their personnel is given in Table 3. Because this report is concerned with industrial research, the listing of individual laboratories in Table 4 under the various ministries is limited to those which offer information or services pertinent to manufacturing operations. These laboratories in general, operate as individual units under the administration of the central agencies to which they are attached, in a manner similar to that described for the MITI research organizations. The Science and Technology Agency of the Prime Minister's Office performs the function of general co-ordination.

TABLE 3

Summary of Government Research Activities

Ministry	Number of Laboratories	Total Laboratory Personnel
Prime Minister's Office	11	2,284
Ministry of Finance	2	98
Ministry of Education	3	213
Ministry of Health and Welfare	9	1,681
Ministry of Agriculture and Forestry	28	6,706
Ministry of International Trade and Industry	12	4,395
Ministry of Transportation	3	779
Ministry of Postal Service	2	472
Ministry of Labour	2	109
Ministry of Construction	3	1,595
Ministry of Autonomy	1	78
Total	76	18,410

TABLE 4

Government Laboratories Performing Research of Interest to Industry

Agency	Laboratory	Total Personnel	Research Personnel
Prime Minister's Office			
Hokkaido Development Agency			
Hokkaido Development Bureau	Civil Engineering Research Institute	256	n.a.
Defence Agency	Technical Research and Development Institute (5 research centres at various locations)	704	n.a.
Science & Technology Agency	National Aerospace Laboratory	428	303
	National Research Institute for Metals	410	296
	National Institute of Radiological Sciences	361	-
	.....		
	The Institute of Physical & Chemical Research	-	-
	Japan Atomic Energy Research Institute	-	-
Ministry of Finance			
Tax Administration Agency	Research Institute of Brewing	40	22
Government Printing Bureau	Research Institute of Government Printing Bureau	58	39
.....			
Japanese Monopoly Corporation	Central Research Institute	-	-
Ministry of Agriculture & Forestry			
	National Institute of Animal Industry	374	177
	National Food Research Institute	125	87

TABLE 4 (Continued)

Agency	Laboratory	Total Personnel	Research Personnel
Forestry Agency	Forest Experimentation Station	831	512
Fisheries Agency	Pearl Research Laboratory	23	11
	.....		
	Institute of Agricultural Machinery	n.a.	n.a.
	Ministry of Postal Service		
	Radio Research Laboratory	472	179
.....			
Nippon Telegraph & Telephone Public Corporation	Electrical Communication Laboratory	n.a.	n.a.
	Ministry of Construction		
	Public Works Research Institute	553	145
	Building Research Institute	175	68
	Ministry of Labour		
	Industrial Safety Research Institute	53	n.a.
	National Institute of Industrial Health	56	n.a.
	Ministry of Autonomy		
Fire Defence Agency	Fire Research Institute	78	n.a.

IV. PROGRAMME FOR ASSISTING SMALLER ENTERPRISES (27,28)

65. Background. Smaller enterprises with less than 300 employees or 50 million yen capital receive special attention in Japan and it is a major point of national policy that their efficiency should be improved. In 1960 these companies accounted for two-thirds of manufacturing employment, 47 percent of value added, and over half the export trade of the country.

66. The importance of these smaller enterprises in providing employment is shown in the following table for 1962 data.

Total population	100,000,000
Work force	30,000,000
Industrial employment	9,000,000
Employment in establishments with 300-1,000 employees	1,300,000
Employment in establishments with less than 300 employees	6,000,000

A further breakdown of establishments with under 300 employees gives the following figures:

Class by Number of Employees	Number of Establishments (thousands)	Total Number of Employees (millions)
1 - 3	313	0.6
4 - 9	94	0.6
10 - 29	98	1.7
30 - 99	33	1.8
100 - 299	7.5	1.4
300 and up	3	2.7

67. Smaller Enterprise Agency (27,28). The competitive position of these small firms has been very difficult. The government has recognized their need by the establishment of the Smaller Enterprise Agency in 1948 as a separate activity in the Ministry of International Trade and Industry. It has broad responsibility for nurturing enterprises of this type and for creating conditions that will assist their management and development. This policy is re-emphasized in the Medium-Term Economic Plan 1964-68.

68. The organization of the Smaller Enterprise Agency is given in Chart 4. In 1962 it had 152 employees and a budget of 6.56 million yen.

