

THE KYOTO UNIVERSITY ECONOMIC REVIEW

MEMOIRS OF THE GRADUATE SCHOOL OF ECONOMICS
KYOTO UNIVERSITY

VOLUME LXVIII NUMBER 1/2 (APRIL/OCTOBER 1999) WHOLE NUMBER 144/145

General Price Level Adjusted Financial Accounting Data of Large Companies in Japan, U.S.A., U.K. and Germany for 40 Years — Net Income, Equity and Equity Ratios —

by Bunji NAKAI*

I Introduction

In Japan, accounting for changing money value (general price level adjustment accounting or stabilized accounting by the purchasing value maintenance) (hereinafter referred to as "GPLA") has not been institutionalized. Or it may be correct to say that there is no prospect of institutionalizing it at present. Accordingly, there have been few trials which concretely show effects caused by inflation on corporate accounting upon application of GPLA, and its experimental application to published financial statements by corporations themselves has not been attempted (at least we have not acknowledged published materials on such basis) and application cases and empirical studies outside corporations are also very few¹⁾.

* Professor, Graduate School of Economics, Kyoto University.

1) Aside from the author's papers referred to later, the following papers are available: Ikeda, T., "Broken Compass for Management—Modify the Course by 'Adjustment Accounting'", *Nikkei Business*, September 16, 1974, p.38 (in Japanese).

"Inflation Adjusted Accounting! (First Release in Japan)—Great Upheaval: 'True and Right Income' for Seventy Leading Companies", *Weekly Daiyamondo*, September 4, 1976, pp.30-40 (in Japanese).

Takeda, R., "A Quantitative Analysis about Effects of Inflation on Corporate Accounting", *Kigyo Kaikei*, Vol. 32, No. 8, August 1980, pp.142-169 (in Japanese).

In the United States of America ("U.S.A."), it had been mandatory, in principle, to apply GPLA (as supplementary information) by "Financial Reporting and Changing Price", Statement of Financial Accounting Standards (SFAS) No. 33 (1979) by the Financial Accounting Standards Board (FASB) since 1979 until SFAS No.82 (1984) permitted the voluntary application of GPLA and consequently GPLA was not applied in effect, in the corporate accounting practice (even prior thereto, a number of large corporations had voluntarily applied GPLA). There were reported a number of empirical studies including early cases of experimental trials²⁾.

In the United Kingdom ("U.K."), there had been many cases of voluntary application of GPLA as supplementary information on financial statements by a number of large companies, GPLA adjustment data of financial statements of listed companies by some securities companies and empirical studies, before the publication of the so-called Sandilands Report (1975) partly thanks to moves to institutionalize GPLA.

In the Federal Republic of Germany (West Germany, hereafter "Germany"), it may be right to say that GPLA has been quite ignored both theoretically and institutionally and also that we can find no cases of application of GPLA as well as its empirical studies.

From both domestic and overseas application cases of GPLA as mentioned above, it can be recognized that, except GPLA restated data published by corporations themselves, empirical studies generally center on the net income restatement on the short term, and that empirical studies covering restatement of balance sheet (B/S) items (total assets and total capital) and/or those including restatement on the long term are very scarce.

Formerly, we have tried the formularization of GPLA (Ledger Account Adjustment Method)³⁾, of which a method (financial statements adjustment method by the progressive and income/loss sub-method) was used for "restatement of net income" (real net income calculation - the term "real value" hereinafter means the value adjusted by applying GPLA) in large companies of Japan⁴⁾ and Germany⁵⁾. Since, there-

2) Jones, R. C., *Price Level Changes and Financial Statements—Case Studies of Four Companies*, 1955; Hendriksen, E. S., *Price-level Adjustments of Financial Statements—An Evaluation and Case Study of Two Public Utility Firms*, 1961

3) Nakai, B.[1975b] "Structure of Computations in General Price Level Accounting (1)—Formularization of Ledger Account (all transactions) Adjustment Method," *Kaikei*, Vol.108, No.4, October 1975 (in Japanese).

4) Nakai, B.[1975a] "Accounting Incomes Adjusted by a Formula of Stabilized Accounting," *Oikonomika*, Vol.12, No.2, September 1975 (in Japanese), Nakai, B.[1977b] "General Price Level Adjusted Incomes of Large Enterprises in Japan," *Oikonomika*, Vol.14, No.2, September 1977, (in Japanese).

5) Nakai, B.[1977a] "An Application of Stabilized Accounting to the Financial Data of Some Large West German Companies," *Kaikei*, Vol.111, No.4, April 1977 (in Japanese).

6) Nakai, B.[1980] "Earned Surplus in Stabilized Accounting," *Oikonomika*, Vol.17, No.2, September 1980 (in Japanese).

7) Nakai, B.[1983] "An Application of Stabilized Accounting to the Financial Data of Large British Companies in 1949 - 1977," *Oikonomika*, Vol.20, No.1, June 1983 (in Japanese), Nakai, B.[1987a] "An Application of Stabilized Accounting to the Financial Data of American Manufacturing Companies by Asset Size in 1956 - 1985," *Oikonomika*, Vol.24, No.1, September 1987 (in Japanese), Nakai, B.[1987b] "An Application of Stabilized Accounting to the Financial Data of Japanese Large Companies in 1950 - 1985," *Oikonomika*, Vol.24, No.2, November 1987 (in Japanese), Nakai, B.[1989] "General Price-Level Adjustment Data of the Financial Statements of German Large Corporations in 1950 - 1986," *Oikonomika*, Vol.26, No.2, December 1989 (in Japanese).

after, preparation of the earned surplus adjustment formula⁶⁾ facilitated restatement of the total liabilities and net equity (the total value of credit side of a B/S), the adjusted equity and equity ratio and the like of large companies in Japan, U.S.A. U.K. and Germany have been also shown in addition to the adjusted net income⁷⁾.

This paper is to make a comparative study on GPLA adjusted data of accounting items such as the “net income,” gross capital” and “equity ratio” of the above-mentioned countries for about forty years after the World War II by adding revisions including extension of adjustment-calculation term to the application-examples of GPLA adjusted data of such companies which were developed in our previous paper.

II Basic Materials, Formulas of GPL Adjustment Calculations and Related Matters for GPL Adjustment of Financial Statements of Large Companies in Japan, U.S.A., U.K. and Germany

1. *Object of GPL adjustment calculation*

[Japan] Financial data (semiannual data for adjustment calculation without summing-up to a year basis) from the first half of 1950 accounting year to the second half of 1990 in “all industries” (mainly listed companies on the first section of the TokyoStock Exchange except banking and insurance companies) as shown in *Kigyo Keiei no Bunseki* by Mitsubishi Research Institute, Inc.

[U.S.A.] Financial data (quarterly data for adjustment calculation without summing-up to a year basis) from 1948 to 1990 of manufacturing companies with the total assets of one hundred million US dollars or more as shown in *Quarterly Financial Report for Manufacturing, Mining and Trade Corporations* by the U.S. Federal Trade Commission.

[U.K.] Financial data mainly of listed companies (except data of banking, insurance, ocean transport and real estate companies) from 1949 to 1990 as shown in *Business Monitor Corporate Finance and Annual Abstract of Statistics*.

[Germany] Financial data from 1950 to 1990 of mining and manufacturing companies shown in “Bilanzen und Erfolgsrechnungen (Jahresabschlüsse) von Aktiengesellschaften” in *Wirtschaft und Statistik* (till 1980) and “Fachserie 2 Unternehmen und Arbeitsstätten Reihe 2.1 Abschlüsse der Aktiengesellschaften (since 1981) by the German Statistic Governmentoffice.

The above-mentioned data by country (hereinafter referred to as “original materials”) differ from country to country in the beginning year of adjustment calculation. Materials prior thereto were not available and could not be traced back before then. The data referred to above become unpublished since 1991 in “U.K.” and since 1992 in “Germany”. Therefore, comparison among “Japan”, “U.S.”, “U.K.” and “Germany”. was inevitably limited up to 1990.

2. *General price level indices applicable to adjustment calculation*

[Japan] GNP (Gross National Expenditure) deflators (general) under the current new SNA (System of National Accounts) developed by the Economic Planning Agency

of Japan with the average index for 1970 as 100. Since materials were not available, however, the old GNP deflators were substituted for the new deflators from the second quarter (April to June) of 1951 to 1964 and the general consumer price indices until the first quarter (January to March) of 1951.

[U.S.A.] GNP deflators (general) with the average index of 1972 as 100.

[U.K.] Retail commodity price indices with the price level on January 15, 1974 as 100.

[Germany] Indices of living expenses for employees with four family members in the middle-income stratum without adjusting seasonal fluctuations with the average index for 1970 as 100.

The GNP deflator showing the virtual money purchasing power in the national economy as a whole is considered most suitable as the general price level index to apply to adjustment calculation. For "U.K." and "Germany", however, their respective GNP deflators fully covering the term of adjustment calculation in this paper are not available, so the indices referred to above had to be substituted respectively.

Since the period of adjustment calculation, meanwhile extends to as long as approximately 40 years, the base years for original indices changed several times in every country for this study. Here, however, such "base years" have been uniformly converted to the specific "base year" referred to above (for example, 1970 for Japan).

3. *Formula of Adjustment Calculation and its description*

Adjustment calculation is made under the following formulas (and symbols):

X_0 : Amount shown on the balance sheet (B/S) of a company upon its foundation (in this paper, beginning of the period when adjustment calculation starts due to restriction of the "original materials") (initial amount)

X_i : Amount on the B/S closed at the end of the i -th year and amount on the profit and loss statement (P/L) for the i -th year in nominal capital accounting,

$\bar{X}_i$: Amount on the B/S closed at the end of the i -th year and amount on the P/L for the i -th year in general price level accounting

X_i^j : An amount obtained by converting X_i to the general price level at the end of the j -th year; X_i^i is equivalent to X_i .

$\bar{X}_i^j$: An amount obtained by converting $\bar{X}_i$ to the general price level at the end of the j -th year; $\bar{X}_i^i$ is equivalent to $\bar{X}_i$.

p_{in} : General price level index at the end of the i -th year

p_{ia} : General price level index on the average of the i -th year

$p_{i\lambda}$: Depreciation adjustment index for the i -th year (annual average general price index for the year earlier by λ -year from the i -th year)

The net income adjustment formula by the progressive and income/loss method is:

Table A Transition of General Price Level Indices, etc. in Japan, U.S.A., U.K. and Germany.

	Japan	U.S.A.	U.K.	Germany
Base point of time	1970 average	1972 average	January 15, 19749.	1970 average
End of 1950	39.6	55.2	34.8	65.2
End of 1955	53.6	61.4	46.2	72.2
End of 1960	63.3	69.0	50.6	78.3
End of 1965	80.8	75.0	59.5	90.9
End of 1970	104.4	93.0	75.6	101.2
End of 1975	165.1	129.0	146.0	136.5
End of 1980	201.3	185.1	275.6	165.6
End of 1985	213.7	232.7	378.9	197.4
End of 1990	225.3	276.1	512.5	211.8
The average in the term of October through December (4th quarter) of each year in Japan and the U.S.A or the average in December of each year in the U.K. and "Germany". is adopted as an index at the end of each year.				
End of 1990/end of 1950	5.69	5.01	14.73	3.25
End of 1990/end of 1970	2.16	2.97	6.78	2.09
End of 1990/end of 1980	1.12	1.49	1.86	1.28
Period with the maximum ratio of price level as compared with the previous year and the ratio in the term	2nd quarter of 1974 121.31	1st quarter of 1975 111.57	Average in 1975 124.9	End of 1973 107.2
Period with the minimum ratio of price level as compared with the previous year and the ratio in the term	2nd quarter of 1958 96.17	1st quarter of 1961 100.63	Average in 1961 100.9	End of 1953 97.8
Maximum and minimum ratios of indices as compared with the previous year over the period of 40 years are based on comparison solely among indices used in this paper (an average index in each quarter in Japan and U.S.A. and an annual average index and an average index in December in U.K. and the Germany)				
Annual average ratio of increase				
1950-1990	4.44	4.11	6.96	2.99
1970-1990	3.92	5.59	10.04	3.76
1980-1990	1.13	4.08	6.40	2.49

Real income (adjusted income) $\bar{P}$ = Nominal income P + Revenue shortage(difference) - Expense shortage(difference) + Profit on money value change (Purchasing power profit) - Loss on money value change (Purchasing power loss) ⁸⁾

This formula is shown as follows when the above-mentioned symbols are used:

$$\bar{P}_i = P_i + \left[V_i \left(\frac{P_{in}}{P_{ia}} - 1 \right) - \left\{ W_i \left(\frac{P_{in}}{P_{ia}} - 1 \right) - G_i \left(\frac{P_{in}}{P_{ia}} - 1 \right) \right\} \right] + \left[\left\{ C_{i-1} \left(\frac{P_{in}}{P_{i-1,n}} - 1 \right) + (C_i - C_{i-1}) \left(\frac{P_{in}}{P_{ia}} - 1 \right) \right\} - \left\{ D_{i-1} \left(\frac{P_{in}}{P_{i-1,n}} - 1 \right) + (D_i - D_{i-1}) \left(\frac{P_{in}}{P_{ia}} - 1 \right) \right\} \right] \dots (1)$$

For revenue V and expense W except depreciation expenses, only an annual total transaction amount is shown on the original data (B/S, P/L), in principle. Therefore, these items are adjusted with annual average index P_{ia} , as if the transactions were occurred on the average during the year.

