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CAPITAL ACCUMULATION BY LARGE ENTERPRISES IN JAPAN

By Hidekazu NOMURA*

The high growth of economy in Japan, which had been evolved in 1960's, attracted attention internationally. This paper discusses the capital accumulation by Japanese large enterprises having sustained the high growth of Japanese economy through a case study of leading enterprises in Japan.

The construction of this paper is as follows:

- I Indexes of capital accumulation
- II Characteristics of capital accumulation by industries
- III Selection of Large Corporations
- IV Actual status of capital accumulation in large corporations
- Summary

I Indexes of Capital Accumulation

Concepts of capital accumulation in businesses require close examination from both sides of economics and accounting, since a business is an institutional accounting unit prescribed by a legal limited liability rather than an economic category. In order to establish capital accumulation as an economic category in the unit of a business, two inconsistent elements, that is, separation of accounting in economic realities from that in financial institution and also their relationship on a partial side irrespective of such separation, should be recognized.

If, for example, disjunction of a corporate organization takes place, accounting data of the corporation do not include those of the spun-off subsidiary in spite of progress of capital accumulation in the corporation. Therefore, such data do not reflect the total image of capital accumulation. After all, measurement of capital accumulation in businesses is influenced by corporate reorganization such as merger and disjunction. In addition, the amount of capital accumulation confirmed by accounting information published by an individual enterprise depends on strategic judgment of the business group. This is caused mainly by means of replacement of profit through the price manipulation among enterprises belonging to the same capital affiliate.

An important thing among these problems rests in recognition of differences between individual capital and individual enterprises. Capital accumulation sustained by economic substance is grasped on the basis of individual capital and it is an objective existence. However, an individual enterprise is an accounting unit in the financial institu-

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tion and it is not individual capital itself even though it is related to the latter. The individual enterprise is an accounting unit which is a partial side divided from the individual capital and for which liability is legally limited.

However, our effort to obtain, as material figures, capital accumulation of individual capital from published materials is attained only by reference to accounting materials in the unit of an individual enterprise, since there is no accounting institution in the unit of individual capital. Thus, an amount of profit in the financial statements should not be regarded simply as value of capital accumulation. Therefore, use of accounting data as an index of capital accumulation requires that accounting systems and procedures should be linked with an economic concepts of capital accumulation.

As it is universally known, profits from the accounting point of view are computed as balance of revenues over expenditures in the profit and loss account. In this account, revenues recognized on the realization basis are restricted to secure data, while expenditures recognized on the accrual basis tend to expand in their scope. In addition, there exist expenses without cash outlays, too. In other words, such kinds of expenses as appraisal loss, depreciation expenses and transfer to liability provisions in the current term are those for which cash outlays are not required for the time being. Especially, in case of growing enterprises, the accumulated amounts of valuation reserves and liability provisions increase year by year. These items are included in expense accounts of the profit and loss statement, but they produce no cash outlays. While revenues imply inflow of funds, expenses include some items which become the source of internal funds without cash outlays. By this reason, internal funds may increase even in case the profit and loss statement indicates no increase in profits.

Such consideration leads to a solution that not only profit reserves as results of profit and loss account but also items composing internal funds in respect of fund accounting may be regarded as internal reserves in a broad sense, that is, a form of capital accumulation from the accounting point of view.

Items constituting internal funds are measured by two types of indexes, that is, incrementals for the single term and its accumulated amounts. In this case, it should be noted that differences between accumulated amounts by terms do not always correspond directly to the incrementals (or reduction) as the flow in the term. If curtailment of the capital scale of an enterprise takes place in the term, accumulated amounts of internal reserves also decrease by amounts corresponding to their parts directly related to the curtailment. More correctly, therefore, the increment in the term includes an offset to the part reduced by the curtailment of the capital scale in addition to the difference between accumulated amounts.

It is defined that items of internal funds consist of specified reserves, valuation reserves and fixed liability provisions.

Although specified reserves reckoned up on the side of liabilities of the balance sheet, they theoretically have a character of profit reserves. Such reserves have been authorized to set up by statutory provisions, but these titles of accounts were deleted from the balance sheet by the amendment of the commercial code in 1982. Therefore, specified reserves

have come to be transferred to voluntary reserves or reversed to unappropriated earned surplus.

Valuation reserves are represented by reserves for bad debts and accumulated depreciation. Reserves for bad debts are an unaccrued estimation at the time of settlement and, therefore, they theoretically have a character of profit reserves. Practically, however, the occurrence of losses due to bad debts for large enterprises is very rare, even though it is not quite unexpected. Since they usually take security against debts to them, their real loss will be extremely low, even if any damage arises. On the other hand, accumulated depreciations are to recover allotment of costs for renewal of tangible fixed assets. In such provisions a major problem is whether amounts of transfer to the provisions are appropriate or not. Since, however, economic depreciation factors are also considered for estimating useful lives of assets, it may be impossible to fix appropriate amounts of depreciation expenses. Therefore, this study does not deal with division between theoretically appropriate amounts of depreciation expenses and amounts surpassing the above level. Depreciation expenses in both senses are added to the existing accumulated depreciation and reserved within the corporation until renewals of the tangible fixed assets. Thus, current assets corresponding to such provisions are placed in the available state. Such available funds created based upon the accounting institution and not as profits are called internal funds. In other words, renewal funds, which are not profits in the profit and loss accounts but are collected and reserved in the corporation as expenses, in the accounting institution, caused by differences in the capital turnover, are internal funds available for separate operations until renewals of the assets covered by the accumulated depreciations. Such funds are the internal funds with restricted periods of operations from the viewpoint of particular tangible fixed assets. Under the tendency of growing investment in plant and equipment, however, such funds tend to increase continuously and form a major part of internal reserves as a semi-permanent source of funds.

Such feature are true of fixed liability provisions which are mainly composed of provision for retirement allowance. These provisions have character of expenses in the sense that they will surely be paid as deferred wages in the future. However, current standards on amounts of current transfer and limits of accumulation leave some problems.

The current tax law standard provides that the limit of accumulation shall be 40 per cent of the necessary amounts of retirement allowances on the supposition that all employees retire at the end of the term. This is a standard of the accumulation limit which is more than necessary with the exception of such cases as scheduled dissolution and fear of bankruptcy. Even in this case, however, establishment of the appropriate standard to be generally accepted is impossible, since appropriate standards vary by circumstances of individual corporations. Provisions for retirement allowance are available funds, at any rate, for business operations until actual payment of the allowances. Furthermore, such circumstances as increase of employees, raise in the wage level and improvement of retirement allowance regulations augment the total amount of the provisions in spite of occasional payments of allowances. Under such circumstances, this becomes semi-permanently available funds, too.

Since intervals from the settlement of accounts to actual payments are short in case of current liability provisions terms of operation as internal funds are not so significant that amounts of such provisions are excluded from the calculation in this study.

There are maintained some opinions that reserves should include capital surpluses in addition to these items. However, we are against such opinions, since capital surpluses are stipulated by laws and regulations and they should be regarded as contributed capital together with capital. In other words, capital surpluses are own capital but they should not be included in internal reserves.

For the purpose of investigating actual state of capital accumulation from financial statements released by corporations, comprehensive verification by means of the following three indexes is required:

First, index of growth indicating growth of capital scale;

Secondly, index of profitability to confirm whether or not the growth is maintained under high efficiency of capital;

And thirdly, index of reserve power to indicate level of accumulation.

Thus, it is impossible to simply specify the level or growth of capital accumulation by one of these three indexes. Besides, each of three indexes is composed of more detailed titles of accounts and their ratios. Therefore, ranking of capital accumulation by corporations may vary by ways of weighting three indexes or selecting items to be calculated by individual indexes. While comparison of enterprises within the same industry may encounter not so serious problems, comparison of enterprises belonging to different kinds of industries is difficult both theoretically and practically.

Items composing contents of each index are hereunder described.

First, items which can be used as indexes of growth are sales, total amount of each side of a balance sheet, tangible fixed assets, production capacity, number of employees, etc. These items can be grasped by rates of growth compared with data of the preceding year and more previous years (for example, 10 years ago). Even in this case, it should be examined whether tangible fixed assets as production means are expressed in acquisition costs or in depreciated book value, since the level of depreciation including special depreciation affects figures in the case of comparison of book values. It is also questionable whether the total amount of each side of a balance sheet released by a corporation can be said simply to be equal to the amount of gross capital of the corporation. Valuation reserves are deducted from pertinent items, and unsettled amounts of discounted and endorsed bills are not included in the total. Leased and rental assets are also not added to accounts. As shown above, the total amount of each side of a balance sheet by the current accounting system holds problems from the viewpoint of a numeric indicator of the actual state of corporate capital.

In addition, data on growth of investment account on the debit side and accounts such as capital and loan payable on the credit side are necessary for analyzing the structural character of indexes of growth. In short, the major concerns are what weight the structure of growth gives to investment into the outside and which is the major type of capital raising, increase of capital or dependence on financial institutions.

Secondly, items available as indexes of profitability are hereunder given.

Examples of such items are various periodic earnings, various ratios of earnings to sales, per capita production capacity, per capita sales and per capita earnings. When efficiency shown in profitability indexes becomes worse in spite of satisfactory increase of growth indexes, capital accumulation should hold problems. Of course, it is also necessary to note that there may be artificial worsening of efficiency as a result of profit transfer to other corporation within the same affiliated business group, since the profitability indexes herein examined are efficiency indexes of individual corporations.

Thirdly, items composing indexes of reserve power are hereunder given.

Examples of such items are owned capital, internal reserves (profit reserves and institutional reserves), land and securities including hidden value of assets and investment. These items indicate the level of reserves and the form of their existence. Thus, further maintenance of financial materials of whole business groups based on these data enables us to exactly recognize more detailed status of the progress and level of capital accumulation.