69. The main responsibilities of the Agency to nurture and develop smaller enterprises are the following:

(a) To develop basic policies;

(b) Activities related to enforcement of the Smaller Enterprise Co-operative Law;

(c) Activities related to enforcement of the Law on Formation of Smaller Enterprise Organization;

(d) Activities related to enforcement of the Law on Formation of Society of Commerce and Industry;

(e) Collection, analysis, and distribution of information;

(f) Arrangement for supply of funds;

(g) Activities related to smaller enterprise audit insurance;

(h) Activities related to mutual relief business for smaller enterprise retirement pension;

(i) Activities related to credit guarantee associations;

(j) Activities related to Central Bank for Commercial and Industrial Co-operatives;

(k) Activities related to Smaller Enterprise Finance Corporation;

(l) Activities related to Smaller Enterprise Credit Insurance Corporation;

(m) Survey and consultation on management, and formulation of recommendations;

(n) Encouragement of enterprise to learn production techniques and management practices;

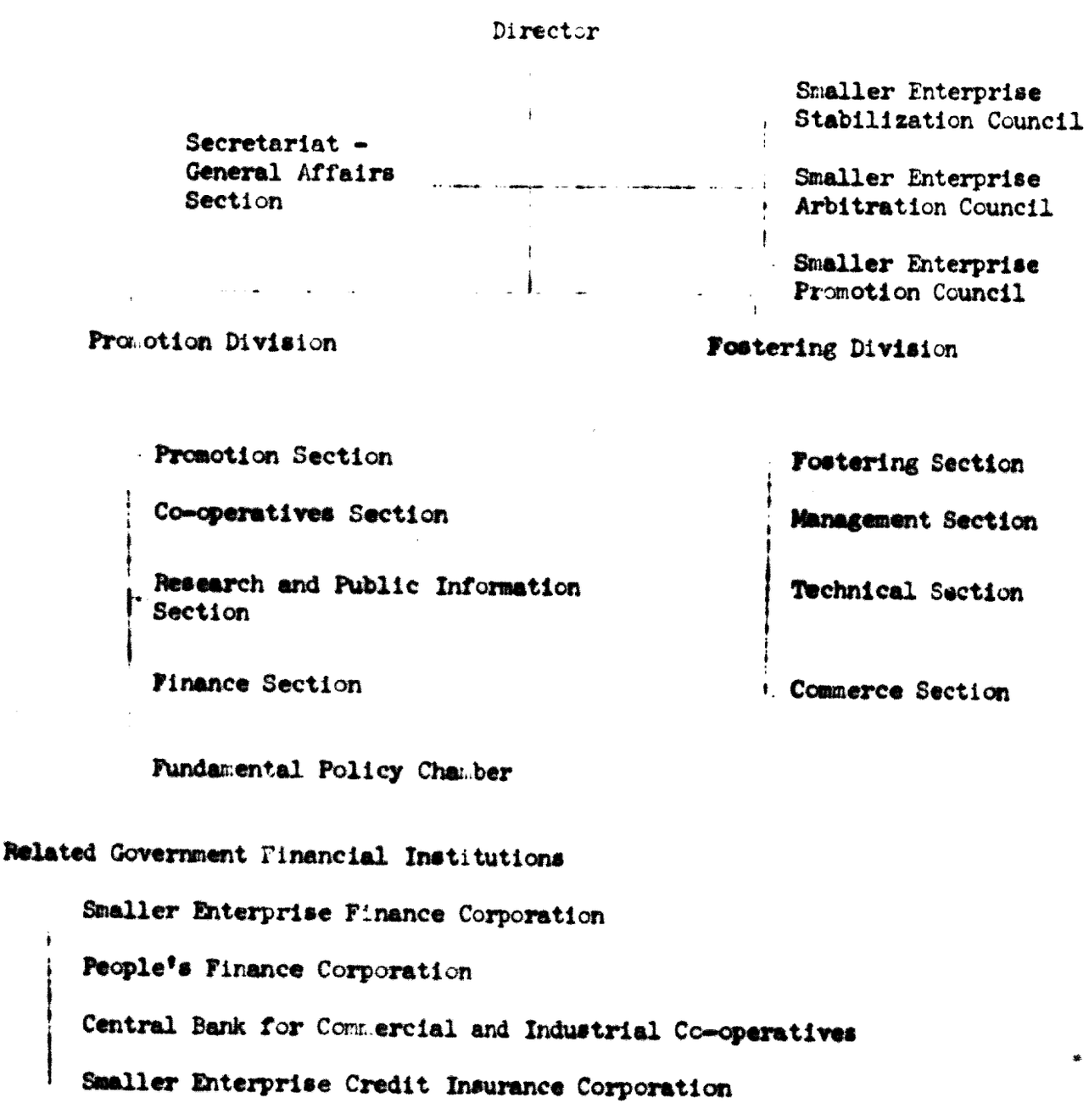
(o) Activities related to enforcement of the Law on Special Measures to Adjust Retail Business;

(p) Activities related to enforcement of the Provisional Law to Promote Smaller Enterprise by Industrial Classification;

(q) Activities related to enforcement of Shopping Districts Development Co-operative Law;

CHART 4

Smaller Enterprise Agency



(r) Survey and research on financing system and economic problem;

(s) Exhibitions for introduction of products or production methods of smaller enterprises.

70. Policies and measures formulated by the Agency are "translated into reality" by local Bureaus of the Ministry of International Trade and Industry, and by the programmes of prefectural governments and municipal authorities, as well as through co-operation of other ministries and their local branches.

71. Local Government Organizations. The activation of programmes for assisting smaller enterprises is brought to the local level through the agencies of the forty-six prefectures and several of the larger municipalities. Schematic illustration of the local organizations is shown in the following chart.