Depreciation G is supposed to be totally period costs and even any asset acquired at a midterm is depreciated for the full term. (On the other hand, any asset removed at a midterm is not depreciated for the term.) With an assumption that depreciation is computed on the straight-line method or the fixed-percentage on reducing-balance

method (refer to a description stated later), average number of years elapsed since the acquisition of fixed assets, λ , is calculated and depreciation adjustment index, $P_{i\lambda}$, is obtained with λ .

Monetary items—credit (including cash) D and debt C—are assumed to occur on the average during the current year, since their respective transaction dates are not identified. On this assumption, gains and losses on monetary value change (purchasing power gains and losses or debtor's gains and creditor's losses) are calculated.

The earned surplus adjustment formulas (by the progressive method) are:

$$\bar{S}_i = S_o + \sum_{k=1}^i \bar{P}_k^i - \sum_{k=1}^i Q_k^i - \sum_{k=1}^i T_k^i \quad \dots\dots\dots (2)$$

$$\bar{S}_i = S_i + (S_o - S_o) + \sum_{k=1}^i (\bar{P}_k^i - P_k) - \sum_{k=1}^i (Q_k^i - Q_k) - \sum_{k=1}^i (T_k^i - T_k) \quad \dots\dots\dots (3)$$

Wherein, S is an earned surplus balance (including the net income for the term) at the term end, Q an outflow of earnings (outside distribution or unretained appropriation of earnings), and T a transfer of earned surplus to capital stock and capital surplus. In case of the nominal accounting, we get:

$$S_i = S_{i-1} + P_i - Q_i - T_i$$

While formulas (2) and (3) show identical contents, they give different calculation results in case of financial data without periodic continuity. Here, we show adjustment calculation results under formula (3).

Concerning "U.S.A.". which is the sole country having data relating to T among the four countries dealt with in this paper, a comparison of adjustment calculation results between a case without T taken into account (by ignoring the last term of the right side of both formulas (2) and (3)) and another case with T taken into account shows that the adjustment calculation results from formula (3) gives a smaller difference than those from formula (2)¹⁰⁾. Thus, it has been determined that, in the case without periodic continuity in the materials, formula (3) containing the original data in the current year (i -th year) is more appropriate for the maintenance of comparability with the adjustment calculation results of "Japan", "U.K.". and "Germany". without taking T into account due to the restrictions of the original materials than formula (2), which calculates $\bar{S}$ by adding to the original data a difference between the total real net income and the total outside distribution, without taking into account nominal earned surplus S for the current year. This is the reason why we prefer the adjustment calculation results by formula (3) to formula (2).

The formula to adjust capital stock, etc. (including capital surplus) is as follows:

$$\bar{K}_i = \bar{K}_{i-1} + (K_i - K_{i-1}) \frac{P_{in}}{P_{ia}} \quad \dots\dots\dots (4)$$

$$= K_o \frac{P_{in}}{P_{on}} + \sum_{k=1}^i (K_k - K_{k-1}) \frac{P_{kn}}{P_{ka}} \quad \dots\dots\dots (5)$$

Both formulas (4) and (5) are identical in their contents. Differing from the formulas concerning S (earned surplus), formulas (4) and (5) give no difference in the

results of adjustment. Formula (5) is a mere variant of Formula (4) (recurrent function).

As shown in formulas (2), (3), (4) and (5), S and K also are assumed to occur on the average during the year similarly to C , D , V and W , since their transaction dates during the year remain unknown.

The above are the basic methods of adjustment calculation concerning the "four countries." Since, however, the "four countries" adopt different accounting systems, practices and financial data used for adjustment calculation, specific methods of adjustment calculation vary from country to country. With the paper space limited, only the basic differences are shown below. (For further details relating to the methods of adjustment calculation of "Japan", "U.S.A.", "U.K." and "Germany", refer to the author's paper already published ¹¹⁾).

For "U.K." and "Germany" where B/S and P/L only on the annual basis are shown in the "original materials", adjustment calculation for each year should be made under the above-mentioned formulas. On the other hand, as for "Japan" or "U.S.A.", semiannual or quarterly B/S and P/L are respectively available. Therefore, by using these data directly (without using B/S at the end of the second half or the fourth quarter only and the annual P/L into which data of P/L of the first half and the second half or of first through fourth quarters are summed up), the method of adjustment calculation becomes approximate to the ledger account adjustment method rather than the annual financial statement adjustment method. Any adjustment calculation data other than those for a year, however, are not shown in this paper, except for the calculations of the "average for five years" and the "average for the whole period" in the summary table for "Japan" and for those graphs showing transition in the equity ratio in "Japan".

In the "original materials," it seems that data are collected from companies having different closing dates in all of the four countries. However, we have adopted the "end of December" as the closing date commonly adopted in "U.S.A.", "U.K." and "Germany" and the end of next March in "Japan", in making adjustment calculation.

In consideration of the accounting practice in each of the "four countries" and the "level of information" in the "original materials", it is assumed that "DEPRECIATION" is made by the fixed-percentage-on-declining-balance method with a residual amount of 10 percent as for "Japan", by the straight-line method with a residual amount of zero as for "U.S.A." and "U.K.", and by the straight-line method with a residual amount of zero in case of "land and building" and "land without building", while by the fixed-percentage-on-reducing-balance method with a residual amount of 10 percent in case of "machinery and other equipment" as for "Germany". Since acquisition costs and accumulated depreciations of fixed assets were not displayed until 1986 in "Germany" and therefore it is impossible to calculate the ratio of undepreciated balance or the number of years elapsed of fixed assets required for adjustment calculation,

9) Nakai, B. [1980], p.38

10) Compare with the adjusted data for "all industries" in "U.S.A." in Nakai, B. [1987b]

11) Nakai, B. [1975a], [1977a], [1977b], [1983], [1987a], [1987b] and [1989]

it is assumed that the number of years elapsed is 40 percent of the useful life . (This is close to the method after 1986.)

Individual financial statements are shown in the "original materials" for "Japan" and the "Germany", and consolidated financial statements for the "U.S.A.", and "U.K." In the "original material" for the "U.S.A.", minority interest is regarded as an item of the long-term debt, showing a small weight less than 1 percent of the total long-term debt, so it is treated as a long-term debt (monetary item) also in this study. In the "original materials" for "U.K." minority interest is shown as an independent item situated intermediately between liabilities and equity and occupies a higher percentage in the total liabilities and equity than that in the "U.S.A.", so it is treated as equity (surplus) also in this study, taking into consideration its non-liability nature (non-monetary item).

In "Japan" and the "U.S.A.", EQUITY is classified into capital stock, etc. K (capita stock and capital surplus) and earned surplus S (retained earnings and net income for the current term) . In "U.K." and the "Germany", however, it is impossible to discriminate capital surplus from earned surplus because of restrictions in the "original materials" and other reasons, so equity is divided into capital stock K and surplus S. Accordingly, surplus S should be obtained by another formula of adjustment calculation slightly different from the above-mentioned formulas (2) and (3). For "Japan", how to handle specific reserve(allowance other than liability-allowance) R would be in another question. When calculating a (nominal) ratio of equity, specific reserves are usually included in liabilities. However, there are two cases of handling specific reserves from the views on them. One is the case where equity ratio A is calculated, with specific reserves included in liabilities. (Specific reserves, however, should be taken as a non-monetary item liability, for which no purchasing power change (MVC) profits and losses should be obtained.) The other is the case where equity ratio B is calculated through adjustment calculation similar to capital stock, etc. K, with specific reserves included in equity, judging from their real character as a earned reserve (surplus).

$$\text{Real equity ratio } A = \frac{\bar{K} + \bar{S}}{C + R + \bar{K} + \bar{S}}$$

$$\text{Real equity ratio } B = \frac{\bar{R} + \bar{K} + \bar{S}}{C + \bar{R} + \bar{K} + \bar{S}}$$

III General Price Level Adjusted Data on Financial Statements of Large Companies in "Japan", "U.S.A.", "U.K." and "Germany"

Based on the above-mentioned materials and general price adjustment formulas, the real income, the real equity, the equity ratio and some related data of large companies in the four countries, "Japan," "U.S.A.", "U.K." and "Germany", are shown in the "Summary Table" ("Total & Average Value for Five Years" and "Total & Average Value during the Whole Period") of Table 1-1-1 et seq. and in Fig. 1 et seq.

As Formulas (1) through (5) are expressions of adjustment calculation by the progressive method, all of adjusted amounts P, S, K. and R are restated at general price

levels of each end of period and are not suitable for time-series comparison as they are. All data in each table, therefore, are uniformly converted into general price level p_i at uniform conversion reference point t (average index from "January to March" 1991 for "Japan," average index from "January to March" 1991 for "U.S.A." and March 1991 for "U.K." and "Germany"). Since the adjusted amount are given in the form of a uniform conversion, the nominal amount is also given as nominal converted amount X_i^t and not as nominal absolute amount (published amount) X_i itself for the purpose of comparison.

In this respect, the real amount for the years other than the uniform conversion base year is converted to a level of the conversion base year on a carried-forward basis in "summarized five-year financial statements" of US companies published since 1979 under the SFAS No. 33 and many empirical studies. It should be noted, however, that in the above-mentioned financial statements and studies, there are found some cases where the absolute amount (published amount) only was shown without giving any nominal converted amount. For a specific single year, comparison between nominal and real amount can be made at the current year level. To compare the adjusted data over two or more years, however, it is meaningless that the nominal and real amount for such single year (based on the level for each year) are mutually compared with the amount for another year (except composition and relation ratio). A year-by-year comparison can never be available before converting both nominal and real amount to the uniform conversion base level. It is necessary to convert not only real but also nominal amount and to discriminate a nominal absolute amount (published amount) from a nominal amount converted. Table B exemplifies these relations.

Table B A Comparison of Equity for 1951 by Country and by Base Year

	<i>Japan</i>	<i>U.S.A.</i>	<i>U.K.</i>	<i>Germany</i>
Nominal amount (published amount) with the 1951 base year	680 billion yen	\$ 23.1 billion	£ 2.5 billion	DM 1.09 billion
Real amount with the 1951 base year	760	25.4	2.9	11.6
Nominal amount with the 1980 base year	2950	68.6	15.9	24.3
Real amount with the 1980 base year	3330	75.5	18.8	25.9
Nominal amount with the 1990 base year	3540	112.2	32.7	32.3
Real amount with the 1990 base year	3960	123.3	38.6	34.4

Note: The 1951 base is the average level between January and March of 1952 for "Japan" and the level of December 1951 for the "U.S.A.," "U.K." and "Germany". The 1980 and 1990 bases are the average level between January and March of respective year for "Japan" and "U.S.A." and the level in March of respective year for "U.K." and "Germany".

In "Summary Tables" of Table 1-1-1 et seq., the "average" amounts and ratios obtained on a "five-year basis" and "over the whole period" are a simple average of data for each term of five years and the whole period as well as their mutual ratios. Consequently, the weight of a term with a large absolute amount is more outstanding than that of other terms.

An analysis of adjusted data by country is omitted here with the space limitation for this paper. For further information on each of the "four countries", please

refer to our previous papers¹²⁾, although there are some restrictions such as shorter terms of data adjustment than this paper.

IV Attention to Be Paid in Comparing GPL Adjustment for Financial Statements of Large Companies in "Japan", "U.S.A.", "U.K." and "Germany"

While we are now comparing the GPL adjustment data (real value) for large companies in the four countries, "Japan", "U.S.A.", "U.K." and the "Germany", here is attention to be paid upon making such comparison.

One is that there are differences "from country to country" among the category of subject business and, therefore, a comparison itself of large companies on a country by country basis has certain limitations. The financial and insurance sectors are commonly excluded from the scope of this study in all of the "four countries". The "U.S.A." most narrowly limits the category of such large companies to the manufacturing sector only. The "Germany" limits the category to the manufacturing and mining sectors. The "U.K." includes virtually all categories of industries except the "ocean transportation business" and the "real estate business". Finally, "Japan" includes completely all categories of industries.

The adjusted data for the "U.S.A." (manufacturing sector only) in this paper may be deemed to be calculated at an excessively lower level in the real income (with the fictitious income too much) than that in "Japan" and "U.K." where virtually "all industries" are covered. For a period of three years from 1972 to 1974, Parker made an empirical study¹³⁾ where income of approximately one thousand large companies in "U.S.A." was adjusted (without adjusting total equity and liabilities). Here, the ratios of the real income to the nominal one are compared with those in this paper. The comparison clarifies that there are no significant difference between both data of the same category of industry; that is, the real-to-nominal income ratios (real income vs. nominal income) in 1972 through 1974 are respectively 76.7, 83.8 and 80.7 as shown in this paper, while Parker reported that those ratios relating to "manufacturing and retail industries" are respectively 76.5, 80.2 and 86.7. However, Parker also reported real-to-nominal income ratios are respectively 83.5, 91.3 and 102.8 for "all industries" including the public utility and transportation businesses, which have a relatively high weight of the net purchasing power profit. These ratios are found to be far higher than those of "manufacturing and retail industries".