II Characteristics of Capital Accumulation by Industries

The progress of capital accumulation in business statistics developed around 1960's is shown by industries in Table 1. The source of materials used for this table is the Corporate Business Statistics. Therefore, this study does not cover data on unincorporated enterprises. Data from the statistics are of all corporations and of large corporations capitalized at one billion yen or more which are available to us. Years in which data were adopted are restricted to fiscal years 1960, 1965, 1970 and 1974 on account of the space, though continuity of data should essentially be kept.

Items of data indicated are: (1) Number of corporations, (2) Total amount of each side of a balance sheet, (3) Tangible fixed assets, (4) Owned capital, (5) Turnover, (6) Operating income, (7) Net income for current term (called "ordinary income" in the current system), and (8) Number of employees. While these items are related with any of three indexes mentioned in the preceding chapter, items (2), (3), (5) and (8) show mainly growth of the capital scale and items (5), (6) and (7) profitability. And item (4) may be considered to be materials to show reserves.

These data are classified into four categories of all industries, manufacturing industry, electric power industry and transportation and communication industry. The manufacturing industry is subdivided into twelve industries of foods, textile, paper and pulp, chemical, ceramics, iron and steel, nonferrous metals, metal products, machinery, electric appliances, transport equipment and ship building. There exist other industries such as agriculture and fishery, mining, construction, wholesale, retail, real estate, shipping, gas, services and miscellaneous manufacturing. They have their own weight in the whole industries, but they are excluded from this study.

Progress of capital accumulation by industries is shown in Table 2 and the following tables as secondary data based on elementary materials shown in Table 1.

Table 2 deals with four items of tangible fixed assets (which show accumulation of

Table 1. Basic data

the industry	Fiscal Year	Number of enterprises (a billion or more)		Total assets (a billion or more)		Tangible fixed assets (a billion or more)		Net worth (a billion or more)	
All industries	1960	497,206	415	27,965,394	11,867,516	8,806,086	4,953,825	5,782,945	3,193,469
	1965	515,502	827	60,254,725	30,358,776	16,591,769	9,822,622	11,474,289	6,952,823
	1970	874,692	1,185	147,512,681	68,945,200	35,634,400	19,118,289	23,725,822	12,382,963
	1974	1,108,107	1,576	293,909,531	135,376,267	61,466,272	32,221,238	42,123,412	20,096,008
Electric power	1960	15	12	1,880,933	1,875,145	1,639,623	1,634,371	623,991	621,580
	1965	25	19	2,955,757	2,940,981	2,481,656	2,469,445	919,851	915,918
	1970	32	27	4,564,358	4,555,008	3,666,832	3,659,612	1,238,343	1,235,011
	1974	40	32	8,765,173	8,746,913	6,959,246	6,945,626	1,641,343	1,635,755
Transports & correspondence	1960	15,713	26	1,059,976	397,390	537,384	204,143	300,057	139,098
	1965	15,657	55	2,551,598	1,322,869	1,101,644	584,050	625,234	346,991
	1970	27,594	78	5,900,716	2,952,477	2,257,216	1,176,475	1,163,362	584,065
	1974	36,114	92	10,744,284	5,480,657	3,716,598	2,074,710	1,805,534	918,090
Manufacturing industry	1960	163,918	277	13,051,728	6,599,437	4,226,246	2,318,834	3,260,124	1,934,554
	1965	174,962	535	28,129,328	17,087,749	8,120,970	5,128,903	6,498,368	4,420,461
	1970	265,209	743	65,483,514	38,876,079	17,854,889	11,057,844	13,000,437	7,982,671
	1974	309,135	931	117,259,202	68,605,221	28,099,292	17,225,442	21,055,255	12,256,540
Foods	1960	29,625	18	1,060,927	266,635	337,956	94,853	290,829	92,978
	1965	28,720	39	2,219,165	868,286	683,906	282,909	511,887	248,066
	1970	35,482	55	4,188,187	1,510,962	1,202,760	447,161	936,662	420,909
	1974	36,519	79	8,510,903	3,425,125	2,085,466	815,737	1,701,304	781,026
Textile	1960	18,583	21	1,111,357	374,973	388,704	140,465	288,172	151,908
	1965	16,457	29	1,896,914	734,822	530,385	182,972	408,961	200,649
	1970	24,853	42	3,849,614	1,421,851	1,013,197	360,887	745,690	326,459
	1974	26,320	47	6,461,304	2,426,180	1,471,214	490,488	941,313	435,061
Pulp & paper	1960	4,557	16	685,493	293,700	319,197	155,993	132,042	77,298
	1965	5,444	26	1,101,436	584,493	449,638	268,879	200,974	131,635
	1970	7,740	29	2,197,874	1,197,441	815,770	507,927	327,427	184,759
	1974	8,623	35	4,068,559	2,313,603	1,305,675	827,414	579,332	305,435
Chemicals	1960	6,548	69	1,763,343	1,210,892	675,880	508,021	475,273	347,113
	1965	4,969	123	4,116,180	3,144,084	1,369,342	1,088,239	1,042,194	820,898
	1970	9,333	170	8,711,810	6,677,633	2,796,698	2,224,741	1,947,689	1,494,285
	1974	10,726	197	13,701,843	10,491,839	3,760,910	2,997,272	2,961,522	2,235,721
Glass & ceramics products	1960	6,299	11	532,753	234,960	217,847	109,833	158,381	79,210
	1965	6,884	34	1,286,491	782,128	474,600	311,037	333,775	225,577
	1970	10,690	45	2,512,137	1,198,778	821,336	419,588	587,347	343,738
	1974	12,646	59	5,388,914	2,614,954	1,531,656	809,183	1,023,125	574,551

by industries

(Unit: million yen, person)

Turnover	(a billion or more)	Operating income	(a billion or more)	Net income for the year	(a billion or more)	Number of employees	(a billion or more)
45,510,868	12,361,945	2,307,512	959,322	1,401,472	604,310	14,215,938	2,262,125
81,941,293	30,108,380	3,592,424	1,783,789	1,915,534	947,791	15,831,053	3,440,791
213,945,916	75,272,779	10,113,470	4,570,626	6,578,243	2,911,751	22,087,132	4,322,912
440,414,050	168,149,625	19,178,407	7,853,570	11,014,954	3,821,082	24,130,859	4,794,774
493,276	492,944	102,360	102,323	38,982	39,000	136,734	136,482
969,015	967,031	206,261	205,489	86,691	86,815	145,703	145,133
1,800,598	1,797,223	349,935	349,572	173,677	173,606	142,989	142,530
4,075,280	4,059,108	506,075	504,928	141,791	141,134	144,969	144,279
971,992	238,121	91,547	26,576	62,727	19,000	1,038,210	216,835
2,028,943	650,212	162,742	80,665	90,706	44,011	1,336,919	299,477
5,626,810	1,563,038	413,286	192,267	249,270	102,741	1,809,775	353,334
11,118,020	3,044,561	493,563	216,689	240,116	70,720	2,022,352	372,175
16,828,799	5,948,712	1,372,081	671,803	889,151	452,271	7,431,225	1,529,874
30,017,636	13,670,457	1,911,173	1,090,279	989,423	577,446	8,129,081	2,337,920
75,970,347	34,623,974	5,520,676	2,995,742	3,603,430	1,949,086	10,508,994	3,030,978
145,704,797	69,408,394	9,243,834	4,630,341	5,228,104	2,309,198	10,718,866	3,224,971
2,121,156	477,551	107,084	28,894	72,692	22,064	681,988	60,728
3,927,241	1,293,896	177,307	60,295	112,422	41,993	809,680	116,054
7,642,574	2,609,854	380,528	151,047	279,072	126,457	875,285	132,774
14,875,212	5,589,224	778,187	290,128	536,586	214,188	979,450	181,799
1,651,393	408,050	121,061	39,663	71,702	26,970	978,558	173,936
2,434,963	753,552	104,587	36,437	34,991	11,583	868,168	184,800
5,126,408	1,564,196	292,436	98,654	163,331	53,967	957,944	212,935
8,019,131	2,534,590	214,489	96,655	△15,633	235	859,944	192,037
609,477	208,214	36,446	21,078	9,117	9,230	229,448	48,026
1,150,781	430,999	70,544	34,007	25,206	10,093	267,398	67,504
2,430,266	916,834	151,841	75,717	68,429	28,021	282,172	66,902
4,771,071	1,942,574	374,329	167,413	204,697	64,123	273,319	72,846
1,789,362	993,292	181,278	117,511	100,329	62,992	537,462	272,985
3,546,615	2,371,435	329,923	237,283	173,693	120,782	618,582	351,036
7,880,868	5,207,527	775,219	554,214	484,763	335,773	786,740	408,061
14,737,913	9,935,778	1,296,828	890,161	801,612	519,856	719,965	398,980
545,951	168,851	64,594	25,073	47,943	19,879	329,880	35,712
1,050,982	458,902	80,394	43,680	35,043	20,318	355,713	92,395
2,704,679	911,994	215,581	95,367	138,389	66,651	468,229	102,465
5,857,699	2,123,928	485,264	202,518	277,346	109,676	507,345	121,293