Local Government

Commerce and Industry Division		Other Divisions	Research Institutes and Laboratories	Guidance Centres for Commerce and Industry
Smaller Enterprise Section	Other Sections			

72. Decentralization of activities through 177 technical centres and 52 management guidance centres administered by local governments facilitates contact in depth with industry at the enterprise level.

73. Technical Assistance. The 177 technical centres in prefectures and major cities have a combined staff of about 5,500, of whom roughly 4,000 are engineers, which represents a high ratio of professional personnel to supporting staff.

74. The Technical Section of the national Smaller Enterprise Agency serves as overall co-ordinator of the programmes of prefectural and municipal centres. In addition, it administers subsidies for development of enterprises in special situations, the budget for this purpose in 1965 being 50 million yen.

75. The budgets of the 171 local technical centres amount to over 4 billion yen per year. The national government contributes about 10 percent of this sum, these funds being used chiefly for equipment, support of technical improvement projects, special studies, expense of field contacts, training courses for technicians, industry meetings and conferences, and compilation of handbooks for technical guidance.

76. Two of the largest technical centres are the Industrial Research Institutes of Osaka Prefecture (9) and of Kanagawa Prefecture (8), the latter serving the Yokohama area. These two institutions have been in operation on the present basis for more than 15 years, although they were in existence before World War II on a smaller scale. Each has a staff of more than 150 engineers and a budget of roughly 400 million yen, of which about one-half represents salaries. Their equipment has been improved in recent years and their facilities are extensive.

77. The success of the technical centres in reaching individual establishments, either directly or through industry associations, is impressive. In Tokyo, which has about 50,000 smaller enterprises, it is estimated that about 25 percent have some form of contact with metropolitan laboratory organizations (private communication). During 1964, the Tokyo Industrial Research Institute, with a staff of 95 engineers, handled 20,000 cases for consultation of various types and also about the same number of tests or analyses. In the city there are also two other technical centres for the textile and electrical industries, respectively. The total number of engineers in these three Tokyo laboratories serving smaller industries is nearly 300.

78. The technological patterns of the work in the various industrial research institutes follow in a general way the make-up of industry in their respective regions, such as mechanical and metal-working plants, electronic and electrical equipment, chemicals, etc. The larger enterprises in the "smaller enterprise" classification are the major users, as is to be expected. Smaller establishments are often reached through industry associations. In Osaka, for example, 45 job-shops engaged in heat-treating metals belong to an association, and in the area there are probably at least 30 other associations with 40-100 members each (private communication). The local associations are usually affiliated with national headquarters organizations representing their branches of industry.

79. Individual enterprises pay for some of the work in the prefectural centres, for example, modest fees for consultation and charges for analyses and tests. The total of charges is quite small, amounting to about 5 percent of the total budget of the Osaka centre, for example. The fees are paid into the national treasury and not directly to the institutes.

80. In addition to seminars, meetings, consultation, testing, and analyses, the technical centres offer opportunities for training apprentices for individual enterprises. One-year courses are offered to graduates of technical high schools at a cost of 2,000 yen per month to the employer, the actual cost to the centre being 6,000 yen per month per student. The difference is made up by joint subsidies from the Smaller Enterprise Agency and the respective prefecture, as well as the cost of about 2 million yen the first year the course is given to provide equipment for instruction. Two thousand apprentices were trained in Japan in such courses in 1963.

81. "In-house" programmes are carried on by each of the centres to improve the skills of its staff. Even though advanced techniques and theory may be involved, it is stated that the objective is to gain knowledge for practical application. There is also a programme for sending staff members abroad for inspection trips or advanced training.

82. It was found by experience that a period of years was necessary to establish good recognition of the value of the services in the minds of the managers of smaller enterprises. Through persistent cultivation of contacts and the use of conferences and industry association activities to stimulate interest, the programme is attaining a notable degree of success.

83. Management Guidance. In a pattern parallel to the technical assistance activities, but without close co-ordination with them, the 52 local management guidance centres are carrying out a comprehensive programme. Forty-six centres are administered by prefectures and six by large cities. The Management Section in the Small Enterprise Agency provides overall co-ordination. The total staff of these 52 centres is about 800. The Smaller Enterprise Agency subsidizes 50 percent of the costs, the balance being defrayed by the prefectures and other local organizations.

84. The Aid to Smaller Enterprise Guidance Centre was set up in Tokyo in 1962 to assist in developing personnel trained in management consultation for the local guidance offices and for some private firms. It has a staff of 85, of whom 27 are on the teaching force. It offers a one-year basic course for 110 students per year, of whom about half are sent by local governments and half by banks and other institutions. There is also a one-month course for management consultants given seven times per year to about 40 students. A six-month technical consulting course is offered twice a year to 55 students, all being sent by local governments.

85. The local guidance centres carry out a range of activities including advice and consultation to individual enterprises on management problems, surveying and reporting business conditions in their areas, and conducting seminars and conferences on managerial practices.