Secondly, the real income for "Japan" in this paper shows that its ratio to the nominal income (hereinafter referred to as "real income ratio") is the lowest as compared with cases of other conditions (applicable indices and settling dates)¹⁴⁾. With accounts closed in December similarly to other countries or adjustment based on the consumer price indices like "U.K." and the "Germany", the real income and equity ratio in "Japan" would considerably be increased.

12) Nakai, B. [1975a], [1977a], [1977b], [1983], [1987a], [1987b] and [1989].

13) Parker, J.E., "Impact of Price-Level Accounting", *Accounting Review*, Vol. 52, 1977, pp.69-96.

14) Nakai, B. [1977b].

It is assumed in this paper that accounts in "Japan" are closed in March. If accounts would be closed in December by sliding for a quarter similarly to the "U.S.A.", "U.K." and the "Germany", the "real income ratio" in "Japan" would greatly be enhanced. The ratio of 111 percent (95 percent) given in this paper for "the whole period" (as parenthesized for "the latest decade") would rise up to 122 percent (97 percent). This is because the GNP deflator in "Japan" did not gradually rise (with $p_{i-1,n} < p_{ia} < p_{in}$ for each period), differing from the consumer price indices in "Japan" and general price indices in three countries applied in this paper, but a percentage of increase as compared with the preceding quarter was less in the first and third quarters than in the second and fourth quarters (especially in the first and third quarter, the fluctuation rate of GNP deflator was negative, that is, the index in the first quarter was smaller every year except 1974 than that in the preceding fourth quarter). This singularity appears in the fact that the adjusted data for "Japan" in this paper show a negative reported income shortage and a positive reported expense shortage except for depreciation shortage, contrary to the cases in the "U.S.A.", "U.K." and "Germany" (the same in the case by the consumer price indices in "Japan").

"Japan" shows a low "real income ratio" even in comparison with the case where the consumer price indices are used similarly to "U.K." and the "Germany", with the accounts closed in March as referred to in this paper.

With consumer price indices applied, the real income ratio would be 122 percent (93 percent) in "Japan".

With the "low level" of "real income ratio" reflected upon, "Japan" showed a low level of both "earned surplus" and "equity ratio" compared with cases of other countries. With accounts closed in December, "Japan" would have a real earned surplus ratio (real earned surplus to nominal earned surplus ratio $\bar{S}/S$) of 239 percent (207 percent) and real equity ratio A of 36 percent (37 percent). With consumer price indices applied (with accounts closed still in March), "Japan" would have a real earned surplus ratio of 256 percent (235 percent) and real equity ratio A of 38 percent (40 percent); both are far larger than respectively 196 percent (173 percent) and 33 percent (35 percent) referred to in this paper.

With what has been mentioned above taken into account, readers are expected to read the following data showing contents and results of comparison of the "four countries."

V Comparing General Price Level Adjusted Data on Financial Statements for Large Companies of Japan, U.S.A., U.K. and Germany

A Comparison of the "four countries" are hereunder given concerning transition for the "whole period" (40.5 years for "Japan", 43 years for the "U.S.A.", 42 years for "U.K." and 41 years for "Germany"), for "each five-year period" on the summary table (Table 1-1-1 et seq.) and for each year during the period (no table shown). "Four-Country Comparison Table" relating to each principal item, however, show transition for each of the "decades", the 1950s, 1960s, 1970s and 1980s. (The data for "each five-

year period" have been omitted here in consideration of the space allowed for this paper, because they are a mere rearrangement of the summary table given later.) In addition, the number of companies, whose data are taken and constitute the "original materials", varies in a great measure among the "four countries", so the comparison in this paper does not pertain to information on the monetary "amount" but are limited to various "ratios".

The adjustment calculation mentioned in this paper remains an imperfect trial, having a certain limitation as mentioned later. Concerning the GPL adjustment for financial statements of large companies in the "four countries" over a period of 40 years, however, it appears that a certain tendency as a whole could be displayed, although there may be discrepancies from realities in some individual years.

1. For the relation between real income $\bar{P}$ and nominal income P during the "whole period", "Japan" had $\bar{P}/P$ (real income to nominal income) of 111 percent, "U.S.A." 76 percent, "U.K." 93 percent and "Germany" 88 percent. Thus, "Japan" only recorded $\bar{P}$ larger than P , while other three countries had $\bar{P}$ smaller than P . For the average values on a "five-year period" basis in the summary table (Table 1-2-1, etc.), "Japan" had $\bar{P}$ smaller than P for "1976 through 1990" only and $\bar{P}$ larger than P for any other period. "U.K." had $\bar{P}$ larger than P for "1966 through 1975" and for "1986 through 1990," and "Germany" had $\bar{P}$ larger than P for "1971 through 1975" only. For any other period, both countries had $\bar{P}$ smaller than P . "U.S.A." had $\bar{P}$ smaller than P for

Table C Comparison of in Real Income, Net MVC Profit, Depreciation Shortages and Net Expense Shortages of Large Companies in Japan, U.S.A., U.K. and Germany

		<i>Japan</i>	<i>U.S.A.</i>	<i>U.K.</i>	<i>Germany</i>
Ratio of net MVC profit to nominal income	1951-1960	43	0	4	26
	1961-1970	58	5	14	27
	1971-1980	125	7	64	82
	1981-1990	17	8	29	27
	whole period	56	6	31	42
Ratio of depreciation shortages to nominal income	1951-1960	-22	-22	-17	-37
	1961-1970	-36	-15	-16	-34
	1971-1980	-90	-35	-68	-88
	1981-1990	-15	-40	-49	-62
	whole period	-39	-31	-43	-59
Ratio of expense shortage to nominal income	1951-1960	-30	-21	-15	-33
	1961-1970	-39	-15	-13	-31
	1971-1980	-94	-34	-59	-81
	1981-1990	-22	-39	-45	-59
	whole period	-44	-30	-38	-54
Ratio of real profit to nominal income $\bar{P}/P$	1951-1960	114	79	90	93
	1961-1970	119	90	101	96
	1971-1980	131	73	105	101
	1981-1990	94	69	84	68
	whole period	111	76	93	88

every five-year period. The maximum $\bar{P}/P$ in the average values on a five-year basis was recorded at 195 percent in "Japan" for "1971 through 1975" and the minimum was recorded at 47 percent in "U.K." for "1981 through 1985". On a year by year basis, "Japan" had $\bar{P}$ larger than P in 25 years during the 41-year period and $\bar{P}$ smaller than P in 16 years. "U.S.A." had $\bar{P}$ smaller than P throughout the whole period of 43 years. "U.K." showed $\bar{P}$ larger than P in 16 years during the whole period of 42 years and $\bar{P}$ smaller than P in 26 years. Finally, "Germany" showed $\bar{P}$ larger than P in 17 years during the whole period of 41 years and $\bar{P}$ smaller than P in 24 years.

Income adjustment ratio (income-adjustment-to-nominal income ratio $((\bar{P}-P)/P)$ of less than ± 20 percent were recorded by "Japan" in 19 years during the 41-year period, by "U.S.A." in 19 years during the 33-year period, by "U.K." 31 years during the 42-year period and by "Germany" in 20 years during the 41-year period. The maximum value and the minimum value (which means the negative figure with maximum absolute value) of income adjustment ratios were respectively recorded at 193 percent (1973) and at -69 percent (1954) in "Japan", at -7 percent (1968) and at -37 percent (1951) in "U.S.A.", at 104 percent (1975) and at -96 percent (1982) in "U.K." and at 105 percent (1951) and at -144 percent (1952) in "Germany" (This was the only case where a real loss was calculated in this paper, along with -110 percent in 1953.) For transition of average values on a "five-year period" basis, all of the "four countries" showed an almost consistent growth "from 1951 to 1975" (with fictitious income ratio decreased), although there were more or less differences as of "U.S.A." and "Germany". However, this tendency suddenly changed during 1976 through 1990 and the fictitious income ratios (or negative income adjustment ratio) increased on the contrary, with the exception of "U.K." where fictitious income ratio decreased for "1986 through 1990".

A higher ratio of nominal income change of a year to the preceding year than that of real income change in the same year was recorded by "Japan" in eight years during the 40-year period, by "U.S.A." in seven years during the 42-year period, by "U.K." in 12 years during the 41-year period and by "Germany" in 13 years during 40-year period. Such years were only a small part of the "whole period" in all of the "four countries." This indicates that application of the GPL-Adjustment would widen fluctuations of reported income.

Next, each adjustment difference item constructing income adjustment difference is to be specifically considered.

1a. For Profit and Loss on Money Value Change (purchasing power profit and loss, creditor's loss and debtor's profit), every country showed a larger amount of debt (including allowance) than credit (including cash; hereinafter the same) for every year (except some years in "U.S.A.") and the general price level had an upward trend, so net MVC profits (profits on monetary value change) were generated. (However, a net loss on money value change was generated, on the contrary, for some years during which an index at the end of the current term dropped as compared with the index of the

preceding term or with the annual average index.) The ratio of net MVC profit to nominal income (hereinafter abbreviated as the "net MVC profit ratio") for the "whole period" was recorded at 56 percent in "Japan," 6 percent in the "U.S.A.," 31 percent in "U.K." and 42 percent in "Germany".

The maximum value of net MVC profit ratio on an average for "each five-year period" was recorded at 181 percent in "Japan" for "1971 through 1975" and their minimum value (which means the negative figure with maximum absolute value) at -0.3 percent in "U.S.A." for "1951 through 1955". The maximum value and the minimum value on a year by year basis of net MVC profit ratio were respectively recorded at 305 percent (1974) and at -23 percent (1954) in "Japan", at 14 percent (1973) and at -6 percent (1950) in "U.S.A." at 179 percent (1975) and at (minus) 0 percent (1959) in "U.K." and at 136 percent (1975) and at -47 percent (1953) in "Germany".

For transition in the average value of net MVC profit ratio for "each five year period," all of the "four countries" showed a continuous increase from "1951 to 1975" (with a little decrease only in "Germany" for "1966 through 1970"). Since the period from "1976 to 1980", the net MVC profit ratio decreased in every country while keeping a higher level than that until 1970. (For transition in "average values for each decade", the ratio rose in all of the "four countries".)

MVC profits in the short- and long-term credit and debt are as shown in Table 1-1-1, etc. The ratios of the net MVC profit in long-term credit and debt to the total net MVC profit on the average through the "whole period" (with parenthesized figures for the latest decade), were 54 percent (56 percent) in "Japan", 62 percent (35 percent) in the "U.S.A.", 59 percent (59 percent) in "U.K." and 79 percent (86 percent) in "Germany".

1b. For the revenue and expense other than MVC profit and loss (nominal revenue and nominal expense), all of the "four countries" had the total revenue exceeding the total expense for every year in the nominal capital accounting. (The companies whose financial data were adjusted in this paper, reported not a net loss but net income as a whole.) Accordingly, if the total transactions are adjusted with the indices for respective years, net revenue shortage would arise a little. But net expense shortage took place because of depreciation adjustment by estimated number of years elapsed λ . For a net expense shortage, Δ marks prefixed on Table 1-2-1, et seq., because that shortage was negative in relation to the nominal income. However, a negative sign is not attached in the description of the shortage hereunder. The same applies to the depreciation expense shortage mentioned later. The net expense shortage ratio (net expense shortage to nominal income) on a average value basis for the "whole period" were 45 percent in "Japan", 31 percent in the "U.S.A.", 38 percent in "U.K." and 54 percent in "Germany". The maximum value of net expense shortage ratio on an average for "each five-year period" was recorded at 94 percent in "Japan" for "1976 through 1980" and the minimum value at 10 percent in "U.K." for "1961 through 1965". On a year by year basis, the maximum and minimum values were respectively recorded at 191 percent (1975) and at 8 percent (1951) in "Japan", at 65 percent (1980) and at 11 percent (1966) in the

"U.S.A.", at 134 percent (1982) and at 4 percent (1950) in the "U.K.", and at 143 percent (1975) and at 8 percent (1950) in "Germany". For transition of averages value for "each five-year period average" of the ratios, "Japan" generally showed a continuously growing tendency till 1980 and followed by a decrease, while the "U.S.A.", "U.K." and "Germany" were decreased in the ratio until 1965 and followed by an increase. Since 1986, however, these "three countries" showed again a decrease in this ratio and the ratios in the first half of the 1980's were higher than before in all of the "three countries".