the industry	Fiscal Year	Number of enterprises (a billion or more)		Total assets (a billion or more)		Tangible fixed assets (a billion or more)		Net worth (a billion or more)	
Iron & steel	1960	3,576	33	1,625,264	1,341,922	706,030	625,473	483,220	421,373
	1965	4,609	48	3,439,288	2,930,795	1,436,258	1,278,981	860,511	807,396
	1970	6,326	54	7,695,034	6,422,175	3,301,329	2,925,171	1,279,853	1,070,816
	1974	7,335	69	13,155,038	10,796,528	5,069,717	4,482,714	1,817,385	1,455,524
Non-ferro metals	1960	2,326	14	514,508	309,886	153,423	102,649	124,594	89,873
	1965	2,293	20	875,596	583,205	256,325	187,040	184,017	132,529
	1970	2,024	29	1,984,959	1,333,625	594,344	428,185	353,063	258,708
	1974	2,473	42	3,283,473	2,311,005	906,400	684,841	521,246	355,796
Metal products	1960	10,952	0	332,692	0	86,786	0	71,568	0
	1965	18,721	11	1,044,053	173,752	283,694	49,209	229,999	42,795
	1970	32,376	21	2,765,094	435,901	732,245	126,167	553,297	95,051
	1974	41,600	33	5,574,837	1,006,584	1,357,296	272,801	1,097,636	165,029
Machinery	1960	12,508	21	815,855	210,179	178,814	40,366	195,106	63,357
	1965	12,970	45	1,787,893	729,118	366,586	119,083	431,072	213,668
	1970	22,124	72	5,380,258	2,426,619	1,014,065	363,654	1,131,041	517,290
	1974	27,158	84	9,647,199	4,268,893	1,604,010	578,139	1,956,625	865,456
Electrical appliances	1960	7,233	25	1,301,848	955,237	296,076	216,253	329,072	249,414
	1965	7,070	53	2,844,410	2,171,552	548,019	411,148	796,041	646,426
	1970	12,549	83	6,991,788	5,280,566	1,192,472	847,758	1,797,816	1,434,253
	1974	16,790	102	11,201,545	8,037,567	1,726,147	1,109,569	2,760,767	2,155,812
Transport equipment	1960	5,765	17	1,082,881	653,497	259,393	137,067	257,372	183,069
	1965	5,271	35	2,103,306	1,566,441	488,200	336,835	551,972	440,567
	1970	6,108	50	5,162,516	3,941,132	1,317,118	928,229	1,089,544	857,459
	1974	7,298	62	8,367,858	6,108,329	2,050,961	1,430,533	1,887,962	1,485,236
Ship-building industry	1960	1,181	7	393,961	304,392	60,190	45,174	84,320	73,348
	1965	1,305	12	1,567,168	1,452,968	224,370	208,971	251,579	236,612
	1970	1,480	11	3,869,345	3,413,860	412,607	338,571	389,313	362,217
	1974	1,805	13	6,754,409	5,854,707	856,266	701,071	533,064	482,338

Source: Ministry of Finance, Securities Bureau, Division Capital Marketing *Collected Yearbook of Corporation*

production means but are figures in book value subject to their depreciation levels), capital (which means owned capital equal to the total of capital formation by profit reserves and increase of capital), Turnover (which are a growth index indicating vitality of business activities), and net income for the current term (which means ordinary income and shows the current level of recurring business performance). Growth rates by industries are shown in three columns. Column "A" shows growth rates of 1965 on the basis of 1960, and column "B" growth rates of 1970 on the basis of 1965. Column "C" shows

Turnover	(a billion or more)	Operating income	(a billion or more)	Net income for the year	(a billion or more)	Number of employees	(a billion or more)
1,517,225	1,015,098	172,491	135,784	106,274	84,416	482,600	241,182
2,673,175	1,919,668	197,664	176,909	62,296	62,504	511,882	310,181
6,778,663	4,815,172	592,043	470,900	310,395	237,559	594,155	355,033
13,374,477	9,357,164	1,212,936	893,694	606,665	384,626	578,190	356,061
701,250	250,659	50,303	26,220	28,693	14,879	181,699	65,204
879,155	443,227	53,653	35,183	20,819	13,613	156,643	63,619
2,260,799	1,195,929	133,949	83,331	54,100	32,904	185,546	85,777
3,765,374	2,037,296	243,954	131,455	82,734	19,378	172,956	86,947
609,988	0	42,904	0	28,463	0	298,788	0
1,392,065	145,073	87,207	15,854	47,673	8,008	540,007	31,252
4,222,868	398,825	275,351	41,682	184,253	26,289	760,187	44,970
8,081,302	955,367	626,762	86,917	420,976	37,610	844,414	62,438
964,773	164,220	106,809	24,474	75,406	17,419	586,722	65,182
1,862,258	527,432	118,443	45,174	63,230	28,564	644,587	141,360
5,656,418	1,903,801	530,018	200,278	375,119	144,912	930,460	218,003
10,559,311	3,495,671	865,327	301,794	544,381	187,462	975,945	243,416
1,461,581	879,259	163,100	115,207	122,168	86,955	645,790	293,554
2,591,598	1,663,499	195,352	143,672	110,567	82,811	853,739	430,807
8,142,292	5,344,509	724,868	533,791	532,479	402,207	1,290,810	650,325
13,831,921	8,502,565	809,222	561,155	488,799	348,388	1,317,026	637,918
1,152,675	563,343	104,956	58,944	79,865	51,641	508,671	133,002
2,117,928	1,392,828	164,184	119,480	135,429	107,524	499,751	195,990
6,090,319	4,174,240	371,451	270,678	311,825	241,019	675,359	336,394
11,555,608	7,734,712	407,763	226,079	293,046	187,850	760,766	385,171
397,154	294,393	35,480	28,841	24,070	20,504	173,350	74,085
934,968	816,826	51,366	44,553	25,101	21,950	223,286	172,888
2,123,879	1,688,416	169,872	146,126	105,832	92,375	272,814	186,063
3,817,431	3,085,048	237,567	209,334	162,783	150,094	299,965	216,977

Statistics, 1976.

10 years growth rates of 1970 on the basis of 1960. Figures on upper rows of each column are data of all corporations within the industry, and those on lower rows data of large corporations capitalized at one billion yen or more.

Comparison between all industries and manufacturing industry shows a feature that growth of tangible fixed assets and capital in the manufacturing industry, especially of large corporations in the industry, is much higher than that of all industries. More detailed examination of data of the manufacturing industry gives a conclusion that industries,

Table 2. Growth rate by industries

(Unit: %)

	Tangible fixed assets			Net worth			Turnover			Net profit for the year		
	A	B	C	A	B	C	A	B	C	A	B	C
All industries	188 198	215 195	405 386	198 218	207 178	410 388	180 244	261 250	470 609	137 157	343 307	469 482
Electric power	151 151	148 148	224 224	147 147	135 135	199 199	196 196	186 186	365 365	222 223	200 200	446 445
Transports & correspondence	205 286	205 201	420 576	208 250	186 168	388 420	209 273	277 240	579 656	145 232	275 233	397 541
Manufacturing industry	192 221	220 216	423 477	199 229	200 181	399 413	178 230	253 253	451 582	111 128	364 338	405 431
Foods	202 298	176 158	356 471	176 267	183 170	322 453	185 271	195 202	360 547	155 190	248 301	384 573
Textile	137 130	191 197	261 257	142 132	182 163	259 215	148 185	211 208	310 383	49 43	467 466	228 200
Pulp & paper	141 172	181 189	256 326	152 170	163 140	248 239	189 207	211 213	399 440	277 109	272 278	751 304
Chemicals	203 214	204 204	414 438	219 237	187 182	410 431	198 239	222 220	440 524	173 192	279 278	483 533
Glass & ceramics products	218 283	173 135	377 382	211 285	176 152	371 434	193 272	257 199	495 540	73 102	395 328	289 335
Iron & steel	203 205	230 229	468 468	178 192	149 133	265 254	176 189	254 251	447 474	59 74	498 380	292 281
Non-ferro metals	167 182	232 229	387 417	148 148	192 195	283 288	125 177	257 270	322 477	73 92	260 247	189 221
Metal products	327 —	258 256	844 —	321 —	241 222	773 —	228 —	303 275	692 —	168 —	387 328	647 —
Machinery	205 295	277 305	567 901	221 337	262 242	580 817	193 321	304 361	586 1,159	84 164	593 507	498 832
Electrical appliances	185 190	218 206	403 392	242 259	226 222	546 575	177 189	314 321	557 608	91 95	482 486	436 463
Transport equipment	188 246	270 276	508 677	215 241	197 195	423 468	184 247	288 300	528 741	170 208	230 224	390 467
Ship-building industry	373 463	184 162	686 750	298 323	158 153	472 494	235 278	227 207	535 574	104 107	422 421	440 451

Source: Prepared from Table 1.

Note: 1. A=1965/1960, B=1970/1965, C=1970/1960 (Growth rate).

2. The upper row—All industries, The lower row—Corporation with a billion or more yen of capital

in which large corporations attain higher growth rates than average growth rates in respective industries and both growth rates are higher than average rates in the manufacturing industry, are as follows:

Machinery, transport equipment and shipbuilding for the item of tangible fixed assets; Chemical, machinery, electric appliances, transport equipment and shipbuilding for the item of capital;

Machinery, electric appliances and transport equipment for the item of sales; and Chemical, machinery, electric appliances and shipbuilding for the item of net income for the current term.

Table 3. The weight of each industry and the centralization by big corporations in 1970
Fiscal Year

	Total assets			Tangible fixed assets			Operating profit		
	A	B	B/A	A	B	B/A	A	B	B/A
All industries	100%	100%	46.7%	100%	100%	53.7%	100%	100%	45.2%
Electric power	3.1	6.6	99.8	10.3	19.1	99.8	3.5	7.6	99.9
Transports & correspondence	4.0	4.3	50.0	6.3	6.2	52.1	4.1	4.2	46.5
Manufacturing industry	44.4	56.4	59.4	50.1	57.8	61.9	54.6	65.5	54.3
Foods	2.8	2.2	36.1	3.4	2.3	37.2	3.8	3.3	39.7
Textile	2.6	2.1	36.9	2.8	1.9	35.6	2.9	2.2	33.7
Pulp & paper	1.5	1.7	54.5	2.3	2.7	62.3	1.5	1.7	49.9
Chemicals	5.9	9.7	76.7	7.8	11.6	79.5	7.7	12.1	71.5
Glass & ceramics products	1.7	1.7	47.7	2.3	2.2	51.5	2.1	2.1	44.2
Iron & steel	5.2	9.3	83.5	9.3	15.3	88.6	5.9	10.3	79.5
Non-ferro metals	1.4	1.9	67.2	1.7	2.2	72.0	1.3	1.8	62.2
Metal products	1.9	0.6	15.8	2.1	0.7	17.2	2.7	0.9	15.1
Machinery	3.7	3.5	45.1	2.8	1.9	35.9	5.2	4.4	37.8
Electrical appliances	4.7	7.7	75.5	3.3	4.4	71.1	7.2	11.7	73.6
Transport equipment	3.5	5.7	76.3	3.7	4.9	70.5	3.7	5.9	72.9
Ship-building industry	2.6	5.0	88.2	1.2	1.8	82.1	1.7	3.2	86.0

Source: Prepared from Table 1.