86. Financial Assistance. Because smaller enterprises chronically suffer from lack of capital, the Government has adopted measures to improve their credit standing and to facilitate additional financing. These activities include: (a) supplying funds, through purchase of debentures, to commercial banks and other private financial institutions to expand the volume of loans to small firms; (b) supplying capital to three government financial institutions established in earlier years, viz., Smaller Enterprise Finance Corporation, People's Finance Corporation, and Central Bank for Commercial and Industrial Co-operatives (42); (c) supplementing available credit through Credit Guarantee Association and Smaller Enterprise Credit Insurance Corporation; and (d) reducing the burden of income tax, corporation, and local taxes, and allowing special depreciation on machinery and equipment.

87. Strengthening of Competitive Power. A great many enterprises are so small in scale that they are considered to be below the size of a manageable unit. In order to organize them into more competitive groups, two kinds of measures are being taken: (a) formation of co-operatives and (b) formation of commercial and industrial associations. These programmes are based on several acts of legislation since 1949. As a result of these activities in 1961-62 there were 26,981 co-operatives, 680 commercial and industrial associations, and 2,400 societies of commerce and industry.

88. Rationalization of Smaller Enterprises. Several laws have been enacted to reduce excessive competition from big enterprises and are organizing themselves.

89. Special Guidance to "Petty" Enterprises. Special measures are being taken to give assistance in general management, accounting, finance, and taxes to "petty" enterprises with less than 20 employees, or, in commerce and service businesses, less than 5. Since 1960, every chamber and society of commerce and industry has been receiving subsidies from the central and prefectural governments to hire "Promoters of Improved Management," who now number 4,417 consultants with 2,208 assistants.

90. Equipment Modernization. Replacement of outmoded equipment is being promoted by subsidies, financing, and special depreciation allowances.

91. Industrial Estates. In 1960, the government was fostering 30 estates in different parts of the country to provide facilities which would be helpful to smaller enterprises.

92. Labour Policy. Guidance on labour administration is included in the consulting system and job-skill under the Vocational Training Law. The effect of the Minimum Wage Law will force smaller enterprises to improve management practices and productivity. The Smaller Enterprise Retirement Pension Mutual Relief Law, the Welfare Pension Insurance System, and People's Pension System all take into consideration the special problems of smaller businesses.

93. Promotion of Exports. Because the expansion of overseas markets is so important in the economic plans of the country, measures to assist smaller manufacturers include low-interest loans on long-term export contracts, help in developing better designs, promotion through trade fairs and exhibitions, and subsidies for innovative production and technical research.

94. Special Measures for Selected Sectors. The government designates certain industries which require promotion, and decides on areas needing improvement through consultation with the Smaller Enterprise Promotion Council. Seventeen industries were listed in 1961, 23 more in 1961 and 26 more in 1962.

V. INDUSTRIAL PROMOTION (1)

95. Resource Surveys. Government support to utilization of natural resources is provided through technical assistance by national agencies and subsidies from government funds.

96. Surveys have recently been carried out on black ore (pyrites, chalcopyrite, galena, sphalerite, barite, and gypsum), iron ore, limestone, dolomite, and uranium deposits. Research on subterranean coal and studies on solar energy are being conducted.

97. Promotion of Exports. To ensure maintenance and improvement of the reputation of Japanese products, compulsory inspection has been introduced for types of goods specified by Cabinet Order. The inspection includes the quality, material, manufacture, and packing. The value of items under this control probably accounts for about 40 percent of all exports. The inspection is carried out either by a government organization or by a non-government body which conducts its activities under designation of the appropriate ministry.

98. The list of commodities, requiring export inspection includes 222 items of machines and metal goods, 113 sundries, 62 chemicals, 52 textiles, 46 agricultural, forestry, and aquatic products, and 3 pharmaceuticals.

99. This system of control is exercising a beneficial effect on upgrading both technology and management practices. The necessity to meet export specifications leads to improvement in manufacturing and design.

100. Japan External Trade Organization (JETRO). This organization, supported wholly by the government, has 58 agencies abroad and 32 locally. It has the following activities:

(a) Investigation of foreign markets;
(b) Overseas advertisements;
(c) Participation in foreign and international trade fairs;
(d) Sending students abroad to study design;
(e) Activities of 14 foreign Japanese Trade Centres;
(f) Distribution of information and data.

101. Examination of Goods and Designs. Some 500 commodities are not to be exported without passing an examination to prevent design imitation and infringement of foreign proprietary rights.

102. Introduction of Special Products. Traditional handicraft items are being improved through concerted promotional efforts.

103. International Commercial Arbitration. An arbitration network has been set up with 33 countries.

104. Export Insurance. The government has set up special accounts to protect exporters against various contingencies.

105. Financing. Measures have been adopted to smoothe the financing of exports.

106. Training Courses. Courses are being subsidized by the government, especially for employees of smaller enterprises, in foreign trade and languages.