Among the net expense shortage, the revenue shortage and the expense shortage except depreciation expenses are dependent upon an amount of revenues and expenses expect depreciation and upon a growing rate of general price levels for the current year. Therefore, an amount of such shortages would be larger for more recent period in Japan (64 percent of the ratio of such shortages for the "latest decade" to that of the "whole period") and for "1971~80" in the "three countries" (45~56%), but the ratio between both shortages has kept almost constant throughout the "whole period". Differing from the other "three countries", "Japan" only showed a negative figure in revenue shortage against nominal income and a positive figure in expense shortage except depreciation expenses. This is because "Japan" had the general price index (GNP deflator) at the end of every term lower than the average commodity price index during the term (a tendency of differing from the general price indices in other "three countries" and the consumer price index in "Japan").

1c. Depreciation (expense) shortage has a higher percentage of adjustment (shortage) to the nominal amount than any other expense shortage and this serves as a significant factor to decrease the income adjustment (or to increase the fictitious income).

For a ratio of the nominal depreciation expenses to the total nominal expenses on the average for the "whole period" (for 30 years only from 1961 to 1990 since expenses had been reported on a semi gross amount [halb-Brutto] principle before 1961 in "Germany" and no total expense data available for the "U.K."; hereinafter in this subchapter the same), (with parenthesized figures pertaining to the latest decade), "Japan" showed 2.7 percent (2.3 percent), "U.S.A." 5.5 percent (5.8 percent) and "Germany" 6.2 percent (7.1 percent). For a ratio of real depreciation expenses to total real expense, however, "Japan" had 3.4 percent (3.0 percent), "U.S.A." 7.7 percent (8.2 percent) and "Germany" 7.4 percent (8.4 percent), all significantly exceeding the nominal values. For a ratio of depreciation expense shortage to nominal depreciation expenses over the "whole period," "Japan" had 22 percent (8 percent), "U.S.A." 45 percent (47 percent), "U.K." 71 percent (77 percent) and "Germany" 21 percent (21 percent), far remarkably exceeding the annual average general price level growth rates of 4.4 percent (1.1 percent) in "Japan", 4.1 percent (4.1 percent) in "U.S.A." 7.0 percent (6.4 percent) in "U.K." and 3.0 percent (2.5 percent) in "Germany".

For a ratio of the depreciation expense shortage to the total expense shortage for the "whole period", "Japan" had 47 percent (10 percent), "U.S.A." 77 percent (82 percent) and "Germany" 55 percent (66 percent), with that of the "U.K." impossible to calculate. The maximum value of this ratio was recorded by "Germany" at 181 percent

in 1986 and the minimum by "Japan" at 12 percent in 1988. (Lower ratios were recorded by "Japan" in 1951 and 1954. However, they are not taken as the minimum ratios, since the adjustment calculations in this paper were made on the assumption that fixed asset acquisition timing should not be retroacted to 1949 and before, with the fixed asset revaluation in 1950s taken into consideration. The same applies to that ratio to nominal income mentioned later.)

For a ratio of depreciation expense shortage to the net expense shortage, "Japan" had 87 percent (66 percent), "U.S.A." 103 percent (102 percent), "U.K." 112 percent (108 percent) and "Germany" 108 percent (105 percent) for the "whole period". The maximum value of this ratio was recorded at 197 percent by "U.K." for 1951 and the minimum value at 32 percent by "Japan" for 1989.

For a ratio of the depreciation expense shortage to the nominal income for the whole period, "Japan" had 39 percent (15 percent), "U.S.A." 31 percent (40 percent), "U.K." 43 percent (89 percent) and "Germany" 59 percent (62 percent). The maximum value and minimum value of this ratio by country were respectively recorded at 193 percent (1975) and at 4 percent (1988) by "Japan," at 65 percent (1982) and at 11 percent (1966) by the "U.S.A.", at 137 percent (1982) and at 6 percent (1950) by "U.K." and at 153 percent (1975) and at 25 percent (1961; although lower in 1950, it is not taken as the minimum ratio, since fixed asset acquisition timing should not be retroacted to any date before the end of 1948, with the fixed asset revaluation taken into consideration) by "Germany". In case of the "three countries" other than "Japan", this ratio exceeded the net expense shortage ratio in most years. In case of "Japan", it exceeded 90 percent of the net expense shortage ratio in many years.

Average nominal depreciation rates by country for the "whole period" were 11.4 percent (12.8 percent) in "Japan", 4.3 percent (5.0 percent) in the "U.S.A.", 5.3 percent (5.3 percent) in "U.K." and 4.5 percent (4.6 percent) for buildings and 19.4 percent (27.4 percent) for machinery and equipment in Germany. "The estimated number of years elapsed was getting shorter and shorter in the "three countries" other than "Japan", that is, from 10 years to 7 years in the "U.S.A.", from 9 years to 6 years (7 years since 1987) in "U.K." and from 13 years to 7 years (12 years between 1987 and 1990) for buildings and from 5 years to 4 years for machinery and equipment in "Germany". However, "Japan" showed a tendency that the estimated number of years elapsed became longer, that is, 5 years to 6 years since 1970 after once declined from 5 years in the 1950s to 4 years in the 1960s.

2. Real-to-nominal value ratios in equity, capital stock, etc. $\bar{K}$ and surplus $\bar{S}$, $(\bar{K} + \bar{S}) / (K + S)$, $\bar{K} / K$, $\bar{S} / S$ (with S for "U.K." including the minority interest) as averaged for the whole period (for 1950 and 1990 as parenthesized) by country are as follows:

$$\begin{aligned} \text{"Japan":} \quad & (\bar{K} + \bar{S}) / (K + S) = 186\% (128\%, 178\%), \\ & \bar{K} / K = 178\% (114\%, 215\%) \\ & \bar{S} / S = 196\% (173\%, 152\%) \end{aligned}$$

"U.S.A.": $(\bar{K} + \bar{S}) / (K + S) = 116\% (93\%, 134\%),$
 $\bar{K} / K = 170\% (108\%, 237\%)$
 $\bar{S} / S = 90\% (81\%, 93\%)$
 "U.K.": $(\bar{K} + \bar{S}) / (K + S) = 199\% (105\%, 248\%),$
 $\bar{K} / K = 242\% (106\%, 393\%)$
 $\bar{S} / S = 182\% (105\%, 219\%)$
 "Germany": $(\bar{K} + \bar{S}) / (K + S) = 146\% (96\%, 179\%),$
 $\bar{K} / K = 146\% (96\%, 183\%)$
 $\bar{S} / S = 145\% (96\%, 172\%)$

A Comparison of the above data as averaged for the "whole period" between the countries has proven that $(\bar{K} + \bar{S}) / (K + S)$ is smaller in the order of the "U.K.", "Japan", "Germany" and the "U.S.A.", $\bar{K} / K$ in the order of the "U.K.", "Japan," the "U.S.A.", and the "Germany", and $\bar{S} / S$ in the order of "Japan", the "U.K.", "Germany" and "U.S.A.". Since the equity is a sum of capital stock, etc. and surplus, $(\bar{K} + \bar{K}) / (K + S)$ should take a value intermediate between $\bar{K} / K$ and $\bar{S} / S$. It was "Japan" only that had $\bar{S} / S$ larger than $\bar{K} / K$. While the other "three countries", to the contrary, had $\bar{S} / S$ smaller than $\bar{K} / K$ (This is presumably because Japan had larger $\bar{P} / P$ and smaller $Q / \bar{P}$ than other countries.) Transition in these figures for the "whole period" showed a strong tendency that all of the equity, capital stock, etc. and surplus had higher growth of their respective real values than that of nominal values. [All of $(\bar{K} + \bar{S}) / (K + S)$, $\bar{K} / K$ and $\bar{S} / S$ showed an increasing tendency.] Partially, however, some contradictory tendencies were found such as the surplus and equity in "Japan" in the 1980s, the surplus and equity in "U.K." from the 1950s to the first half of the 1960s and in the second half of the 1980s in "U.S.A.". Real values were larger than nominal ones as a whole, but there were some contradictory cases such as the capital stock, etc. for 1950, 1953 through 1954 and 1956 through 1958, the surplus for 1950, 1952 through 1954, the equity for 1950 and 1952 through 1954 in "Germany", the surplus for 1949 and 1959 through 1968 in the "U.K.", and the surplus for 1948 through 1973, 1976 through 1977 and 1983 through 1990, and the equity for 1948 through 1967 in "U.S.A.". Especially, it was only for 1975 and 1978 through 1982 that "U.S.A." had surplus $\bar{S}$ exceeded S .

Table D: Comparison of Liabilities, Capital Stock, etc., Surplus and others between 1950 and 1990 of Large Companies in Japan, U.S.A., U.K. and Germany— Multipliers of the amounts in 1990 to those in 1950 (for "Japan", multipliers of 1990 to 1951)

	Japan		U.S.A.		U.K.		Germany	
	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
Liabilities	25.9	—	12.8	—	9.2	—	9.2	—
Equity	14.6	20.1	3.9	5.7	3.7	8.7	3.2	5.4
(Capital stock, etc. included)	7.6	14.7	2.4	5.4	1.5	5.5	2.1	3.9
(Surplus included)	43.3	36.8	5.2	6.0	5.3	11.1	5.3	8.2
Equity ratio	0.68	0.89	0.58	0.70	0.66	0.98	0.56	0.76
Real Equity/Nominal Equity	1.43		1.44		2.36		1.86	
Real Capital Stock, etc/ Nominal Capital stock, etc.	1.92		2.2		3.7		1.91	
Real surplus/Nominal Surplus	0.85		1.15		2.09		1.80	

Table E Comparison of Real and Nominal Equity of Large Companies in Japan, U.S.A., U.K. and Germany
(unit: percent)

		Japan	U.S.A.	U.K.	Germany
Ratio of real equity to nominal equity ($\bar{K} + \bar{S}$) / ($K + S$)	1951-1960	126	90	117	101
	1961-1970	153	98	122	113
	1971-1980	228	123	240	156
	1981-1990	189	132	256	182
	whole period	176	116	196	146
Ratio of real capital stock, etc. to nominal capital stock, etc. $\bar{K}/K$	1951-1960	118	116	129	100
	1961-1970	139	130	149	112
	1971-1980	195	186	321	155
	1981-1990	208	232	435	193
	whole period	160	170	242	146
Ratio of real surplus to nominal surplus $\bar{S}/S$	1951-1960	154	70	109	103
	1961-1970	186	80	102	114
	1971-1980	267	99	212	156
	1981-1990	173	94	220	172
	whole period	196	90	182	145

1a. Surplus, especially earned surplus, is determined by respective cumulative amounts of incomes and outside distribution Q (outflow of income). The outside distribution rates are shown below. Nominal values and real values of the outside distribution rates for a single year (Q/P) as averaged for the "whole period" (with parenthesized figures for the "latest decade") are, respectively, 47 percent and 43 percent (39 percent and 41 percent) in "Japan," 49 percent and 64 percent (51 percent and 74 percent) in the "U.S.A.," 43 percent and 52 percent (45 percent and 54 percent) in "U.K." and 75 percent and 82 percent (80 percent and 88 percent) in "Germany." The maximum and minimum values of (Q/P) as "averaged for each five-year period" were respectively recorded at 88 percent for "1971 through 1975" in "Germany" and at 34 percent for "1976 through

Table F Comparison of Outside Distribution Rate of Large Companies in Japan, U.S.A., U.K. and Germany
(unit: percent)

		Japan		U.S.A.		U.K.		Germany	
		Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
Outside distribution rate for single year	1951-1960	57	50	50	70	41	44	76	82
	1961-1970	61	51	53	59	53	52	70	73
	1971-1980	49	37	42	57	37	35	80	79
	1981-1990	39	41	51	74	45	54	63	94
	whole period	47	43	49	64	43	52	71	81
Cumulative outside distribution rate	1951-1960	37	27	50	69	38	41	71	78
	1961-1970	61	51	53	64	44	47	73	76
	1971-1980	57	43	50	61	45	45	74	74
	1981-1990	50	44	48	64	43	51	73	79
	whole period	54	44	50	64	43	50	73	77
Ratio of real outside distribution rate to nominal outside distribution rate		Single year	Cumulative	Single year	Cumulative	Single year	Cumulative	Single year	Cumulative
	1951-1960	88	84	127	137	112	108	107	110
	1961-1970	84	84	111	122	99	107	105	105
	1971-1980	76	76	136	122	95	100	99	101
	1981-1990	106	87	146	132	119	119	147	109
	whole period	90	83	132	128	121	117	114	105

1980" in "U.K.", both in terms of the nominal data, and at 97 percent for "1986 through 1990" in "Germany" and at 28 percent for "1971 through 1975" in "Japan" both in terms of the real data. On a year by year basis, the maximum and minimum values of (Q/P) by country were respectively recorded at 84 percent (1965) and 26 percent (1951) in terms of the nominal data and at 211 percent (1954) and 15 percent (1973) in terms of the real data both in "Japan", at 65 percent (1958) and 37 percent (1979) in terms of the nominal data and at 133 percent (1982) and 41 percent (1976) in terms of the real data both in "U.S.A." at 59 percent (1967) and 32 percent (1976) in terms of the nominal data and at 357 percent (1982) and 21 percent (1975) in terms of the real data both in "U.K." and at 126 percent (1977) and 41 percent (1976) in terms of the nominal data and at 297 percent (1977) (for 1952 and 1953, the outside distribution rates were indefinite due to real losses — impossible to calculate) and 34 percent in terms of the real data both in "Germany".