- Note: 1. A are all corporations
2. B are big corporations
3. B/A are centralization by big corporations

Table 3 shows the weight of each industry in percentage to all industries. This table adopts the total amount of each side of a balance sheet and tangible fixed assets as items showing capital scale and operating income as one of profitability indexes. The weights as to these items are shown in column "A" for all corporations within respective industry and in column "B" for large corporations of the industry. Column "B/A" in Table 3 shows concentration ratios by large corporations for each of these indexes in respective industry. The reason why sales are excluded from items of the table and operating income therein included is that sales are not always an appropriate item to represent weight of industries since rates of value added are different by types of industries. The year adopted in this table is 1970 which is the end of 1960's. First, industries with high weight of 5 percent or more are extracted from column A (all corporations) as follows:

Chemical and iron and steel for the item of the total amount of a balance sheet; Electric power, transportation and communication, chemical and iron and steel for the item of tangible fixed assets and Chemical, iron and steel, machinery and electric appliances for the item of operating income.

Next, the same from column B are as follows:

Electric power, chemical, iron and steel, electric appliances, transport equip-

ment and shipbuilding for the item of the total amount of each side of a balance sheet;

Electric power, transportation and communication, chemical and iron and steel for the item of tangible fixed assets; and Electric power, chemical, iron and steel, electric appliances and transport equipment for the item of operating income.

Further, industries with high concentration ratios of 70 percent or more shown in column B/A are enumerated as follows:

Electric power, chemical, iron and steel, electric appliances, transport equipment and shipbuilding for the item of the total amount of each side of a balance sheet;

Electric power, chemical, iron and steel, nonferrous metal, electric appliances, transportation and communication and shipbuilding for the item of tangible fixed assets; and

Electric power, chemical, iron and steel, electric appliances, transportation and communication and shipbuilding for the item of operating income.

Finally, average scales per corporation by industries are arranged as shown in Table 4. The items of the total amount of each side of a balance sheet and Turnover as value indexes as well as the items of number of employees are collected as for 1970. The

Table 4. Average scales per corporation by industries in 1970 Fiscal Year
(Unit: million yen, person)

	Total assets		Turnover		Number of employees	
	A	B	A	B	A	B
All industries	169	58,182	245	63,521	25	3,648
Electric power	142,636	168,704	56,269	66,564	4,468	5,279
Transports & correspondence	214	37,852	204	20,039	66	4,530
Manufacturing industry	247	52,323	286	46,600	40	4,079
Foods	118	27,472	215	47,452	25	2,414
Textile	155	33,854	206	37,243	39	5,070
Pulp & paper	284	41,291	314	31,615	36	2,307
Chemicals	933	39,280	844	30,633	84	2,400
Glass & ceramics products	235	26,640	253	20,267	44	2,277
Iron & steel	1,216	118,929	1,072	89,170	94	6,575
Non-ferro metals	981	45,987	1,117	41,239	92	2,958
Metal products	85	20,757	130	18,992	23	3,141
Machinery	243	33,703	256	26,442	42	3,028
Electrical appliances	557	63,621	649	64,392	103	7,835
Transport equipment	845	78,823	997	83,485	111	6,728
Ship-building industry	2,614	310,351	1,435	153,492	184	16,915

Source: Prepared from Table 1.

Note: 1. A are all corporations
2. B are large corporations

columns of A and B are used for the same categories as Table 3.

Superiority of large corporations in scale differentials is very clear and industries with larger scale than the average of the manufacturing industry in indexes of large corporations are as follows:

Iron and steel, electric appliances, transport equipment and shipbuilding for the item of the total amount of each side of a balance sheet; Foods, iron and steel, electric appliances, transport equipment and shipbuilding for the item of Turn-over and

Electric power, textile, iron and steel, electric appliances, transport equipment and shipbuilding for the item of number of employees. For this item, industries with average number of employees more than 5,000 per corporation are enumerated.

Judging from secondary indexes in Tables 2 through 4 heretofore explained, industries typical of capital accumulation by industries in the high growth period are chemical, iron and steel, electric appliances, transport equipment and shipbuilding in the manufacturing industry and electric power in the nonmanufacturing industry. These industries may be those which sustained the reproduction structure in the high growth period developed with an axis of the heavy and chemical industry. Therefore, we have prescribed these six industries as the typical industries and selected individual corporations to be objects of analysis from among these industries.

III Selection of Large Corporations

As already described in the preceding chapter, it can be concluded also from positive data in the Corporate Business Statistics that the high economic growth had been developed with the principal axis of the heavy and chemical industry. Judging from weight in the reproduction structure, these industries not only had sustained economy in Japan, but also had played a locomotive role in the high growth process. Besides, it should especially be noted that largest corporations capitalized at one billion yen or more shown in statistical materials had played important roles in addition to roles of respective industries.

Generally speaking, the weight of the heavy and chemical industry in the reproduction structure becomes more and more remarkable, when it is considered on the level of large corporations. This means that capital accumulation in the field of the heavy and chemical industry has been attained through remarkable accumulation by large industries within the field. Concentration ratios of large corporations reflects this fact above all, and their average scale per corporation in absolute value of business results or number of employees shows that large corporations have decisive superiority in qualitative phases already surpassing quantitative differentials compared with average scales of respective industries.

As stated before, an inductive conclusion from such statistical materials characterizes six industries of electric power, chemical, iron and steel, electric appliances, transport equipment and shipbuilding as typical industries in Japan's high growth period. There-

fore, we decided large corporations to be selected as typical cases of capital accumulation during this period would be selected from among these six industries.

Before entering the task of selecting individual corporations, something is left to be considered. That is the relation around industrial groups (konzern) based on capital tie-up. As well-known, the six largest industrial groups in Japan dispose their key enterprises in each of basic areas of the reproduction structure. These key enterprises exert more or less controlling power, and related industrial groups by respective industries are established with these key enterprises at the zenith. For numerical grasp of capital accumulation by individual monopolies, it is required to calculate capital accumulation within related industrial groups as capital circulation units which include subcontracting smaller enterprises showing common interests by industries and further to calculate the same by Konzern which are individual monopolies as financial capital connecting related industrial groups financially and humanly. This paper does not intend to make such calculation by Konzern but elucidates state of capital accumulation in business by focussing on key enterprises at the apex of the related industrial groups.

According to such way of thinking, therefore, top ranking corporations of respective industries should not be selected as the large corporations to be investigated only by the reason that they are at the top rank. It is needless to say that individual corporations should be selected after understanding relation of concurrence within respective industries and also considering relation among six largest groups responsible for activities of business circles in Japan.

First, Table 5 shows materials on largest five corporations of the six industries by indexes of sales in 1979. Items in this table include the total amount of each side of a balance sheet and number of employees as reference indexes in addition to sales. Besides, materials of the same items are added for the second half of 1971 which may be at the apex of the high growth period.

The electric power industry is characterized by public utility enterprises regionally monopolized, and each corporation does not always belong to any specific capital affiliates. Even in this industry where the corporate ranking seems to be the stablest of all industries, Tohoku Electric Power Co. at the fifth in 1979 was superior to Kyushu Electric Power Co. in both indexes of sales and the total amount of each side of a balance sheet in 1971. Here, it would be the natural conclusion to select Tokyo Electric Power Co. on the top rank, whose service areas include large cities such as Tokyo and Yokohama backed by the Keihin Industrial Area.

Next, the chemical industry is an industry which directly represents heavy and chemical industries. Large corporations in this industry are roughly into inorganic chemical industry and organic chemical industry. In addition, the industry include oil and fat, pharmaceutical, paint and ink and other industries. The ranking by sales does not always agree with ranking by other indexes. It can also be understood that the latest status had considerably changed in comparison with that in the second half of 1971. From among this industry, Mitsubishi Chemical Industries, Ltd. is selected as the top chemical enterprises and the representative of the Mitsubishi group and Sumitomo

Table 5. Largest five corporations of the six industries by indexes of sales (Unit: million yen, person)