107. "Floating Fair". During 1965 the "Sakura-maru" was scheduled to visit many countries in Southeast Asia.

108. Basic Policies for the Future. To maintain stable economic growth in the face of problems arising from liberalization of trade, the following basic policies have been enunciated by the government (1, Chapter IX):

(a) Industries which will bring about high rate of growth should be preferentially financed, e.g., automobiles, special steels, and petro-chemicals.

(b) Reduction of industrial taxes will expand capital for modernization.

(c) Financing on a long-term basis of special machinery industries and electronics industries will be continued by the Japan Development Bank.

(d) The textile industry should be strengthened.

(e) The "Buy domestic goods" campaign should be strengthened.

(f) To reduce dependence on technical imports there should be promotion of government research, encouragement of non-governmental research and industrial development, and consideration of changes in the patent policy.

(g) There should be comprehensive review of energy sources and a committee has been appointed for this purpose.

(h) There should be a planned pattern for establishment of industrial facilities through location guidance.

(i) The modernization of smaller enterprises should be promoted by increasing financial support, guidance on technology and management, training of entrepreneurs and employees, and protection from delay of sub-contract payments.

VI. PUBLIC CAPITAL INVESTMENT

109. "The proportion of gross national product held by government-owned fixed assets (in Japan) was 7.1 percent in 1955, 9.8 percent in 1961, and finally 11.4 percent in 1963" (37). "Comparing Japan's 1961 figure of 9.8 percent with other nations, we find that it was far above ratios for the United States (2.9 percent), West Germany (3.3 percent), Britain (6.7 percent), and France (6.9 percent)."

110. The amount of government fixed asset investment is traced (37) for the period 1955-63 based on information in a White Paper on National Income issued by the Economic Planning Board, as shown in Table 5.

TABLE 5

Government Fixed Asset Investment

	As Percentage of Gross National Product	As Percentage of Private Equipment Investment	Private Fixed Investment as Percentage of GNP
1955	7.1	75.8	9.0
1956	7.1	48.3	13.5
1957	8.0	48.1	16.7
1958	8.8	55.3	16.2
1959	8.6	49.6	16.2
1960	8.9	42.6	20.1
1961	9.8	42.5	23.1
1962	11.4	57.6	20.8
1963	11.4	61.9	18.3

VII. INDUSTRIAL FINANCING

111. Industrial Development Banks. There are two government financial organizations: Japan Development Bank (30,32) and the Hokkaido Tohoku Development Corporation. They were set up for the purpose of developing and promoting Japanese industries. Both give help to other financial organizations and at the same time provide industries with long-term funds for the purpose of encouragement.

112. The Japan Development Bank, established in April 1951 with a capital of US $28 million, has increased its capital to US $650 million as of 31 March 1964, with reserves of US $207 million. The bank has extended loans of US $3,420 million, including some obligations from predecessor institutions. Outstanding loans amounted to US $2,370 million. During its 13 years of existence it has guaranteed long-term foreign currency obligations of Japanese companies to the total of US $509 million. The bank's main sources of funds are its own capital and reserves and borrowing from government. It has also borrowed the equivalent of US $313 million from the IBRD and has issued external loan bonds since 1961 in the New York capital market aggregating US $60 million. Cumulative net earnings for the 13 year period were US $509 million, of which US $383 million has been paid to the government.

113. The majority of the bank's loans, which have been restricted to private enterprises, have been to four basic industries: electric power (35.3 percent), ocean shipping (24.2 percent), iron and steel (3.1 percent) and coal mining (8.4 percent), the figures in parentheses indicating percentages of the total of 312,348 million yen in domestic currency. In addition, loans in foreign currency, amounting to the equivalent of 54,310 million yen, have gone chiefly to electric power (48.0 percent) and iron and steel (50.3 percent). It has also advanced credit for machinery, equipment, and facilities in such growthindustries as petro-chemicals, synthetic fibres, electronics, and atomic power generation. Other more recent areas of financing include development of domestic technology, airlines, airways, selected industrial infrastructures, facilities promoting tourism, and regional development loans.

114. Since 1951, the bank had made loans to 1,996 large and medium enterprises, including 77 of the 100 largest Japanese firms. The following tabulation shows the number of firms in various types of industry:

Electric power, including captive generating plants	42 firms
Marine transportation, including coastal shipping	136 firms
Chemical	323 firms
Iron and steel	41 firms
Coal mining	88 firms
Machinery	684 firms
International tourism	105 firms
Land and air transportation	74 firms
Industrial infrastructure	155 firms

115. The bank does not compete with private financial institutions but acts rather as a supplementary organ to them by covering fields of investment which would be difficult for them to handle.

116. The Hokkaido Tohoku Development Corporation limits its financing to that particular district, where regional development was relatively slow. It has promoted and developed industries and has also been providing funds for long-term use as well as for facilities.

117. Financial Assistance for Smaller Enterprises. This topic has been discussed in Section IV and is listed here for cross-reference (42).