For the nominal and real values of cumulative outside distribution rates $(\Sigma Q/\Sigma P)$ as averaged for the "whole period" (values for latest decade), "Japan" respectively had 54 percent and 44 percent (50 percent and 44 percent), "U.S.A." 50 percent and 64 percent (48 percent and 64 percent), "U.K." 43 percent and 50 percent (43 percent and 51 percent) and "Germany" 73 percent and 77 percent (73 percent and 79 percent). The maximum and minimum values of cumulative outside distribution rates $(\Sigma Q/\Sigma P)$ as "averaged for each five-year period" were recorded at 75 percent for "1981 through 1985" in "Germany" and at 38 percent for "1951 through 1955" in "Japan" in terms of nominal data, and at 80 percent for "1986 through 1990" in "Germany" and at 28 percent for "1951 through 1955" in "Japan" in terms of real data. The maximum and minimum values on a year by year basis by country were recorded at 64 percent (1966) and 25 percent (1951) in terms of nominal data and at 54 percent (1965) and 16 percent (1951) in terms of real data in "Japan", at 53 percent (1963) and 37 percent (1988) in terms of nominal data and at 72 percent (1954) and 60 percent (1979) in terms of real data in the "U.S.A.", at 47 percent (1971) and 35 percent (1951) in terms of nominal data and at 54 percent (1986) and 35 percent (1951) in terms of real data in the "U.K.", at 76 percent (1963) and 50 percent (1950) in terms of nominal data and at 97 percent (1953) and 45 percent (1951) in terms of real data in "Germany".

A comparison of nominal and real values of outside distribution rates on "each 5-year average" shows that "Japan" had both monoannual and cumulative real values smaller than nominal ones, except the monoannual values for "1976 through 1990", because real income $\bar{P}$ exceeded nominal income P . The other "three countries" had both monoannual and cumulative real values exceed nominal ones, except the monoannual values for "1971 through 1975" in "U.K." and in the "Germany", monoannual values for "1986 through 1990" and cumulative values for "1971 through 1975" in the "U.K.", because their $\bar{P}$ was smaller than P .

For changes in outside distribution rates (as compared with the preceding year), a monoannual real value changed more widely than a monoannual nominal one, reflecting the fact that changes in $\bar{P}$ were more remarkably than those of P . Besides,

cumulative values changed less than monoannual values both nominal and real, reflecting the fact that ΣP and $\Sigma \bar{P}$ changed less actively than P and $\bar{P}$.

For transition in monoannual outside distribution rates, it is difficult to find specific tendency, with the data varying in a great measure both annually and on five-year average. A comparison of ten-year average values, however, gives us significant insights described below. "Japan" tended to decrease in the monoannual outside distribution rates on a ten-year average value basis, with the peak reached by its nominal value in the 1960s, and the real value showed an increasing tendency again in the 1980s, though it had decreased once, with the peak reached in 1960s. The "U.S.A." decreased in

Table 1-1-1 MVC Profit and Loss, Income Adjustment, Real Income, etc. and Related Data of Large Companies (except Banks and Insurance Companies) in Japan
(Summary Table) (trillion yen)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
aa. MVC loss on debit items	-0.76	-1.81	-5.21	-10.37	-29.82	-13.20	-4.75	-6.28	-72.47
ab. MVC profit on credit items	1.75	3.65	9.05	16.68	47.71	22.04	8.17	9.09	118.80
ac. Net MVC profit (aa+ab)	0.99	1.84	3.84	6.30	17.88	8.84	3.42	2.81	46.33
ba. Revenue shortage	-4.47	-3.86	-5.01	-4.05	-5.37	-20.10	-31.50	-33.82	-108.32
bb. Expense Shortage except depreciation	4.21	3.64	4.71	3.82	5.19	19.41	30.40	32.41	103.91
bba. Depreciation shortage	-0.54	-0.92	-2.35	-3.90	-8.35	-10.83	-3.87	-1.68	-32.41
bc. Net expense shortage (ba+bb+bba)	-0.80	-1.14	-2.65	-4.13	-8.53	-11.52	-4.98	-3.09	-36.83
ca. Income adjustment (ac+bc)	0.19	0.70	1.19	2.17	9.35	-2.68	-1.56	-0.28	9.50
cb. Nominal income	2.56	3.96	6.73	10.62	9.88	11.52	15.48	21.88	83.17
cc. Real income (ca+cb)	2.75	4.66	7.92	12.79	19.24	8.84	13.92	21.60	92.67
ad. MVC profit in short-period credit and debt	0.68	0.95	1.90	2.76	8.15	3.82	1.72	1.01	21.26
ae. MVC profit in long-period credit and debt	0.31	0.89	1.95	3.54	9.74	5.02	1.70	1.79	25.07
4 th quarter (October-December) GNP deflator	47.1~ 53.6	56.7~ 63.3	69.1~ 80.8	84.9~ 104.4	108.4~ 165.1	174.3~ 201.3	205.8~ 213.7	215.1~ 224.5	39.6~ 224.5
Number of companies	582~ 597	583~ 569	566~ 628	621~ 573	567~ 535	557	556~ 577	558~ 583	643~ 583

Figures marked with (-) in this table represent "losses (negative to nominal income)" irrespective of the wording in the description

Table 1-2-1 Ratio of MVC Profit and Loss, Income Adjustment, Real Income, etc. to nominal income and Related Data of Large Companies (except Bankings and Insurance Businesses) in Japan
(in percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
aa. MVC loss on debit items	30	46	77	98	302	115	31	29	87
ab. MVC profit on credit items	68	92	135	157	483	191	53	42	143
ac. Net MVC profit (aa+ab)	39	46	57	59	181	77	22	13	56
ba. Revenue shortage	-175	-97	-75	-38	-54	-174	-203	-155	-130
bb. Expense shortage except depreciation	164	92	70	36	53	168	196	148	125
bba. Depreciation shortage	-21	-23	-35	-37	-84	-94	-25	-8	-39
bc. Net expense shortage (ba+bb+bba)	-4	-2	-1	0	0	-2	-3	-2	-2
ca. Income adjustment (ac+bc)	-31	-29	-39	-39	-86	-100	-32	-14	-44
cb. Nominal income	8	18	18	20	95	-23	-10	-1	11
cc. Real income (ca+cb)	108	118	118	120	195	77	90	99	111
bbb. Depreciation shortage/Nominal depreciation	17.8	15.0	19.5	22.9	40.8	52.9	13.0	4.4	22.0
wnp. Return on sales (nominal)	2.5	2.3	2.2	2.1	1.2	1.2	1.2	1.5	1.4
wrp. Return on sales (real)	2.8	2.8	2.6	2.5	2.5	1.0	1.1	1.6	1.5

Table 1-3-1 GPL Adjusted Equity and Related Data of Large Companies (except for Banks and Insurance Companies) in Japan (Summary Table)

(trillion yen, percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
l. Liabilities(except specific reserve)	10,44	21,55	45,55	71,74	108,65	121,63	142,13	167,03	86,26
tn. Nominal equity	6,39	10,09	15,69	18,37	20,96	24,11	37,52	61,39	24,38
kn. (capital stock, etc.)	5,08	7,66	11,75	12,07	12,06	12,72	17,94	30,34	13,75
sn. (earned surplus)	1,31	2,43	3,94	6,30	8,90	11,39	19,58	31,05	10,63
tr. Real equity	7,88	12,94	22,16	29,99	45,96	57,48	70,91	94,78	42,84
kr. (capital stock, etc.)	5,73	9,31	15,05	18,03	22,56	26,61	32,82	45,17	21,96
sr. (earned surplus)	2,15	3,63	7,11	11,95	23,40	30,87	38,08	49,61	20,88
tr/tn. Real equity ÷ Nominal equity (%)	123	128	141	163	219	238	189	154	176
kr/kn. Real capital stock, etc. ÷ Nominal capital stock, etc.(%)	113	122	128	149	187	209	183	149	160
sr/sn. Real earned surplus ÷ Nominal earned surplus (%)	164	149	180	190	263	271	195	160	196
cbn. Total nominal income from 1950 to current period	2,15	5,31	11,05	19,60	30,76	40,41	54,55	73,252	29,65
ccn. Total real income from 1950 to current period	2,84	6,04	13,15	23,29	40,79	52,79	64,74	824,69	35,79
qn. Total outflow (outside distribution) from 1950 to current period	81	2,73	6,63	12,01	17,80	22,77	28,50	357,93	15,88
qnp. Cumulative outside distribution ratio (nominal) (%) (qn/cbn)	38	51	60	61	58	56	52	49	54
qrp. Cumulative outside distribution ratio (real) (%) (qn/ccn)	28	45	50	52	44	43	44	43	44
qnp. Outside distribution ratio (nominal) (%)	49	62	72	54	55	43	41	37	47
qrp. Outside distribution ratio (real) (%)	45	53	62	45	28	57	45	38	42
enp. Nominal equity ratio (%)	37	31	25	20	16	16	21	27	22
erp. Real equity ratio (%)	42	37	32	29	29	32	33	36	33
unp. Nominal return on total assets (%)	2.9	2.5	2.2	2.3	1.4	1.6	1.7	1.9	1.8
urp. Real return on total assets (%)	2.9	2.7	2.3	2.5	2.4	1.0	1.3	1.7	1.6
tnp. Nominal return on equity (%)	7.8	7.9	8.5	11.6	9.3	9.6	8.3	7.1	8.3
trp. Real return on equity (%)	6.9	7.3	7.1	8.6	8.2	3.1	3.9	4.6	4.9

Table 1-4-1 GPL Adjusted Equity and Related Data of Large Companies (except for banking and insurance businesses) In Japan (with the specific reserve reckoned as equity)

(in trillion yen, percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
Specific reserve (real)	0.49	0.93	1.19	2.7	4.9	4.51	4.02	3.97	2.85
Nominal equity B	6.72	10.61	16.39	20.35	24.06	25.85	37.83	61.4	25.48
Real equity B	8.38	13.88	23.36	32.7	50.86	62	74.93	98.74	45.69
Real equity B / nominal equity	125	131	142	161	211	239	198	161	179
Nominal equity ratio (%)	39	33	26	22	18	18	21	27	22
Real equity ratio (%)	45	39	34	31	32	34	34	37	35

both nominal and real values until the 1970s and then made an increasing turn thereafter. The "U.K." showed a high level of both nominal and real values in the 1960s and made an increasing turn after showing a decrease in the 1970s. Contrary to the "U.K.", "Germany" was on a low level of both nominal and real values in the 1960s and the real value came to increase thereafter, while the nominal value was decreasing, with the peak reached in the 1980s.

For transition in cumulative outside distribution rates in "Japan", the nominal value reach the peak in the period with the maximum value taken (in each year), while the real value turned to gradual increase after gradual decrease until 1974, with the peak reached in the period with the maximum value taken (in each year). As for "U.S.A.", the nominal value decreased gradually, while the real value was increasing

Table 2-1-1 MVC profit and Loss, Income Adjustment, Real Income, etc. and Related Data of Large Companies (Manufacturing Businesses only) in the U.S.A. (Summary Table)
(billion dollars)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'48-'90: (43 years)
aa. MVC loss on debit items	-14.4	-20.6	-22.2	-79.2	-164.3	-238.0	-156.6	-178.1	-888.3
ab. MVC profit on credit items	13.9	21.0	23.5	108.2	202.9	270.9	198.6	218.8	1064.7
ac. Net MVC profit (aa+ab)	-0.5	0.5	1.2	29.0	38.6	32.9	42.0	40.7	181.7
ba. Revenue shortage	5.8	9.0	10.7	36.7	66.5	95.7	56.2	50.4	335.9
bb. Expense shortage except depreciation	-5.3	-8.1	-9.6	-33.1	-60.3	-86.9	-51.3	-45.7	-304.4
bba. Depreciation shortage	-48.6	-35.0	-37.6	-66.2	-141.2	-216.5	-267.5	-154.2	-996.2
bc. Net expense shortage (ba+bb+bba)	-48.1	-34.1	-36.5	-62.6	-135.1	-207.7	-262.6	-149.4	-964.8
ca. Income adjustment (ca+cb)	-48.6	-33.6	-35.3	-33.6	-96.5	-174.7	-220.5	-108.7	-783.1
cb. Nominal income	175.3	214.5	286.2	384.5	438.2	593.0	495.3	555.7	3242.2
cc. Real income (ca+cb)	126.7	180.9	250.9	350.9	341.7	418.2	274.8	447.0	2459.1
ad. MVC profit in short-period credit and debt	-2.8	-3.4	-3.0	2.9	7.7	17.2	26.7	27.2	69.3
ae. MVC profit in long-period credit and debt	2.2	3.9	4.2	26.1	30.9	15.8	15.3	13.6	112.4
4 th quarter (October-December) GNP deflator	57.8~ 61.4	63.7~ 69.0	69.7~ 75.0	77.0~ 93.0	97.4~ 129.0	135.0~ 185.1	201.7~ 232.7	238.8~ 276.1	53.5~ 276.1
Number of companies		— 317	332~ 408	458~ 609	642~ 818	868~ 1104			