	Fiscal Year 1979 (A year)			Fiscal Year 1971 (the second half of the year)		
	Turnover	Total assets	Number of employees	Turnover	Total assets	Number of employees
Electric Power						
Tokyo Electric Power	2,036,194	5,667,652	40,054	298,221	1,540,653	36,879
Kansai Electric Power	1,222,411	3,203,423	23,738	171,979	1,011,311	21,903
Chubu Electric Power	996,540	2,134,964	18,749	138,607	698,665	18,214
Kyushu Electric Power	612,025	1,523,676	15,816	81,507	415,737	16,971
Tohoku Electric Power	600,468	1,359,592	13,943	86,551	447,497	15,338
Chemicals						
Mitsubishi Chemical Industries	658,666	782,695	8,030	121,036	403,533	8,843
Sumitomo Chemical	550,611	537,139	9,849	121,943	328,849	14,892
Mitsui Toatsu Chemicals	405,874	422,598	7,611	68,239	235,613	8,448
Ube Industries	403,570	540,371	9,771	71,529	255,053	11,071
Showa Denko	373,941	462,178	5,453	83,014	305,161	10,632
Iron & Steel						
Nippon Steel	2,844,826	3,335,215	71,722	604,653	2,113,520	82,438
Nippon Kokan	1,311,447	2,377,105	33,639	307,680	1,078,849	42,366
Sumitomo Metal Industries	1,224,635	1,836,640	29,980	213,418	807,053	31,534
Kawasaki Steel	1,147,889	1,706,584	35,098	204,139	775,578	38,964
Kobe Steel	1,024,726	1,306,458	31,164	178,494	571,958	33,415
Electric appliance						
Matsushita Electric Industrial	1,734,463	1,200,124	31,716	407,097	543,815	44,640
Hitachi	1,698,130	1,632,861	71,813	390,754	978,103	86,923
Tokyo Shibaura Electric	1,427,670	1,423,582	63,910	299,666	818,792	70,480
Mitsubishi Electric	1,075,446	1,049,677	48,317	212,750	539,250	55,174
Nippon Electric	719,773	743,171	31,654	119,212	346,652	34,441
Automobile industry						
Toyota Motor	2,802,469	1,440,800	45,267	544,548	536,415	39,912
Nissan Motor	2,738,868	1,710,327	56,747	521,502	886,672	50,464
Honda Motor	1,069,442	606,288	20,875	163,055	251,278	18,027
Toyo Kogyo	835,153	575,508	26,851	140,888	462,862	27,787
Isuzu Motors	635,442	445,536	14,310	93,550	241,963	10,909
Ship-Building Industry						
Mitsubishi Heavy Industries	1,349,264	2,367,548	59,312	355,426	1,504,033	77,579
Ishikawajima-Harima Heavy Industries	691,337	1,398,004	26,546	202,410	932,980	37,021
Kawasaki Heavy Industries	501,506	784,028	25,383	148,990	486,449	31,203
Hitachi Shipbuilding & Engineering	249,609	649,056	16,821	107,348	446,868	24,703
Mitsui Engineering & Shipbuilding	201,181	427,899	11,718	75,720	308,408	14,843

Source: Mitsubishi Allround Institute, *Analysis of business management*, the second half of the F. Y. 1971, F.Y. 1979.

Chemical Co. as the second largest chemical enterprise and the representative of the Sumitomo group. These two corporations hold stable strength as the top group against corporations ranked at the third or below.

From among the iron and steel industry, Nippon Steel Corporation (Shin-Nittetsu) is selected from among five largest integrated steel manufacturers. Although it belongs to none of six largest industrial groups, Nippon Steel is always at the top rank of the industry and forms its own group. It was under the thorough protection and promotion policy by national monopolized capitalism in the prewar history and is commonly acknowledged as an enterprise holding a definite position in business circles activities as an individual enterprise which has no connection with any particular capital group and representing the national standpoint in the postwar days. It may also be a typical enterprise when talking about Japan's economy.

The electric appliance industry is roughly divided into heavy electric appliances industry consisting of industrial electric appliances manufacturers and household electric appliances industry. Matsushita Electric Industrial Co. and Nippon Electric Co. are representative of the household electric appliances industry and other three corporations are positioned as heavy electric appliances manufacturers judging from their major products. Therefore, it has been decided to select one corporation from each of the household and heavy electric appliances industries. There may exist no representative of household electric appliances industry other than Matsushita Electric Industrial Co. which is the top ranking corporation in sales also among all the electric appliances industry. While it has been growing as called Matsushita Konzern, it has connection with the Sumitomo group in a broad sense. However, it is not a member of Hokusui-kai but has strong individuality. This is one of reasons of selection. Hitachi, Ltd. is selected from among the heavy electric appliances sector. Hitachi is also such a large enterprise as forms the Hitachi group. It belongs to Fuyo group, Sanwa group and Daiichi-kangyo group in capital affiliates and it is a member of respective meeting of the groups. The reason of selection is that Hitachi has formal relations with more than one industrial group and it is the top ranking enterprise of the heavy electric appliances sector.

The automobile industry attracts the attention, especially of the world, as a high growth popular industry. Data on Mitsubishi Motor Co. are not shown here, since it is an unlisted corporation. However, any corporation other than the two largest manufacturers of Toyota and Nissan would not be selected as representatives of this industry. These two corporations are leading by large differentials with other automobile manufacturers whose ranking is the third or below. As well-known, Toyota Motor Corporation is the Mitsui affiliate and Nissan Motor Co. the Fuyo affiliate.

Finally, we deal with shipbuilding industry. Judging from materials, it can be understood that the corporate ranking within the industry is very stable both in the present and in the past. Among others, the prominent top rank of Mitsubishi Heavy Industries, Ltd. is by far clear in all indexes. This may be a typical feature of capital accumulation reflecting the growing process of Japan's economy as a Mitsubishi group shipbuilding enterprise which is highly appreciated as "Japanese Ministry of Military

Table 6. Arrangement of nine corporation

	Mitsui Group	Mitsubishi Group	Sumitomo Group	Fuyo Group	Sanwa Group	Daiichi Kangyo Group	Independent Group
Electric Power							Tokyo Electric Power
Chemicals		Mitsubishi Chemical Industries	Sumitomo Chemical				
Iron & steel							Nippon Steel
Electric appliance			Matsushita Electric Industrial	Hitachi	Hitachi	Hitachi	
Automobile industry	Toyota Motor			Nissan Motor			
Ship-building industry		Mitsubishi Heavy Industries					

Source: *Shukan Toyo Keizai*, Extraedition number, Dec. 11, 1980, and Toyo Keizai ed., *Yearbook of Industrial Groupings*, 1981.

Supplies.”

Table 6 shows arrangement of thus selected nine corporations by industries and capital affiliates. Then, the actual state of capital accumulation of thus selected nine mammoth monopolistic enterprises representing Japanese industries will be evolved through the development process of the Japanese capitalism in the following chapter.

IV Actual Status of Capital Accumulation in Large Corporations

1. General

This chapter concretely reviews the growing process of capital accumulation by the selected nine corporations for ten years from fiscal 1963 (basic year) to fiscal 1973. First, a general view of capital accumulation during this period is shown in Table 7. This table covers: (1) absolute amounts of Turnover as a growth index and their growth rates; (2) production capacity per employee as a profitability index by means of indexes reflecting characters of the industry to which each corporation belongs and its growth rate; and (3) Retention in a broad sense as a reserve capacity index, which include both announced retained earnings and internal funds, and their growth rate. For readers' reference, recent amounts of the same items are added from the 1979 settlement.

Some arrangements are required, since closing dates differ by corporations and some P/L items of half-year settlements should be totaled to get annual data. Such arrangements are shown in the note to Table 7.

The production capacity is expressed, according to annual securities reports published by respective corporations, in the maximum output for Tokyo Electric Power of the electric power industry, in annual production of crude steel in tons for Nippon Steel, in monthly production in number of cars for Toyota and Nissan of the automobile industry and in the

Table 7. General view of capital accumulation by big corporation

(Unit: million yen, %)

	Turnover				Production capacity per employee				Retention			
	F.Y. 1963	F.Y. 1973	Growth rates	F.Y. 1979	F.Y. 1963	F.Y. 1973	Growth rates	F.Y. 1979	F.Y. 1963	F.Y. 1973	Growth rates	F.Y. 1979
Tokyo Electric Power	217,828	713,033	327	2,036,194	197.8	521.1	263	764.4	175,112	991,432	566	1,882,197
Mitsubishi Chemical Industries	56,472	339,257	601	658,666	6.95	22.22	320	68.99	26,914	136,411	507	319,810
Sumitomo Chemical	65,206	336,125	515	550,611	4.73	12.66	268	36.95	46,090	186,484	405	285,256
Nippon Steel	443,941	1,855,833	418	2,844,826	190.8	599.9	314	714.7	289,192	1,292,832	447	2,251,092
Matsushita Electric Industrial	202,657	1,040,840	514	1,734,463	7.36	21.00	285	53.69	51,750	449,153	868	697,523
Hitachi	281,692	923,875	328	1,698,130	4.58	10.60	231	20.92	102,587	440,625	430	773,470
Toyota Motor	180,216	1,325,860	736	3,310,181	1.5	4.4	293	5.0	77,186	748,611	970	1,692,244
Nissan Motor	162,895	1,250,611	768	2,738,868	1.3	3.8	292	3.7	70,404	560,689	796	1,229,741
Mitsubishi Heavy Industries	319,391	902,283	283	1,349,264	4.75	15.83	333	22.31	112,863	348,899	309	568,138

Source: Prepared from *Financial statements*

Note: 1. Tokyo Electric Power

Adopted data for fiscal 1963 from settlements at Sept. 1963 and Mar. 1964. Adopted the maximum output (kW) as production capacity.

2. Mitsubishi Chemical Industries

Adopted data for fiscal 1963 from settlements at July 1963 and Jan. 1964. Adopted production by selling prices as production capacity.

3. Sumitomo Chemical

Adopted data for fiscal 1963 from settlements at June 1963 and Dec. 1963. Adopted production by selling prices as production capacity.

4. Nippon Steel

Adopted as data for fiscal 1963 the total of financial data of Yawata Steel and Fuji Steel from settlements Sept. 1963 and Mar. 1964.

Adopted as production capacity crude steel production in tons.

5. Matsushita Electric Industrial

Adopted data for fiscal 1963 from settlements at May 1963 and Nov. 1963. Adopted planned amount of production as production capacity.

6. Hitachi

Adopted data for fiscal 1963 from settlements at Mar. 1963 and Sept. 1963. Adopted planned amount of production as production capacity.

7. Toyota Motor

Adopted data for fiscal 1963 from settlements May 1963 and Nov. 1963. Adopted monthly production in number of cars as production capacity.

8. Nissan Motor

Adopted data for fiscal 1963 from settlements at Mar. 1963 and Sept. 1963. Adopted monthly production in number of cars as production capacity.

9. Mitsubishi Heavy Industries

Adopted as data for fiscal 1963 the total of financial data of Shin-Mitsubishi, Mitsubishi Shipbuilding and Mitsubishi-Nippon from settlements at Sept. 1963 and Mar. 1964. Adopted plant capacity in yen as production capacity.