VIII. MANPOWER AND TRAINING

118. Scientists and Engineers. The Doubling National Income Plan, approved in December 1960, forecast a shortage of 170,000 scientists and engineers by 1965. The Medium-Term Economic Plan 1964-68 estimated the shortage as 100,000 during its term. The shortage is expected to be considerably less for several years after 1968.

119. The supply of scientists and engineers has been increased by raising the limit of enrollment at universities. The needs for professional workers are mainly among teachers of science, mathematics, and engineering; physicians and their assistants; nurses; and qualified professionals in the air and shipping services. Deficiencies in these areas are due to less attractive conditions of employment, and it will be necessary, particularly in the public sector, to make improvements.

120. Skilled Workers and Technicians (29). The needed increment of skilled workers for the ten year period 1961-70 was estimated at 1,600,000. Under the Medium-Term Plan it was re-estimated for 1964-68 as 1,100,000.

121. The Vocational Training Law of 1958 classified training into two categories, viz., public and within the enterprise. Public vocational training is provided mainly in centres established and operated by the prefectures and in similar centres of the Employment Promotion Projects Corporation, a public organization. Under the two types of training offered, in 1964, about 42,000 younger persons were in apprentice courses of one to two years, while 79,000 older unemployed workers were being retrained in six months to one year.

122. Training within an enterprise is given by employers or their organizations, for apprentices or for retraining, by procedures in the Ministry of Labour Ordinance. The training period is two to three years, and in 1964, about 80,000 persons were in such courses.

123. Management Training. The Japan Productivity and Management Centre (34) was established in 1955. Its tasks include sending survey teams abroad or inviting foreign specialists to Japan. It accepts survey teams from Asian countries. It has developed and introduced a system of joint labour-management conferences.

124. Management Training for Smaller Enterprises. The extensive programme has been discussed in Section IV and is mentioned here for cross-reference.

IX. INDUSTRIAL ADVISORY AND EXTENSION SERVICES

125. Large enterprises tend to be self-sufficient in providing themselves with the specialized personnel, both technical and managerial, required for their activities. While government or prefectural agencies are available to them for such services, the volume of requests is said to be relatively small, and therefore, the efforts of these agencies tend to be concentrated on assistance to smaller firms.

126. The programme for help to smaller enterprises is so comprehensive that it seemed advisable to discuss it as a whole in Section IV. The breadth, quality, geographical decentralization, and extent of use of the services by enterprises are noteworthy.

X. LEGAL AND REGULATORY MATTERS (1)

127. Basic Legislation. There is no law imposing general restrictions or regulation of investment. Four kinds of companies are recognized: stock companies, limited companies, limited partnerships, and unlimited partnerships, as defined by the Corporation Law. The Industrial Structure Council, operating under the law establishing the Ministry of International Trade and Industry (MITI) appraises plans of investment presented by companies, using the criteria of balance of the national economy, consolidation of the industrial structure, and rationalization of enterprises. The Minister of MITI, after accepting plans, gives administrative guidance on the direction of investments.

128. Imports of Capital Goods. Import approval is required for capital goods, in accordance with provisions of the Comprehensive law of 1949 regarding foreign exchange and trade.

129. Location of Industrial Enterprises. In certain districts there are limitations to prevent undesirable overcrowding.

130. Licensing of Factory Establishments. Foreign investors are required to obtain government approval to establish Japanese corporations.

131. Control of Raw Materials. Mining and quarrying rights are covered by regulations, as are also petroleum refining, power supply and transportation, manufacture of gas, and atomic energy.

132. Importation of Technical Know-how. Government approval is required when the term of the contract or payment exceeds one year.

133. Foreign Investments. Permission of the government is required by a foreign investor wishing to buy shares in a Japanese corporation or to establish a Japanese corporation. There are limitations as to the extent of foreign investment permitted in a given case.

134. Customs Duties and Taxes. Raw materials are duty free except when they compete with domestic production; 332 out of a list of 2,530 items are duty free, but they constitute 50 percent of all such imports.

135. Taxes imposed on enterprises include national income or corporation taxes and local inhabitant, enterprise, property, etc., taxes. There are preferential measures to encourage modernization and development of industry, such as special depreciation rates and tax exemption on income from important new products.

136. Joint Ventures with Foreign Entrepreneurs. Overseas investment is encouraged by several measures. The government has established the Japanese Export-Import Bank and the Overseas Economic Co-operation Fund to supplement private financing. An overseas investment insurance system is operated by the government to indemnify against risks.

137. Profits, dividends, and installments of foreign capital can, in general, be remitted abroad. In certain industries of public importance there are restrictions on the amount of equity which can be owned abroad.

138. No direct government measures are taken to encourage foreign investment. There are some tax benefits applicable in certain cases, as provided in the Foreign Investment Law.