Table 2-2-1 Ratio of MVC profit, Income Adjustment and Real Income to nominal income and Related Data of Large Companies (Manufacturing Businesses only) in the U.S.A.
(in percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'48-'90: (43 years)
aa. MVC loss on debit items	-8.2	-9.6	-7.8	-20.6	-37.5	-40.1	-31.6	-32.0	-27.2
ab. MVC profit on credit items	7.9	9.8	8.2	28.1	46.3	45.7	40.1	39.4	32.8
ac. Net MVC profit (aa+ab)	-0.3	0.2	0.4	7.5	8.8	5.6	8.5	7.3	5.6
ba. Revenue shortage	3.3	4.2	3.7	9.5	15.2	16.1	11.4	9.1	10.4
bb. Expense shortage except depreciation	-3.0	-3.8	-3.3	-8.6	-13.8	-14.7	-10.4	-8.2	-9.4
bba. Depreciation shortage	-27.7	-16.3	-13.2	-17.2	-32.2	-36.5	-54.0	-27.7	-30.7
bc. Net (expense) shortage (ba+bb+bba)	-27.4	-15.9	-12.7	-16.3	-30.8	-35.0	-53.0	-26.9	-29.8
ca. Income adjustment (ca+cb)	-27.7	-15.7	-12.3	-8.7	-22.0	-29.5	-44.5	-19.6	-24.2
cc. Real income (ca+cb)	72.3	84.3	87.7	91.3	78.0	70.5	55.5	80.4	75.8
bbb. Depreciation shortage/Nominal depreciation	54.9	26.1	20.7	25.0	46.7	67.6	62.7	33.1	44.9
wnp. Return on sales (nominal)	6.4	6.3	6.5	5.9	5.5	6.1	4.8	5.3	5.5
wrp. Return on sales (real)	4.7	5.3	5.7	5.3	4.2	4.3	2.6	4.3	4.0

after it had decreased until 1979. As for "U.K.", both nominal and real values increased until 1971, while showing gradual decrease in the 1970s. However, these values gradually increased again in the 1980s. As for "Germany", the nominal value gradually decreased like other countries, with the peak reached in the term with the maximum value taken while real values gradually decreased from 1953, while showing a gradual increase from 1973.

For a gap between real and nominal values, transition of "average values for each ten year" shows that "Japan" tended to increase or expand both monoannual and cumulative values. On the other hand, "U.S.A." showed the lowest level of both monoannual and cumulative values in the 1960s. The "U.K." and "Germany" showed a tendency to reduce both monoannual and cumulative values. For average values for the "whole period", "U.S.A." had the highest level of both monoannual and cumulative values, followed by "Japan", the "Germany" and "U.K." in this descending order. In other words, "U.K." is the smallest in the gap between real and nominal values.

3. For the equity ratio as averaged for the "whole period" (for the "latest decade" as parenthesized), "Japan" (here subject to equity ratio A^{15}), if with equity B^{15} , a little

Table 2-3-1 GPL Adjusted, Equity and Related Data of Large Companies (Manufacturing Industry only) in U.S.A. (Summary Table)

(billion dollars, percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'48-'90: (43 years)
l. Liabilities(except specific reserve)	158.8	198.7	271.5	508.4	640.2	739.7	950.4	1262.1	556.8
tn. Nominal equity	278.2	388.3	501.3	661.2	740.0	817.0	875.4	884.5	613.6
kn. (capital stock, etc.)	120.7	165.3	190.4	225.3	228.2	207.9	229.3	247.6	195.0
sn. (earned surplus)	157.5	223.0	310.9	435.9	511.7	609.1	646.1	636.9	418.6
tr. Real equity	245.3	353.9	464.9	677.7	866.7	1049.8	1164.7	1153.6	709.3
kr. (capital stock, etc.)	135.2	196.4	236.3	305.4	375.2	435.2	524.5	581.9	332.0
sr. (earned surplus)	110.1	157.5	228.5	372.3	491.4	614.6	640.2	571.7	377.3
tr/tn. Real equity ÷ Nominal equity (%)	88.2	91.1	92.7	102.5	117.1	128.5	133.0	130.4	115.6
kr/kn. Real capital stock, etc. ÷ Nominal equity stock, etc.(%)	112.0	118.8	124.1	135.5	164.4	209.3	228.7	235.0	170.2
sr/sn. Real earned surplus ÷ Nominal earned surplus (%)	69.9	70.6	73.5	85.4	96.0	100.9	99.1	89.8	90.1
cba. Total nominal income from 1948 to current period	198.8	403.5	647.0	1007.9	1412.8	1941.7	2496.0	3013.2	1297.6
cca. Total real income from 1948 to current period	136.6	304.3	512.4	840.4	1178.6	1561.2	1911.8	2263.4	1015.7
qa. Total outflow (outside distribution) from 1948 to current period	96.3	207.2	343.5	528.0	727.5	943.1	1197.4	1460.7	641.8
qnap. Cumulative outside distribution ratio (nominal) (%) (qa/cba)	48.5	51.3	53.1	52.4	51.5	48.6	48.0	48.5	49.5
qrap. Cumulative outside distribution ratio (real) (%) (qa/cca)	70.5	68.1	67.0	62.8	61.7	60.4	62.6	64.5	63.2
qnp. Outside distribution ratio (nominal) (%)	52.4	57.1	53.3	52.0	45.1	39.8	51.6	50.1	48.6
qrp. Outside distribution ratio (real) (%)	72.5	67.7	60.8	57.0	57.9	56.5	93.1	62.2	64.1
enp. Nominal equity ratio (%)	63.7	66.2	64.8	56.4	53.7	52.3	47.9	41.1	48.8
erp. Real equity ratio (%)	60.7	64.1	63.1	57.1	57.7	58.5	55.0	47.7	54.0
unp. Nominal return on total assets (%)	8.0	7.3	7.4	6.5	6.4	7.6	5.4	5.2	6.0
urp. Real return on total assets (%)	6.3	6.5	6.8	5.9	4.5	4.7	2.6	3.7	4.0
tnp. Nominal return on equity (%)	12.6	11.0	11.4	11.6	11.9	14.6	11.3	12.6	12.4
trp. Real return on equity (%)	10.4	10.2	10.8	10.3	7.9	8.0	4.7	7.8	7.4

higher) had 21 percent (23 percent) in terms of the nominal value and 34 percent (36 percent) in terms of the real value, "U.S.A." 49 percent (44 percent) in terms of the nominal value and 54 percent (51 percent) in terms of the real value, "U.K." 47 percent (45 percent) in terms of the nominal value and 68 percent (68 percent) in terms of the real value and "Germany" 35 percent (33 percent) in terms of the nominal value and 45 percent (47 percent) in terms of the real value. The maximum and minimum equity ratios by year were recorded at 40 percent (1954) and 15 percent (1976) in terms of the nominal value and at 44 percent (1954) and 26 percent (1976) in terms of the real value in "Japan", at 71 percent (1949) and 39 percent (1990) in terms of the nominal value and at 69 percent (1949) and 47 percent (1989) in terms of the real value in the "U.S.A.", at 66 percent (1959) and 42 percent (1976) in terms of the nominal value and at 71 percent (1980) and 57 percent (1970) in terms of the real value in the "U.K.", and at 57 percent (1950)

Table 3-1-1 MVC profit and Loss, Income Adjustment, Real Income, etc. and Related Data of Large Companies in the U.K. (Summary Table)

(in billion pounds)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'49-'90: (42 years)
aa. GPLA loss on debit items	-10.55	-3.76	-8.26	-16.08	-47.89	-62.36	-40.24	-51.51	-242.81
ab. MVC profit on credit items	12.65	5.18	12.95	27.02	93.06	119.84	73.93	101.58	448.75
ac. Net MVC profit (aa+ab)	2.10	1.42	4.70	10.94	45.17	57.48	33.69	50.07	205.94
ba. Revenue shortage	2.06	1.53	2.00	3.41	9.02	11.97	6.12	10.44	47.20
bb. Expense shortage except depreciation	-0.06	-0.06	-0.07	-0.23	-0.70	-0.73	-0.28	-0.35	-2.50
bba. Depreciation shortage	-6.31	-8.05	-6.58	-11.45	-26.94	-81.49	-88.33	-54.26	-284.44
bc. Net expense shortage(ba+bb+bba)	-5.23	-7.15	-5.27	-9.19	-21.36	-73.60	-84.30	-46.45	-253.24
ca. Income adjustment (ac+bc)	-3.13	-5.72	-0.58	1.74	23.81	-16.12	-50.61	3.62	-47.30
cb. Nominal income	37.31	46.83	54.40	59.81	64.37	94.88	95.05	193.17	660.21
cc. Real income (ca+cb)	34.18	41.11	53.82	61.55	88.18	78.75	44.44	196.79	612.91
ad. MVC profit in short-period credit and debt	-0.28	0.17	0.73	3.02	18.14	28.64	21.72	12.64	84.71
ae. MVC profit in long-period credit and debt	2.38	1.25	3.96	7.92	27.03	28.84	11.98	37.43	121.23
Retail price index at year-end	39.0~ 46.2	46.6~ 50.6	52.8~ 59.5	61.7~ 57.6	82.4~ 146.0	168.0~ 275.6	308.8~ 358.5	378.9~ 512.5	33.9~ 512.5
Number of companies	2865~ 2913	2960~ 2618	2173~ 2198	2109~ 1308	1239~ 1044	1006~ 1921	2213~ 1813	1720~ 1896	2704~ 1896

Table 3-2-1 Ratio of MVC profit, Income Adjustment and Real Income to nominal income and Related Data of Large Companies in the U.K.

(in percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'49-'90: (42 years)
aa. MVC loss on debit items	-28.3	-8.0	-15.2	-26.9	-74.4	-65.7	-42.3	-26.7	-36.8
ab. MVC profit on credit items	33.9	11.1	23.8	45.2	144.6	126.3	77.8	52.6	68.0
ac. Net MVC profit (aa+ab)	5.6	3.0	8.6	18.3	70.2	60.6	35.4	25.9	31.2
ba. Revenue shortage	5.5	3.3	3.7	5.7	14.0	12.6	6.4	5.4	7.1
bb. Expense shortage except depreciation	-0.2	-0.1	-0.1	-0.4	-1.1	-0.8	-0.3	-0.2	-0.4
bba. Depreciation shortage	-16.9	-17.2	-12.1	-19.1	-41.8	-85.9	-92.9	-28.1	-43.1
bc. Net expense shortage (ba+bb+bba)	-14.0	-15.3	-9.7	-15.4	-33.2	-77.6	-88.7	-24.0	-38.4
ca. Income adjustment (ac+bc)	-8.4	-12.2	-1.1	2.9	37.0	-17.0	-53.2	1.9	-7.2
cc. Real income (ca+cb)	91.6	87.8	98.9	102.9	137.0	83.0	46.8	101.9	92.8
bbb. Depreciation shortage/Nominal depreciation	43.0	34.3	20.1	28.6	66.3	145.1	114.6	50.0	71.5
wnp. Return on sales (nominal)	-	-	-	18.9	3.9	3.8	3.2	5.5	6.0
wrp. Return on sales (real)	-	-	-	18.8	5.0	3.0	1.4	5.5	5.4

and 30 percent (1989) in terms of the nominal value and at 56 percent (1950) and 42 percent (1958) in terms of the real value in "Germany".

Over the "whole period", all of the "four countries" showed a moderate decrease in nominal equity ratio M , while real equity ratio J was higher than M in "Japan." After a gradual decrease had continued until 1971, "Japan" showed a rapid increase in J in 1977, followed by a level-off. The "U.S.A." had J lower than M until 1967. The difference between J and M in the "U.S.A.," however, showed a gradual decrease. The "U.S.A." had J higher than M since 1968, while it had an increase in J in 1973 and 1974, being leveled off in J except these two years.