10. Retention include the total of "other earned surplus" on account of simplification of calculation and, therefore, outflow to the external and retained earnings carried forward to the next period are not deducted.

total amounts of production records, production plans or plant capacity for other corporations. Per capita production capacity is computed by simply dividing these amounts by the total number of employees, that is, aggregate number of workers in direct and indirect departments as of closing dates. Theoretically, comparison restricted to manufacturing departments is necessary and the number of employee should be annual average rather than number as of closing dates. However, that such procedure cannot be made is nothing but restriction of published data.

For simplification of computation, internal reserves are also expressed in the total amount of current unappropriated earnings including outflow to the external and retained earnings carried forward to the next period. Besides, comparison of single-year incrementals is not made, since this is not yearly consecutive computation.

Subject to limitations stated before, Table 7 is reviewed below.

In Items of sales, two automobile manufacturers of Nissan and Toyota show amazing growth by more than seven times and corporations with growth by more than four times follow. These corporations are Mitsubishi Chemical Industries and Sumitomo Chemical of the chemical industry, Matsushita Electric Industrial of the household electric appliances industry and Nippon Steel of the iron and steel industry. Corporations with 1973 sales reaching one trillion yen level are four corporations among selected nine corporations, that is, Nippon Steel, Toyota, Nissan and Matsushita.

Table 8 is a presentation of the international comparison in sales indexes on the basis of consolidated settlements reported in the magazine "President." This table shows remarkable development of capital accumulation in Japanese enterprises during these ten years. Of course, the sales of Nippon Steel, the top ranking corporation in Japan, in 1973 was \$7,628,385,000, while those of General Motors of the USA, the top ranking

Table 8. Japanese corporations rank 100th in the world industries

Fiscal Year	Include U.S.		Exclude U.S.
1963	3 corporations	Hitachi Tokyo Shibaura Electric Yawata Steel	Rank 64 th 87 th 93 rd 14 corporations
1973	11 corporations	Nippon Steel Hitachi Toyota Motor Mitsubishi Heavy Industries Nissan Motor Matsushita Electric Industrial Tokyo Shibaura Electric Nippon Kokan Sumitomo Metal Industries Kobe Steel Kawasaki Steel	16 th 20 th 24 th 30 th 34 th 39 th 52 nd 61 st 74 th 78 th 82 nd 24 corporations

Source: Prepared from *President*, Sept., Oct. 1964, Sept. 1974.

Table 9. Number by countries of 300 corporations of industries in the world (exclude U.S.)

Countries	Number of corporations by ranking				Largest corporation	Turnover (1000\$)	Ranking
	1-100	101-200	201-300	Total			
Argentina	0	1	0	1	YPF (Yacimientos Petroliferos)	1,345,826	104
Australia	0	2	2	4	BHP (Broken Hill Proprietary)	1,300,433	107
Austria	1	0	1	2	VOEST-Alpine	1,511,250	97
Belgium	2	1	1	4	Petrofina	2,042,545	70
Brazil	1	0	0	1	Petrobras (Petroleo Brasileiro)	2,337,552	59
U.K.	15	22	18	55	British Petroleum	7,725,980	4
Canada	3	5	9	17	Alcan Aluminium	1,871,746	74
Chile	0	1	0	1	Codelco Group	1,012,545	142
Finland	0	0	1	1	Neste Oy	502,370	287
France	15	7	9	31	Renault	4,655,696	17
Germany	19	10	12	41	Volkswagenwerk	6,412,056	6
India	0	1	1	2	Indian Oil	794,331	186
Indonesia	0	1	0	1	Pertamina	800,586	184
Iran	1	0	0	1	National Iranian Oil	4,000,000	28
Italy	4	1	3	8	Montedison	4,452,335	19
Japan	24	30	31	85	Nippon Steel	7,628,385	5
Luxemburg	1	0	0	1	ARBED	2,886,126	45
Mexico	1	0	0	1	Pemex (Petroleos Mexicanos)	1,564,432	90
Netherland	4	1	1	6	Philips' Gloeilampenfabrieken	8,108,065	3
Antil (Netherland's territory)	0	1	0	1	Schlumberger	922,292	159
Portugal	0	1	0	1	CUF Group	857,881	173
South Africa	0	1	1	2	De Beers Consolidated Mines	1,324,689	106
Spain	1	2	3	6	Campsa	1,563,039	91
Sweden	1	8	4	13	Volvo	2,064,017	69
Switzerland	4	2	2	8	Nestle	5,205,229	15
Zambia	0	1	0	1	Zimco (Zambia Indust. & Mining)	1,158,771	123
Belgium-France-Germany	0	0	1	1	Glaverbel-Mecaniver	718,123	216
U.K.-Italy	1	0	0	1	Dunlop Pirelli Union	3,274,510	37
Germany-Belgium	0	1	0	1	Agfa-Gevaert Group	831,200	180
Netherland-U.K.	2	0	0	2	Royal Dutch/Shell Group	1,8672,150	1

Source: *President*, extra number, Sept. 1974, p. 191.

Note: 1. Consolidated turnover basis in 1973 F.Y.

2. Conversion rate is average of official exchange rate.

corporation in the world was \$35,798,289,000. This suggests that difference in power between large corporations of Japan and the USA is still remarkable. However, such difference was rapidly narrowed, judging from the fact that the sales of Hitachi in 1963 had been \$1,027,386,000 while those of General Motors had been \$16,494,818,000.

Table 9 shows number by countries of three hundred corporations of mining and manufacturing industries in the world other than the U.S.A. and the names of the top

Table 10. Ranking of turnover

Turnover (exclude wholesaler)			Turnover (exclude wholesaler)		
Ranking	Corporation	million yen	Ranking	Corporation	million yen
	Average of all industries	225,386	11	Nippon Kokan	1,311,447
1	Nippon Steel	2,844,826	12	Sumitomo Metal Industries	1,224,635
2	Toyota Motor	2,802,469	13	Kansai Electric Power	1,222,411
3	Nissan Motor	2,738,868	14	Kawasaki Steel	1,147,889
4	Nippon Oil	2,713,385	15	Mitsubishi Oil	1,103,588
5	Tokyo Electric Power	2,036,194	16	Mitsubishi Electric	1,075,446
6	Matsushita Electric Industrial	1,734,463	17	Honda Motor	1,069,442
7	Hitachi	1,698,130	18	Dai'ei	1,025,939
8	Maruzen Oil	1,442,092	19	Kobe Steel	1,024,726
9	Tokyo Shibaura Electric	1,427,670	20	Chubu Electric Power	996,540
10	Mitsubishi Heavy Industries	1,349,264			

Source: Monthly Statistics, Aug. 1980. p. 10.

Note: 1. Ranking of listed corporation (886 corporation)
2. Turnover is sole financial statement

ranking corporations of respective countries. Although difference between American corporations and Japanese ones is still large, superiority of Japanese large corporations over those of all other countries excluding the U.S.A. was already established in this stage. In 1979, seven corporations among the nine selected corporations grew to trillion yen enterprises. In Japan as a whole, nineteen corporations of listed ones excluding wholesalers have established their position as trillion enterprises as shown in Table 10.

The growth of turnover during this period was attained through remarkable improvement of cost efficiency. The growth rate of per capita production capacity in these ten years as shown in Table 7 exceeds 3.0 times for three corporations and generally marks higher than 2.5 with the exception of 2.3 for Hitachi. This symbolizes an amazing improvement of operation efficiency in these corporations during this period. Even after this period, the chemical and electric appliances industries continued to grow by more than two times data in 1973 until 1979. Although, of course, efficiency of other corporations rises, the pace of efficiency improvement is considerably slower than the above-mentioned corporations. Therefore, it may be understood that these ten years as the object of analysis were the principal axis of technological innovation.

As a result, the growth rate of Retention in a broad sense presented as a reserve index marks the lowest of 3.0 for Mitsubishi Heavy Industries and as remarkably high as 9.7 for Toyota and 8.6 for Matsushita Electric Industrial. It should also be noted that other industries than the chemical industry has the higher growth rate of accumulated internal reserves than the growth rate of sales.

While corporations hereby selected have respective features with their own individuality, the high growth rate of items to be the principal axis of three indexes during this period shows that the capital accumulation of the selected nine corporations progressed on a very

high level. By the way, real gross national products are 35,912,200 million yen in fiscal 1963 and 92,596,800 million yen in fiscal 1973 according to the Economic Planning Agency of Japan. By comparing with 2.58 of the growth rate of GNP during this period computed from the above data, it can be understood that capital accumulation in the large corporations progressed on unusually high levels.

In 1963, Nippon Steel was divided into two corporations of Yawata Steel and Fuji Steel and Mitsubishi Heavy Industries three corporations of Shin-Mitsubishi Heavy Industries, Mitsubishi Shipbuilding and Mitsubishi-Nippon Heavy Industries. Therefore, here is simply adopted the total amounts of data on these divided corporations. This may cause inflated amounts due to double counting or removable assets, so their growth rate may be lower than actual.

In addition, Toyota's sales sector was segregated from Toyota itself but Nissan has no such a system. It should be noted that the difference in the standard of legal accounting units leads to incapability of judging corporate strength simply by absolute value of indexes upon comparing data on both corporations.

2. Meaning of Growth Indexes

Further, we will step to study individual aspects of capital accumulation based on its general understanding.

First, features indicated by growth indexes are searched with a key of Table 11.

Reviewing growth indexes including sales items, cases where items with the highest growth rate in the corporation are other than turnover are the tangible fixed assets in Tokyo Electric Power and the production capacity in Toyota, Nissan and Mitsubishi Heavy Industries. This implies that plant investments precede in such industries as electric power supply, automobile manufacturing and shipbuilding. Accordingly, it may be natural that the sales in 1979 by these corporations except Mitsubishi Heavy Industries continued to grow by more than twice compared with the turnover in 1973. Since tangible fixed assets shown here are counted up in acquisition costs, they are independent of numerical effects by depreciation policy. However, amounts of capital invested to own plants are calculated as the total amounts of outlays at the time of investment and, therefore, they are susceptible to fluctuation in money value.