BIBLIOGRAPHY

1. Asian Conference on Industrialization. Manila, 6-20 December 1965. Country study on Japan, contributed by the Government of Japan. Bangkok, United Nations, Economic Commission for Asia and the Far East, 14 September 1965. Doc. I & NR/Ind. Conf./C.15. 133 p. Mimeographed

2. Dedijer, Stevan. Measuring the growth of science; quantitative data on a nation's research effort to provide an index of its socio-economic development. Science (Washington), 138: 781-788, 16 November 1962

3. Electric Power Development Co., Ltd., Tokyo. EPD Consultants Tokyo, n.d. 49 p. illus.

4. Engineering Consulting Firms Association, Japan. A guide to Consulting Engineers in Japan, 1965. [Tokyo] 1965. 37 p. illus.

5. The Industrial Bank of Japan, Ltd., Tokyo. Japanese industries, 1964. Tokyo, 1964. 219 p. illus.

6. —. Introducing the Industrial Bank of Japan, Ltd. Tokyo, 1965. 30 p. illus.

7. —. Long-term credit banking system of Japan. Tokyo, 1964. 17 p.

8. Industrial Research Institute, Kanagawa. Industrial Research Institute of Kanagawa Prefecture. Kanagawa, 1965? 34 p. illus. Text in Japanese

9. Industrial Research Institute, Osaka. Industrial Research Institute, Osaka Prefecture. Osaka, 1965? folder. In Japanese

10. Japan. The Agency of Industrial Science and Technology. [Tokyo] 1960. 48 p. illus.

11. —. —. Government Chemical Industrial Research Institute, Tokyo. [Tokyo, 1965?] 16 p. illus.

12. —. Agriculture, Forestry and Fisheries Research Council. Directory of national research institutions for agriculture, forestry and fisheries in Japan. Tokyo, 1965. 62 p. illus.

13. —. Bureau of Statistics. Statistical survey of researchers, 1964. [Tokyo, 1965] 309 p. Title and text in English and Japanese

14. —. Economic Planning Agency. Medium-term economic plan, 1964-1968. [Tokyo] 1965. 110 p.

15. --. International Trade Bureau. Organization of Ministry of International Trade and Industry. Tokyo, 1 May 1965. 7 p. Mimeographed

16. --. Ministry of Agriculture and Forestry. Food Research Institute. Tokyo [1965] 10 p. Title and text in English and Japanese

17. --. --. Forest Experiment Station. [Tokyo, 1964] 14 p.

18. --. Ministry of Education. Outline of education in Japan. [Tokyo] 1965. 13 p.

19. --. Ministry of Foreign Affairs. The role of savings in the Japanese economy. Tokyo, 1965. 35 p.

20. --. Ministry of International Trade and Industry. Agency of Industrial Science and Technology, 1964. [Tokyo, 1964?] 13 p. Mimeographed

21. --. --. Industry in Japan. Tokyo, 1965. 65 p. illus.

22. --. --. Organization of Ministry of International Trade and Industry. [Tokyo] 1965. 7 p. Mimeographed

23. --. Patent Office. The statistical report of the Japanese Patent Office, 1964. [Tokyo, 1964?] 19 p. Title and text in English and Japanese

24. --. Prime Minister's Council for Science and Technology. Report of the inquiry for the promotion of science and technology in the next 10 years, issued ... on 4 October 1960. Tokyo, 1964. 46 p. Mimeographed

25. --. Public Utilities Bureau. [Organization and administration. Tokyo, n.d.] 6 p. Mimeographed

26. --. Science and Technology Agency. Planning Bureau. Outline of Government research institutes in Japan, as of 1 April 1963. [Tokyo, 1963?] 133 p. Mimeographed

27. --. Smaller Enterprise Agency. Administration for development of smaller enterprises in Japan. Tokyo, 1962. 25 p.

28. --. --. Annual report on smaller enterprises for 1964. [Tokyo, 1965?] 1 v. In Japanese

29. --. Vocational Training Bureau. Vocational training in Japan. [Tokyo, 1965] 36 p. illus.

30. The Japan Development Bank, Tokyo. Annual report for the year ended 31 March 1965. [Tokyo, 1965[40 p. illus.

31. --. Facts and figures on the Japanese economy, 1964. [Tokyo, 1964] 117 p.

32. --. The Japan Development Bank Law and Articles of Incorporation... [Tokyo, n.d.] 43 p.

33. --. Postwar growth of the Japanese economy. [Tokyo, 1964] 143 p. illus.

34. Japan Productivity Center. Productivity drive in Japan. [Tokyo, 1965] 34 p. illus.

35. Japan Spinners' Association, Osaka. Activity. Osaka, 1964? 7 p. Mimeographed

36. --. Articles of Japan Spinners' Association, as amended. Osaka, 1964? 4 p. Mimeographed

37. Japan Trade Monthly, Tokyo. Industrial Japan, 1965; special supplement to Japan Trade Monthly, April 1965, Tokyo, 1965. 360 p. illus.

38. Keidanren. Federation of Economic Organizations, Tokyo. Economic picture of Japan. [Tokyo] 1965. 73 p.

39. --. Keidanren; its organization and activities. [Tokyo, 1965?] 24 p.