For the relation of equity ratios of 1990 to 1950 by country, "Japan" had the nominal value decreased by 6 percent and the real value increased by 18 percent, "U.S.A." the nominal value decreased by 42 percent and the real value decreased by 30 percent, "U.K." the nominal value decreased by 34 percent and the real value decreased by 2 percent only, the nominal value decreased by 47 percent and the real value decreased by 20 percent,

Since the level of nominal equity ratios showed a significant difference among the "four countries", grasping gaps between real equity ratio J and nominal equity ra-

Table 3-3-1 GPL Adjusted, Equity and Related Data of Large Companies in U.K. (Summary Table)
(billion pound, percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'49-'90: (42 years)
l. Liabilities(except specific reserve)	45.5	58.3	80.9	113.4	140.4	189.4	243.5	337.7	145.9
tn. Nominal equity	86.8	108.4	127.2	125.8	115.0	156.5	209.0	279.0	147.9
kn. (capital stock, etc.)	35.8	46.4	57.9	52.8	38.2	31.4	34.9	47.9	42.8
sn. (earned surplus)	51.0	61.9	69.2	75.6	76.8	125.1	174.1	231.1	105.1
tr. Real equity	103.4	125.4	146.4	165.9	225.6	410.8	549.7	668.8	289.2
kr. (capital stock, etc.)	44.6	61.1	79.9	85.0	90.9	132.3	168.4	182.1	103.4
sr. (earned surplus)	58.7	64.3	66.5	80.8	134.7	278.5	381.4	476.7	185.7
tr/tn. Real equity ÷ Nominal equity (%)	119.1	115.7	115.1	129.1	196.1	262.6	263.0	239.7	195.5
kr/kn. Real capital stock, etc. ÷ Nominal equity stock, etc.(%)	124.7	131.5	137.9	160.9	237.8	421.6	481.8	400.7	241.8
sr/sn. Real earned surplus ÷ Nominal earned surplus (%)	115.2	103.9	96.1	106.9	175.4	222.7	219.1	206.3	176.7
cbe. Total nominal income from 1949 to current period	35.9	78.2	129.3	187.6	253.6	450.9	628.0	780.1	303.3
cce. Total real income from 1949 to current period	34.5	71.0	119.5	177.8	255.6	448.5	577.4	705.3	285.0
qe. Total outflow (outside distribution) from 1949 to current period	13.2	30.5	54.2	84.9	117.4	197.7	273.1	341.1	132.6
qnep. Cumulative outside distribution ratio (nominal) (%) (qe/cbe)	36.8	39.0	41.9	45.3	46.3	43.9	43.5	43.7	43.7
qrep. Cumulative outside distribution ratio (real) (%) (qe/cce)	38.3	43.0	45.3	47.8	45.9	44.1	47.3	48.4	46.5
qnp. Outside distribution ratio (nominal) (%)	37.7	43.0	46.6	57.9	42.1	33.6	46.6	44.5	43.7
qrp. Outside distribution ratio (real) (%)	41.2	49.0	47.1	56.3	30.8	40.5	99.6	43.5	47.0
enp. Nominal equity ratio (%)	65.7	65.0	61.1	52.9	44.6	45.5	46.2	45.1	46.5
erp. Real equity ratio (%)	69.5	68.3	64.4	59.3	62.2	68.6	69.3	66.3	67.2
unp. Nominal return on total assets (%)	5.7	5.6	5.2	5.0	4.9	5.5	4.2	6.2	5.5
urp. Real return on total assets (%)	4.6	4.5	4.8	4.4	4.8	2.6	1.2	3.9	3.0
tnp. Nominal return on equity (%)	8.6	8.7	8.6	9.4	11.0	12.0	9.2	13.8	11.7
trp. Real return on equity (%)	6.6	6.6	7.4	7.5	7.7	3.8	1.7	5.9	4.5

tio M , therefore, required the calculation of the value of J/M . For J/M averaged for the whole period, "Japan" had the value at 162 percent (157 percent), the "U.S.A." at 111 percent (116 percent), "U.K." at 146 percent (149 percent) and the "Germany" at 131 percent (143 percent). The maximum and minimum values of J/M were respectively recorded by "Japan" and "U.S.A." For transition in J/M for the "whole period", "U.K." and "Germany" showed a gradual increase (with the gap between J and M widening), while the "U.S.A.", in spite of its gradual increase, had a long period when J was smaller than M (it was since 1968 that "U.S.A." had J larger than M). During the period when J was smaller than M , their difference was gradually decreasing. After J became larger than M , the "U.S.A." had the gap gradually broader. "Japan" showed widening of the gap until 1977 and a gradual decrease after then. In the "U.K.", J showed

Table 4-1-1 MVC Profit and Loss, Income Adjustment, Real Income etc. and Related Data of Large Companies (Mining and Manufacturing only) in Germany (Summary Table)
(in billion Deutsche Mark)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
aa. MVC loss on debit items	2.64	4.04	10.62	10.56	39.03	33.39	32.81	25.48	158.05
ab. MVC profit on credit items	5.63	10.00	27.14	23.82	88.84	69.25	58.06	32.84	314.55
ac. Net MVC profit (aa+ab)	2.99	5.96	16.52	13.26	49.81	35.86	25.24	7.36	156.50
ba. Revenue shortage	2.96	3.56	18.65	18.09	66.88	43.52	21.65	20.39	196.11
bb. Expense Shortage except depreciation	-2.36	-2.80	-16.86	-16.50	-62.12	-40.97	-18.98	-19.23	-180.16
bba. Depreciation shortage	-4.77	-7.75	-16.40	21.69	-42.57	-48.90	-42.61	-33.20	-218.07
bc. Net expense shortage (ba+bb+bba)	-4.17	-6.99	-14.61	-20.11	-37.82	-46.35	-39.94	-32.04	-202.12
ca. Income adjustment (ac+bc)	-1.18	-1.03	1.91	-6.84	11.99	-10.49	-14.69	-24.68	-45.62
cb. Nominal income	8.93	24.90	49.24	61.39	48.74	55.14	53.15	69.29	372.23
cc. Real income (ca+cb)	7.75	23.87	51.15	54.54	60.73	44.65	38.46	44.62	326.61
ab. MVC profit in short-period credit and debt	1.33	1.45	3.36	2.44	11.95	8.70	1.34	3.20	33.43
ae. MVC profit in long-period credit and debt	1.65	4.51	13.16	10.82	37.86	27.15	23.90	4.16	123.07
Living expense index at the year-end	72.2~ 72.2	73.5~ 78.3	80.4~ 90.0	93.2~ 101.2	107.3~ 136.5	141.8~ 165.6	176.1~ 197.4	195.1~ 211.8	65.2~ 211.8
Number of companies	1000~ 1142	1232~ 1201	1171~ 1150	1043~ 895	850~ 836	824~ 770	821~ 743	704~ 860	1000~ 860

Table 4-2-1 Ratio of MVC profit, Income Adjustment and Real Income to nominal income and Related Data of Large Companies (Manufacturing Businesses only) in Germany
(in percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
aa. GPLA loss on debit items	30	16	22	17	80	61	62	37	42
ab. MVC profit on credit items	63	40	55	39	182	126	109	47	85
ac. Net MVC profit (aa+ab)	33	24	34	22	102	65	47	11	42
ba. Revenue shortage	33	14	38	29	137	79	41	29	53
bb. Expense shortage except depreciation	-26	-11	-34	-27	-127	-74	-36	-28	-48
bba. Depreciation expense shortage	-53	-31	-33	-35	-87	-89	-80	-48	-59
bc. Net expense shortage (ba+bb+bba)	-47	-28	-30	-33	-78	84	-75	-46	-54
ca. Income adjustment (ac+bc)	-13	-4	4	-11	25	-19	-28	-36	-12
cc. Real income (ca+cb)	87	96	104	89	125	81	72	64	88
bbb. Depreciation shortage/Nominal depreciation	10	10	15	16	29	32	24	17	21
wnp. Return on sales (nominal)	3.3	5.1	2.8	3.0	1.9	1.7	1.4	1.9	1.9
wrp. Return on sales (real)	2.9	4.8	2.9	2.7	2.2	1.4	1.0	1.2	1.6

transition pattern similar to M (leveling off or gradual decrease) until 1967, keeping higher by several percent than M . However, J did not drop so remarkably as M until 1970 thereafter. Then, M showed a gradual decrease in spite of the increase of J , so the gap between J and M widened, but it leveled off since 1980. Finally, J in the "Germany" had almost leveled off within a range between 42 and 50 percent since 1953, but its difference from M increased along with a continual decrease of M since 1969.

For J/M on "five-year average," all of the "four countries" showed the highest rate of growth in the period of "1971 through 1975" as compared with the preceding five-year period. This period included the year when J reached the bottom or had a turning point in "Japan," "U.S.A." and "U.K.." (Since this year, the "three countries" except "Japan" showed an increase in J in spite of continued decrease of M , so the gap between J and M widened.)

4. A comparison of various income ratios among "four countries" is mentioned as below.

4a. For the Return on total Assets (equity and liabilities) as averaged for the "whole period" (for the "latest decade" as parenthesized), "Japan" had 1.8 percent (1.9

Table 4-3-1 GPL Adjusted Equity and Related Data of Large Companies (Mining and Manufacturing Industry only) in Germany (Summary Table)

(billion Deutsche Mark; percent)

	'51-'55:	'56-'60:	'61-'65:	'66-'70:	'71-'75:	'76-'80:	'81-'85:	'86-'90:	'50-'90: (41 years)
I. Liabilities	72.1	129.8	186.1	229.1	305.2	367.0	335.9	426.9	251.3
tn. . Nominal equity	63.4	92.2	127.7	154.6	162.8	172.8	176.6	198.0	141.4
kn. (capital stock, etc.)	37.7	52.6	71.6	78.8	78.6	77.5	74.6	105.3	71.2
sn. (earned surplus)	25.7	39.6	56.1	75.8	84.2	95.3	102.0	92.7	70.2
tr. Real equity	61.9	95.7	137.7	181.6	241.4	281.1	316.7	364.6	206.2
kr. (capital stock, etc.)	37.7	52.5	74.4	94.2	114.4	128.1	139.8	207.1	104.3
sr. . (earned surplus)	24.2	43.2	63.3	87.4	127.0	153.0	176.9	157.5	102.0
tr/tn. . Real equity ÷ Nominal equity (%)	97.6	103.7	107.8	117.4	148.3	162.7	179.3	184.2	145.9
kr/kn. Real capital stock, etc. ÷ Nominal equity stock, etc.(%)	99.9	99.7	103.9	119.6	145.5	165.4	187.3	196.8	146.5
sr/sn Real earned surplus ÷ Nominal earned surplus (%)	94.1	109.0	112.8	115.3	150.8	160.5	173.4	170.0	145.3
cbg. Total nominal income from 1950 to current period	6.2	23.6	63.2	119.6	176.5	229.7	277.2	345.1	151.4
cgc. Total real income from 1950 to current period	5.2	21.9	61.4	113.3	178.8	224.4	264.6	307.7	143.7
qg. Total outflow (outside distribution) from 1950 to current period	3.8	17.3	47.3	84.7	130.0	170.3	207.6	246.4	110.8
qngp. Cumulative outside distribution ratio (nominal) (%) (qg/cbg)	62.3	73.2	74.8	71.6	73.6	74.2	74.9	71.4	73.2
qrgp. Cumulative outside distribution ratio (real) (%) (qg/cgc)	74.1	79.0	77.0	75.6	72.7	75.9	78.5	80.1	77.2
qnp. Outside distribution ratio (nominal) (%)	66.7	79.8	7.33	66.8	87.8	73.2	64.5	62.7	71.1
grp. Outside distribution ratio (real) (%)	76.9	83.2	70.6	75.2	70.5	90.4	89.1	97.4	81.0
enp. Nominal equity ratio (%)	46.8	41.5	40.7	40.3	34.7	32.0	34.5	31.6	34.7
erpp. Real equity ratio (%)	46.2	42.4	42.5	44.2	44.2	43.4	48.5	46.0	45.5
unp. Nominal return on total assets (%)	1.32	2.25	3.14	3.20	2.06	2.03	2.09	2.21	2.25
urp. Real return on total assets (%)	1.35	2.23	3.08	3.02	1.80	1.71	1.66	1.75	1.90
tnp. Nominal return on equity (%)	2.82	5.42	7.73	7.96	5.94	6.34	6.07	6.99	6.49
unp. Real return on equity (%)	2.92	5.26	7.24	6.82	4.08	3.94	3.42	3.81	4.17

Table G Comparison of Equity Ratio of Large Companies in Japan, U.S.A., U.K. and Germany
(unit: percent)

		Japan		U.S.A.	U.K.	Germany
		A	B			
Nominal equity ratio M	1951-1960	33	35	65	65	43
	1961-1970	22	24	59	56	40
	1971-1980	16	18	53	45	33
	1981-1990	23	23	44	45	33
	whole period	21	22	49	47	35
Real equity ratio J	1951-1960	39	41	63	69	44
	1961-1970	30	32	59	61	44
	1971-1980	31	33	58	68	44
	1981-1990	36	37	51	68	47
	whole period	34	36	54	68	45
Real equity ratio/Nominal equity ratio J/M	1951-1960	117	117	96	105	101
	1961-1970	138	137	100	109	108
	1971-1980	192	187	110	150	132
	1981-1990	157	161	116	149	143
	whole period	162	164	111	146	131

percent) in terms of the nominal value and 1.6 percent (1.5 percent) in terms of the real value, "U.S.A." 6.0 percent (5.3 percent) in terms of the nominal value and 4.0 percent (3.7 percent) in terms of the real value, "U.K." 5.5 percent (5.5 percent) in terms of the nominal value and 3.0 percent (2.8 percent) in terms of the real value, and "Germany". 2.3 percent (2.2 percent) in terms of the nominal value and 1.9 percent (1.7 percent) in terms of the real value. All the "three countries" other than "Japan" (but similar to other countries in the 1980s) had their real return on total assets (equity and liabilities) smaller than the nominal values. This reflects the fact that real income $\bar{P}$ is smaller than nominal income P (or the real return on total assets to the nominal one exceeds $\bar{P}/P$, even if $\bar{P}$ is larger than P). For transition by decade, "U.K." showed a gradual decrease in both nominal and real values, "Japan" and "U.S.A." had a gradual decrease in a real value. The "Germany" on the other hand, showed a high level of both nominal and real values in the 1960s, followed by a declining trend. "U.S.A." had rather a low nominal value in the 1960s and the value increase for the subsequent decade, followed by another decrease.