Comparing growth rates of tangible fixed assets and the total amount of each side of a balance sheet, corporations with higher growth rate of tangible fixed assets are Tokyo Electric Power, Nippon Steel, Toyota and Nissan. This shows that capital accumulation in these four corporations progressed mainly in intracorporate plant investment. In these corporations, the growth rate of production capacity is also higher than that of the total amount of each side of a balance sheet. On the other hand, corporations with higher growth rate of the total amount of each side of a balance sheet are those in which investment to subsidiaries and affiliated corporations and current assets seem to be high in the growth rate. Since Matsushita Electric Industrial and Hitachi Ltd. among these corporations have higher growth rates of production capacity than those of the total amount of each side of a balance sheet, it may be understood that plant investment shown by tangible fixed assets is efficiency increasing investment based on technological innovation rather

Table 11. Growth indexes of big corporations

(Unit: million yen, a person, %)

	Total assets			Production capacity		
	1963 F.Y.	1973 F.Y.	Growth rate	1963 F.Y.	1973 F.Y.	Growth rate
Tokyo Electric Power	687,879	2,064,186	300	6,468	19,421	300
Mitsubishi Chemical Industries	104,496	494,070	473	48,853	192,573	394
Sumitomo Chemical	104,881	403,643	385	57,700	180,191	312
Nippon Steel	742,932	2,270,889	306	15,279	47,159	309
Matsushita Electric Industrial	163,144	723,048	443	202,442	973,479	481
Hitachi	391,310	1,095,502	280	282,546	879,030	311
Toyota Motor	132,810	721,674	543	24,500	189,000	771
Nissan Motor	178,920	986,292	551	23,000	200,000	870
Mitsubishi Heavy Industries	579,307	1,891,257	326	378,319	1,269,000	335

	Tangible fixed assets			Number of employees			
	1963 F.Y.	1973 F.Y.	Growth rate	1963 F.Y.	1973 F.Y.	Growth rate	1979 F.Y.
Tokyo Electric Power	785,375	2,666,321	340	32,705	37,271	114	40,021
Mitsubishi Chemical Industries	65,532	281,228	428	7,030	8,665	123	8,000
Sumitomo Chemical	81,131	279,259	344	12,189	14,233	117	9,826
Nippon Steel	621,020	2,125,733	342	80,086	78,614	98	71,669
Matsushita Electric Industrial	47,384	167,595	354	27,513	46,360	169	31,684
Hitachi	155,290	389,373	251	61,684	82,940	134	71,785
Toyota Motor	78,082	584,532	749	15,999	42,892	268	47,064
Nissan Motor	67,656	522,555	772	17,306	52,008	301	56,702
Mitsubishi Heavy Industries	145,530	425,937	293	79,606	80,183	101	59,269

Source: Prepared from *Financial statements*.

Note: 1. Refer to Note of Table 7.

2. Tangible fixed assets are counted up in acquisition costs.

than increase in amounts of money.

Here is additional information on Mitsubishi Heavy Industries. Its production capacity restricted to shipbuilding shows growth of 505% from 39,003 million yen for the first half of 1963 to 197,000 million yen for the first half of 1973. It should be noted that this growth rate is below that of automobile manufactures but it surpasses greatly growth rates of corporations belonging to other industries including electric appliances manufacturing. This high growth rate was connected to the emerging problem of excessive capacity in the shipbuilding industry on the occasion of crisis during 1970's.

Although numbers of employees increased during this period in the eight corporations except Nippon Steel, the rates of increase was very low except those in the automobile

industry. Besides, manpower saving investment under the name of "lightweight operations" had been forced on the occasion of crisis during 1970's. In the light of numbers of employees for 1979, it may be shown that all the corporations except Tokyo Electric Power and automobile manufacturers of Toyota and Nissan proceeded with manpower reduction, and operation of the "lightweight policy" was backed up.

3. Meaning of Profitability Indexes

This subchapter analyses profitability from the per capita production capacity shown in Table 7 and items shown in Table 12.

Items of ordinary earnings are generally susceptible to particularity in years of accounting. In case of process industries common to large enterprises, the profit performance may be reversed by changes in levels of operating rates or other circumstances. Typical enterprises of this nature are electric power suppliers and steel manufacturers. In case of Tokyo Electric Power and Nippon Steel, therefore, it cannot be said that the growth rate shown by this item has so much meaning. In case of other corporations, however, the growth rate shown here can be utilized as a profitability index by its own,

Table 12. Profitability indexes of big corporations

(Unit: million yen, %)

	Ordinary earnings for the year			Ratios of Gross Profit to net sales			Rate of export dependence		
	1963 F.Y.	1973 F.Y.	Growth rate	1963 F.Y.	1968 F.Y.	1973 F.Y.	1963 F.Y.	1968 F.Y.	1973 F.Y.
Tokyo Electric Power	23,147	△4,528	△20				—	—	—
Mitsubishi Chemical Industries	3,614	9,615	266	19.4 19.7	14.1 12.8	14.8 15.1	?	7.1 6.4	8.9 7.5
Sumitomo Chemical	2,462	11,384	462	22.2	20.5	17.6 17.8	12.7 10.6	10.0 9.5	9.7 9.0
Nippon Steel	27,459	131,602	479	17.6 20.9 16.3 18.3	17.1 18.4 16.3 16.6	19.0 16.7	16.9 15.8	27.0 25.3 20.7	26.2 28.8
Matsushita Electric Industrial	21,279	90,525	425	32.8 34.0	35.1 37.0	29.0 28.9	7.1 7.8	14.1 15.8	19.3
Hitachi	20,839	77,773	373	25.3 25.1	24.4 25.5	26.0 25.5	13 9	9 10	15 15
Toyota Motor	25,977	106,450	410	18.7 18.8	16.6 15.8	15.9 12.4	8.9 10.8	18.3 19.8	23.5 22.4
Nissan Motor	22,271	83,719	376	20.3 21.7	18.9 18.2	20.1 18.6	11.5 12.7	15.3 18.4	29.7 29.1
Mitsubishi Heavy Industries	20,844	75,376	362	13.3 13.2 13.3 15.4 13.2 13.9	11.7 11.7	17.1 13.5	9.9 7.8 91.0 75.8 (23.7 16.3)	21.3 14.5	29 29

Source: Prepared from *Financial statements*

Note: 1. Refer to Note of Table 7.

2. The upper row are the first half of the fiscal year, the lower row are the second half of the fiscal year.

3. The upper row of Nippon Steel are Yawata Steel, the lower row are Fuji Steel, left row are the first half of the fiscal year, right row are the second half of the fiscal year.

4. The upper row of Mitsubishi Heavy Industries are Shin-Mitsubishi, center row are Mitsubishi Shipbuilding, lower row are Mitsubishi Nippon, left row are the first half of the fiscal year, right row are the second half of the fiscal year.

since it has not so remarkable abnormality in the light of transition of ordinary earnings continuing before and after the year of accounting. Corporations with lower growth rate of ordinary earnings compared with growth rate of per capita production capacity are restricted to Tokyo Electric Power and Mitsubishi Chemical Industries. Corporations with higher growth rate of ordinary earnings compared with growth rate of sales are Nippon Steel, Hitach Ltd. and Mitsubishi Heavy Industries. This shows that they have high efficiency in ordinary operation results.

Besides, transition in ratios of gross profits to net sales, though these data are insufficient for proper judgment, shows that the ratios of Mitsubishi Chemical Industries, Sumitomo Chemical, Matsushita Electric Industrial, Toyota and Nissan have tendency of declining after remaining flat. In order to realize increase of sales under the cost-saving effect through enlarging plant investment and suppressing personnel increase, stabilization of selling prices was an important assumption in spite of rise in costs for manpower and materials. This assumption may be verified by the fact that, although the wholesale price indexes shown in Table 13 steadily indicate the tendency of a slight increase in the total average, indexes of such items as iron and steel, electric appliances, automobiles, chemical products and petroleum products shows even falls. By the way, wage indexes rise by four times during this period.

Such situation insures growth of absolute amounts of earnings due to extension of the operation scale shown by growth indexes in spite of the tendency of leveling-off or decline

Table 13. Wholesale price indexes (include wage indexes) (1975=100)

Year	average	Iron & steel	Electrical appliance	Transport equipment	Chemical products	Petroleum· Coal products	(Wage)
1960	56.1	70.7	97.0	83.5	68.0	33.1	13.7
1961	56.7	68.8	92.2	82.8	66.0	31.6	15.6
1962	55.8	64.3	88.4	82.6	63.4	30.6	16.8
1963	56.7	63.7	85.8	82.2	62.4	30.5	18.7
1964	56.9	64.1	85.2	81.0	63.1	30.2	20.7
1965	57.3	63.0	85.9	80.5	63.1	30.6	22.4
1966	58.7	64.1	86.7	80.1	61.4	30.2	25.1
1967	59.7	65.8	86.1	79.3	60.6	30.0	28.5
1968	60.3	61.5	85.5	78.4	59.5	30.2	32.6
1969	61.5	65.1	84.7	77.2	59.0	29.4	38.2
1970	63.8	70.9	84.8	77.3	59.6	30.0	45.1
1971	63.3	66.4	82.0	77.3	59.2	33.7	51.1
1972	63.8	68.0	80.5	77.5	59.1	33.4	59.3
1973	73.9	78.4	82.0	79.2	66.7	36.1	73.3
1974	97.1	103.5	97.3	95.2	95.5	82.3	93.3
1975	100.0	100.0	100.0	100.0	100.0	100.0	102.5
1976	111.9	119.4	95.8	101.5	109.0	116.0	140.8

Source: Economic Planning Agency, *Economic Survey of Japan*.

Note: Wage indexes are manufacturing industry.

of ratios of gross incomes to net sales. If, however, stagnation in demand emerging as a result of the setback of high economic growth takes place along with the steep rise in costs of materials and energy, there may be no solution but manpower cutdown.