40. --. Keidanren review, biannual '65 2 No. 3, September 1965

41. Otani, Kotaro. Introduction to the Japanese patent system. Washington, 1963. (Reprinted from The patent, trademark, and copyright journal of research and education, vol. 7, no. 1, Spring 1963, pp. 13-22)

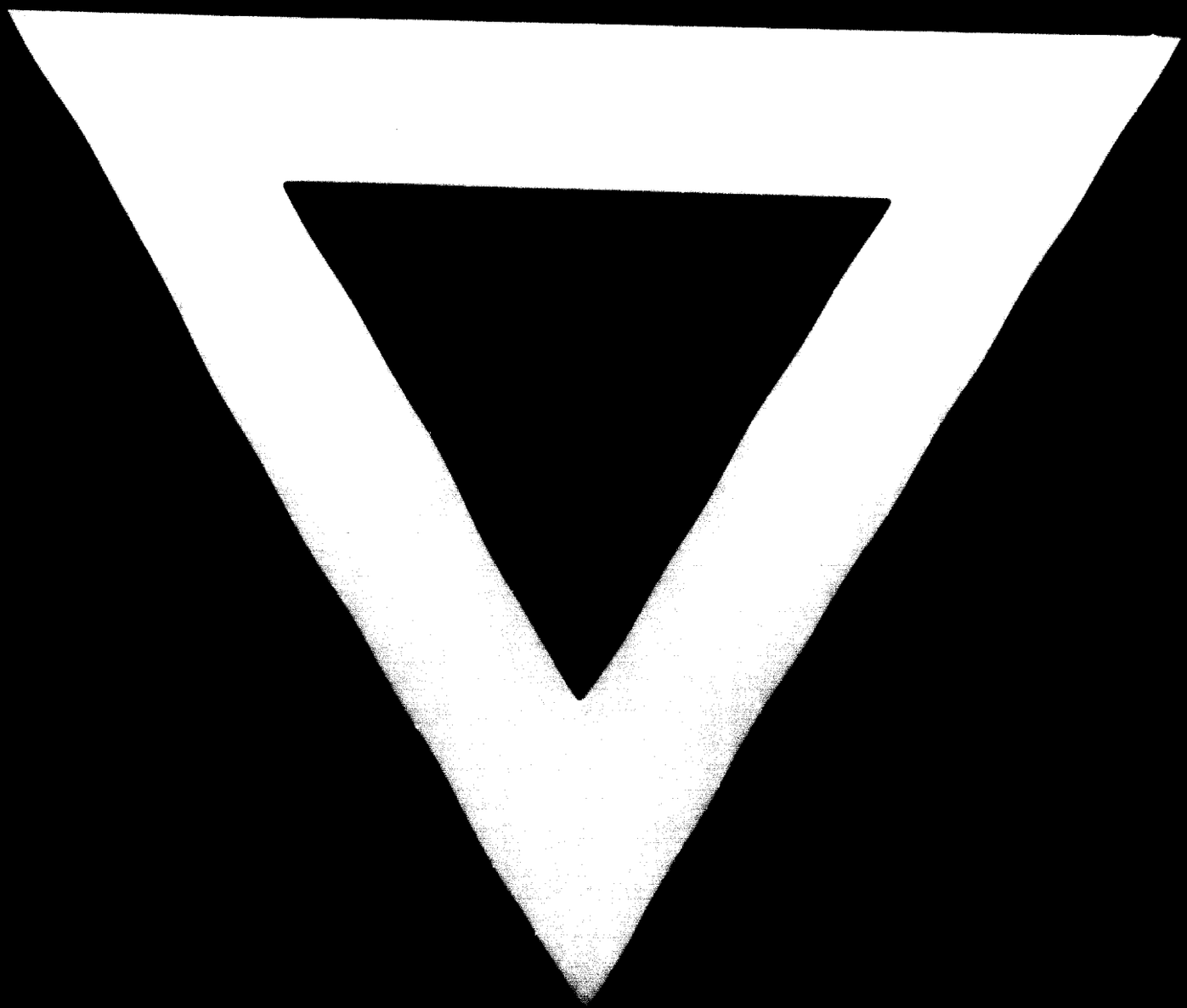
42. The People's Finance Corporation and others. Outline of the government affiliated institutions for small business financing in Japan. Tokyo, 1964. 33 p.

43. Sophia University, Tokyo. Faculty of Economics. An econometric quarterly model on aggregate behavior of Japanese corporations, by A. Sagrista, S.J. Tokyo, 1965. 98 p.

44. --. Socio-Economic Institute. International Management Development Seminars: Business in Japan Workshop No. 4. Tokyo, 1965. 9 p. Mimeographed.

45. Tashiro, Shigeki. The problems of adapting to technological changes in developing nations; text of an address at the Symposium of the Thirteenth International Management Congress (CICS) held in New York, 16-20 Sept. 1963. [New York, 1963] 4 p.

46. Tokyo Guidance Center for Small Enterprises. Summary of business conditions conditions. Tokyo, 1965? Chart. In Japanese



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