Besides, the eight corporations except Sumitomo Chemical were more and more enlarging the export dependence which is rate of exports to sales. Among others, a steep rise in the dependence should be noted in the automobile, shipbuilding and iron and steel industries. The electric appliances industry was also depending considerably on exports. Considering that this is a rise in the export dependence under the rapid growth of sales, the growth of exports may be very large. Accordingly, this is obviously the development of capital accumulation in the manner causing trade friction.

4. Meaning of Reservation Capacity Indexes

This subchapter studies, from materials contained in Table 14, how to review from the standpoint of the source of corporate capital the development of capital accumulation shown by growth indexes and profitability indexes.

First, growth rates of Owners' equity and borrowing are compared in order to observe weight of fund raising by borrowing. Then, growth of capitalization by borrowing is higher than that by Owners' equity in the five corporations except Matsushita Electric Industrial, Hitachi Ltd., Toyota and Nissan. Also in comparison of absolute amounts for 1973, borrowing surpasses Owners' equity in five corporations except those belonging to the electric appliances and automobile industries. This means that the role of capitalization by borrowing is still high in the industries other than electric appliances and automobile. While capitalization by capital increase also prevails, both absolute amounts and growth rates of legal capital exceeds those of borrowing only in Matsushita Electric Industrial and Toyota. Other corporations still choose capitalization by borrowing rather than capital increase.

Comparing with internal reserves in Table 7, however, a corporation with higher growth rate of borrowing is only Mitsubishi Chemical Industries. Then, there arises important meaning that fund raising by internal reserves exceeds raising by borrowing. The comparison also indicates that corporations with balance of borrowing exceeding absolute amounts of internal reserves are Mitsubishi Chemical Industries and Mitsubishi Heavy Industries and roles of fund raising by borrowing are decisively important to these two corporations. In other corporations, that is, mainly four corporations belonging to the automobile and electric appliances industries and also steel and electric power corporations, the weight of Owners' equity and internal funds is already higher than that of borrowing.

Secondly, growth of accumulated voluntary reserves as retained from earnings and legal capital is compared and it is found that a corporation with higher growth rate of legal capital is only Sumitomo Chemical. Therefore, the growth of stated profit reserves in large corporations is larger than that of capital increase. However, corporations holding voluntary reserves exceeding legal capital on the levels of absolute amounts for 1973 are only three corporations of Matsushita Electric Industrial, Toyota and Nissan. These corporations increased voluntary reserves by ten times during these ten years. The

Table 14. Reservation capacity indexes of big corporations (accumulation and centralization of corporated capital) (Unit: million yen, %)

	Owners' equity			Borrowing			legal Capital			Voluntary reserve		
	1963 F.Y.	1973 F.Y.	Growth rates	1963 F.Y.	1973 F.Y.	Growth rates	1963 F.Y.	1973 F.Y.	Growth rates	1963 F.Y.	1973 F.Y.	Growth rates
Tokyo Electric Power	201,245	390,264	194	234,739	665,740	284	120,000	300,000	250	2,284	20,358	891
Mitsubishi Chemical Industries	23,635	62,800	266	47,835	260,165	544	15,148	38,851	256	2,740	11,110	405
Sumitomo Chemical	27,169	66,938	246	41,114	154,086	375	16,800	44,974	268	4,170	8,540	205
Nippon Steel	234,967	337,004	143	300,461	1,176,964	392	171,921	230,000	134	18,729	31,136	166
Matsushita Electric Industrial	65,310	324,708	497	7,609	8,850	116	33,750	45,750	136	18,960	215,000	1,134
Hitachi	126,727	272,010	215	135,104	244,707	181	78,750	126,464	161	11,800	79,700	675
Toyota Motor	69,174	350,479	507	20,715	994	5	25,500	48,759	191	18,230	232,500	1,275
Nissan Motor	63,982	284,001	444	60,969	266,250	437	23,100	50,634	219	12,602	150,022	1,190
Mitsubishi Heavy Industries	117,631	190,811	162	213,725	549,933	257	76,017	105,708	139	20,425	45,400	222

Source: Prepared from *Financial statements*.

Note: 1. Refer to Note of Table 7.

2. Borrowing are total of short-term and long-term.

3. Voluntary reserve of Tokyo Electric Power is not appropriated but adopted legal earned reserve.

Table 15. Reservation capacity indexes of big corporation (latent assets and external investment) (Unit: 1000 m², million yen, %)

	Lands			Negotiable securitise			Investments					
	1963 F.Y.	1973 F.Y.	Growth rates	1963 F.Y.	1973 F.Y.	Growth rates	A	1963 F.Y.	1973 F.Y.	Growth rates	B	C
Tokyo Electric Power	123,752	135,880	110	9,089	620	7	3.06	17,208	100,807	586	4.88	33.60
Mitsubishi Chemical Industries	5,160	9,194	178	0	25,489	—	229.42	18,637	61,283	329	12.40	157.74
Sumitomo Chemical	3,898	7,473	192	859	9,161	1,066	107.27	14,304	82,747	578	20.50	183.99
Nippon Steel	35,837	63,222	176	18,243	113,541	622	364.66	99,497	197,417	198	8.69	85.83
Matsushita Electric Industrial	2,131	3,552	167	0	4,067	—	1.89	17,998	278,945	1,550	38.58	609.72
Hitachi	14,726	16,895	115	6,713	121,207	1,806	152.08	53,227	152,290	286	13.90	120.42
Toyota Motor	3,241	12,502	386	0	37,795	—	16.26	21,449	157,327	733	21.80	322.66
Nissan Motor	2,284	9,535	417	0	83,071	—	55.37	14,199	190,193	1,339	19.28	375.62
Mitsubishi Heavy Industries	7,590	10,698	141	12,563	185,578	1,477	408.76	24,518	225,591	920	11.93	213.41

Source: Prepared from *Financial statements*.

Note: 1. A=Negotiable securities/Voluntary reserves (1973F.Y.).

2. B=Investments/Total assets (1973F.Y.).

3. C=Investments/legal Capital (1973F.Y.).

4. Refer to Note of Table 7.

capital accumulation in the household electric appliances and automobile industries marks remarkable growth rates and high absolute amounts not only in internal funds but also stated profit reserves.

Finally, Table 15 is scrutinized which shows levels of latent assets and external investment. Land as typical latent assets grows on a large scale in Nissan and Toyota. Incrementals in area are in the order of Nippon Steel, Tokyo Electric Power, Toyota and Nissan. I would not say that all cases of land acquisition are for speculation, but there may be some cases of speculative acquisition in anticipation of remodeling of the Island of Japan in the light of the then current.

It should be noted that, since negotiable securities are a typical manner of holding extra-funds, they grow in all the corporations other than Tokyo Electric Power. The level of holding negotiable securities is shown by their ratio to voluntary reserves (see column A). The ratio exceeds 100% in Mitsubishi Chemical Industries, Sumitomo Chemical, Nippon Steel, Hitachi Ltd. and Mitsubishi Heavy Industries. These corporations hold and employ amounts exceeding stated profit reserves as funds available at any time.

Investment is not intracorporate plant investment but it is classified into exterior investment to subsidiaries and affiliates and investment securities. The latter cannot be discriminated from negotiable securities, because the title of account changes by transferring long term holding to short term holding. This paper does not deal with such a matter and growth rates of investment and tangible fixed assets are compared.

The growth rate of investment is high in Tokyo Electric Power, Sumitomo Chemical, Matsushita Electric Industrial, Hitachi Ltd., Nissan and Mitsubishi Heavy Industries. Absolute amounts of investment exceed acquisition value of tangible fixed assets only in Matsushita Electric Industrial. Corporations holding balance of the investment account more than 150 billion yen for 1973 are Nippon Steel, Matsushita Electric Industrial, Hitachi Ltd., Toyota, Nissan and Mitsubishi Heavy Industries.

Corporations holding investment exceeding amount of legal capital (see column C) are the seven corporations except Tokyo Electric Power and Nippon Steel. Further, corporations holding investment more than 20% of the total amount of each side of a balance sheet (see column B) are Sumitomo Chemical, Matsushita Electric Industrial and Toyota (Nissan is also at nearly 20%). Intensive use of subsidiaries and affiliates may be a kind of reflection against the fact that the electric appliances and automobile industries are main.

Some investment accounts may have much latent profit according to the actual state of associated corporations. In other words, accumulation as growth of internal reserves in subsidiaries and affiliates does not appear in accounts of the parent corporation, since the invested outlays are listed as it has been on the cost basis. While the actual state can be clarified through individual analysis of the subsidiaries and affiliates, this paper has no intention to do so.

The above-mentioned are multilateral analysis using published accounting data on capital accumulation of the nine corporations selected as individual large enterprises.

Summary

The subject of this paper is to measure and investigate capital accumulation in Japanese large enterprises in the period of high economic growth.

First, the concept of capital accumulation in enterprises has been clarified. The conclusion is to calculate accumulation of corporate capital through economic analysis of financial statements by adding, to profits, internal funds which relate to expenses but for which no outlays are required.

Secondly, assumptions to select corporations are that they are positioned at the industries having high capital accumulation and that they belong to major capital affiliates. As a result, nine corporations from six industries have been selected. They are Tokyo Electric Power Co. from the electric power industry, Mitsubishi Chemical Industries, Ltd. and Sumitomo Chemical Co. from the chemical industry, Nippon Steel Corporation from the iron and steel industry, Matsushita Electric Industrial Co. and Hitachi Ltd. from the electric appliances industry, Toyota Motor Corporation and Nissan Motor Co. from the automobile industry and Mitsubishi Heavy Industries, Ltd. from the shipbuilding industry.

Of course, these industries are the prop of the high economic growth of Japan which has been developed around heavy and chemical industries.

Thirdly, materials of the nine corporations are investigated for ten years from fiscal 1963 as the basic year to fiscal 1973. Contents of capital accumulation are analyzed by means of three indexes, that is, growth indexes, profitability indexes and reservation capacity indexes. As a result, the actual status of capital accumulation on the high level has been confirmed without exception, even though it displays individual characters by industries at which each enterprise is positioned.