4b. For a return on (stockholder's) equity as averaged for the "whole period", "Japan" had 8.6 percent (8.1 percent) in terms of the nominal value and 4.7 percent (4.0 percent) in terms of the real value, "U.S.A." 12.4 percent (12.6 percent) in terms of the nominal value and 7.4 percent (7.8 percent) in terms of the real value, "U.K." 11.7 percent (12.1 percent) in terms of the nominal value and 6.4 percent (5.9 percent) in terms of the real value, and "Germany" 6.5 percent (6.6 percent) in terms of the nominal value and 4.2 percent (3.6 percent) in terms of the real value. All of the "four countries" showed their real values of smaller than nominal ones. This is attributable to the fact that $\bar{P}$ was smaller than P (in case of "Japan", $\bar{P}$ had been larger than P until 1974 but

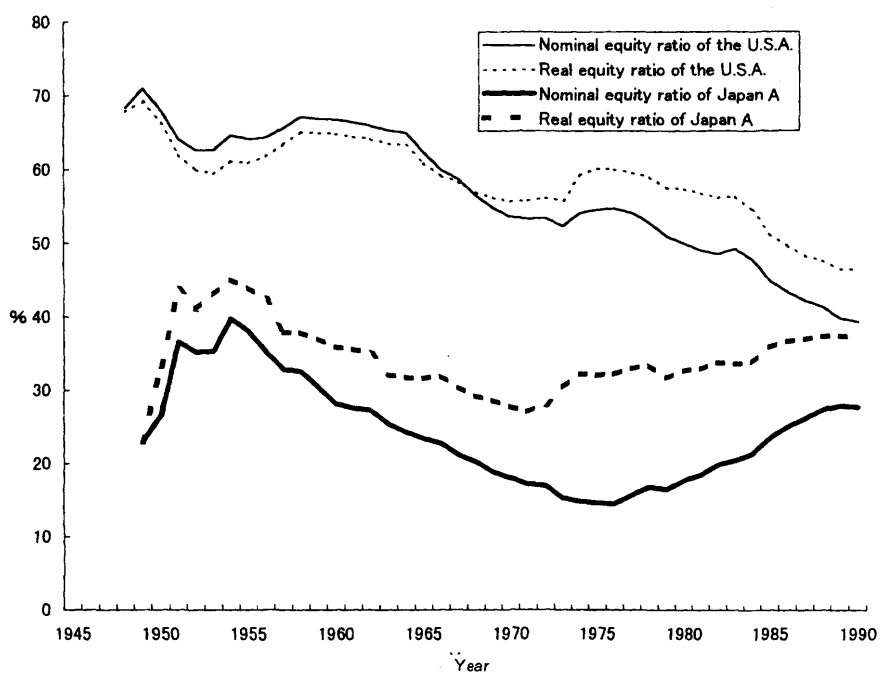


Fig. 1 Equity Ratio of Large Companies in Japan A and U.S.A.

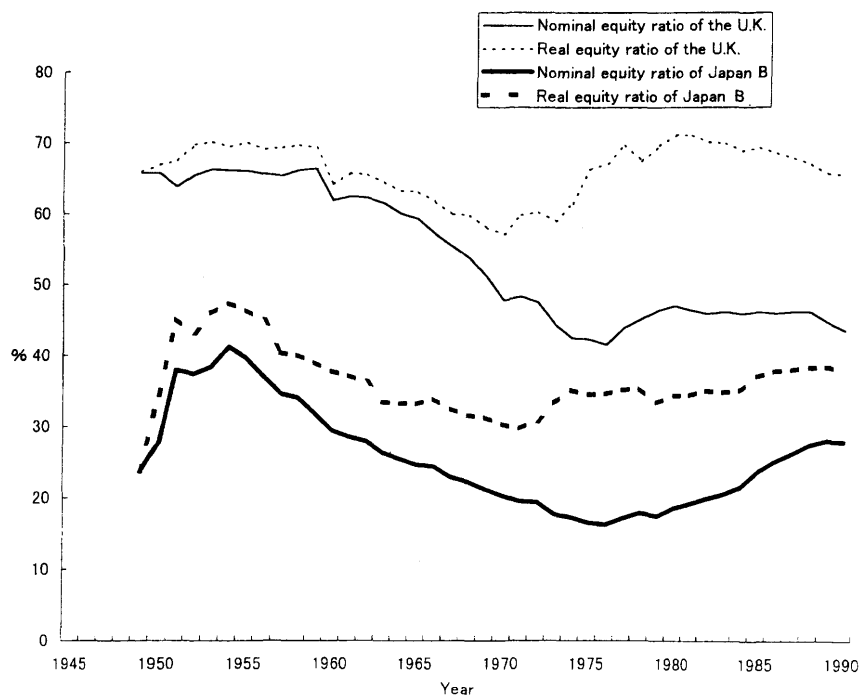


Fig. 2 Equity Ratio of Large Companies in Japan B and U.K.

the ratio of real equity to nominal equity exceeded $\bar{P}/P$). For transition by decade, all of the "four countries" showed a high level of both nominal and real values in the 1960s except the nominal values in "U.S.A." and "U.K."

Comparing the return on total equity and liabilities with the return on stockholders' equity shows that the latter had a wider gap between real and nominal values in all the countries for almost all years of the whole period, especially remarkable for the latest decade. This is because the ratio of real values to nominal ones in equity was larger than that in total equity and liability, since liabilities were in equal amount both in nominal and real values.

4c. For return on sales (ratio of income to net sales) as averaged for the "whole period", "Japan" had 1.4 percent (1.4 percent) in terms of the nominal value and 1.5 percent (1.3 percent) in terms of the real value, the "U.S.A." 5.5 percent (5.1 percent) in terms of the nominal value and 4.0 percent (3.5 percent) in terms of the real value, and "Germany" 2.4 percent (1.8 percent) in terms of the nominal value and 2.1 percent (1.6 percent) in terms of the real value (for the period for 30 years from 1961, since no sales had been disclosed on the semi-gross [halb-Brutto] principle prior until 1960). "Japan" had a real value larger than a nominal one until the first half of the 1970s. The real-nominal relations were reverse as for "Japan" since the second half of the 1970s, "U.S.A." and the "Germany", because the real-to-nominal value ratio was almost corresponding to the real-to-nominal income ratio. For the "U.K.", the sales were shown only since 1969, so it showed, as averaged only from "1970 to 1990", 3.7 percent in terms of the nominal value and 4.2 percent in terms of the real value.

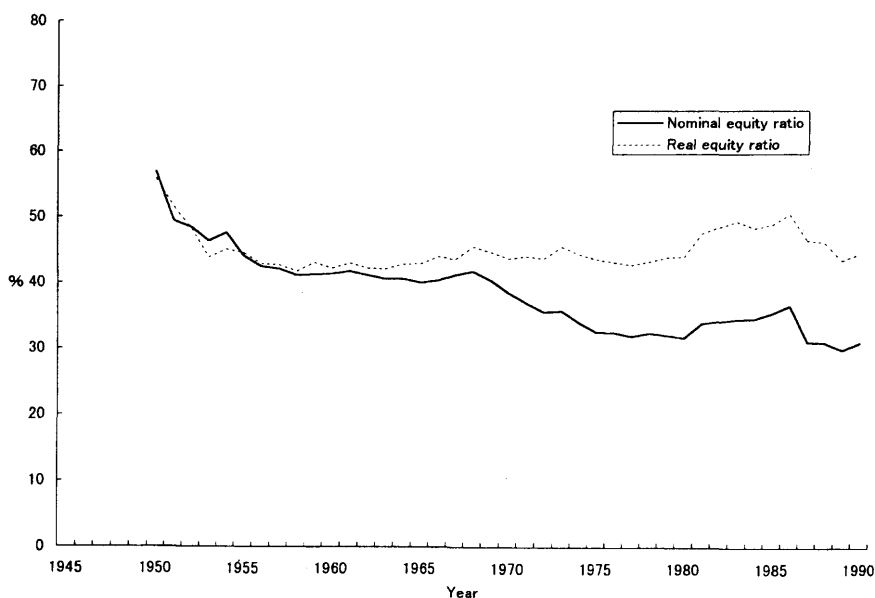


Fig. 3 Equity Ratio of Large Companies in Germany

VI Some Propositions Obtained from Comparing And Studying GPL Adjusted Data on Financial Statements of Large Companies in Japan, U.S.A., U.K. and Germany

This paper has principal purpose of showing the GPL adjusted data on financial statements of the large companies in "Japan", "U.S.A.", "U.K." and "Germany". The data, therefore, were not analyzed here in detail. From the related formulas and such data, however, the following could be at least clarified:

1. The higher the level of general prices rising (or fluctuating) in a year or term, the larger the adjustment difference with nominal amounts of various items will occur in that year or term and then the larger growth with previous year will also be found. Since this tendency may be amplified or offset by the changes in item composition or similar factors, it will be impossible to generalize it on a comprehensive basis. (The same applies to the analyses mentioned hereafter.) As far as "average value for the decade" is concerned, for example, all of the "four countries" had higher ratios of net MVC profits and losses, depreciation expense shortage, net cost shortage and income adjustment to their respective nominal income in "the 1970s" when general prices showed the highest rate of increase. (Almost all the individual years when such items showed their maxima were found in the 1970s.) in the 1970s, besides, the ratios of real outside distribution to their nominal outside distribution ratios (either monoannual or cumulative), J/M , $(\bar{K} + \bar{S}) / (K + S)$, $\bar{K}/K$, $\bar{S}/S$, real return on assets (equity and liabilities), real return on (shareholders') equity fluctuated at a considerable rate as compared with the preceding decade or the 1960s. (Refer to Tables F, G and H.)

2. Applying the GPLA would enlarge the fluctuations of incomes (as compared with the preceding year) in comparison with the nominal capital accounting. This has been found in the fact that there was a relatively small number of years (except the case of "U.K.") that showed a income adjustment ratio not more than plus/minus 10

Table H A Comparison of Profit of Large Companies in Japan, U.S.A., U.K. and Germany
(unit: percent)

		Japan		U.S.A.		U.K.		Germany	
		Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
Return on total assets	1951-1960	2.6	2.8	7.6	6.4	5.6	4.5	1.9	1.9
	1961-1970	2.3	2.4	6.8	6.2	5.1	4.6	3.2	3.0
	1971-1980	1.5	1.5	7.2	4.6	5.3	3.0	2.0	1.7
	1981-1990	1.9	1.5	5.3	3.7	5.5	2.8	2.2	1.7
	whole period	1.8	1.6	6.0	4.0	5.5	3.0	2.3	1.9
Return on equity	1951-1960	7.9	7.2	11.6	10.2	8.6	6.6	4.4	4.4
	1961-1970	10.4	8.0	11.5	10.5	10.5	7.4	7.9	7.0
	1971-1980	9.5	5.0	13.5	13.5	7.9	4.5	6.2	4.0
	1981-1990	8.1	4.0	12.6	12.6	7.8	4.2	6.6	3.6
	whole period	8.6	4.7	12.4	12.4	7.4	4.4	6.5	4.2
Return on sales	1951-1960	2.4	2.8	6.4	5.0	—	—	—	—
	1961-1970	2.1	2.6	6.1	5.5	—	—	2.9	2.8
	1971-1980	1.2	1.5	5.9	4.2	3.8	3.8	1.8	1.7
	1981-1990	1.4	1.3	5.1	3.5	4.4	3.6	1.7	1.1
	whole period	1.4	1.5	5.5	4.0	—	—	—	—

percent throughout the "whole period", being counted at 10 years for "Japan," at 5 years for "U.S.A.", at 18 years for "U.K." and at 13 years in "Germany". As already mentioned¹⁶⁾, the income adjustment ratio reached 193 percent at the maximum and -144 percent (maximum for negative). Besides, the year whose real income $\bar{P}$ was lower than nominal income P as compared with the preceding year was limited to 25 percent only throughout the "whole period" in the "four countries".

3. Ratios of revenue shortage to expense shortage except depreciation were not so different for any year of each country. (For the "U.K.", no data were available in this regard but it seems similar from the income adjustment formula given in this paper.) Therefore, income adjustment is significantly affected by the magnitude of net MVC profit and loss and depreciation shortage. As shown in Table 1-2-1, etc. and Table C, an algebraic sum of net MVC profit ratio and depreciation shortage ratio occupies a major portion of the income adjustment ratio, which will vary depending upon the correlation between such net MVC profit ratio and depreciation shortage ratio. On a "whole-period basis", for example, "Japan" only had $\bar{P}$ larger than P ($\bar{P}$ smaller than P in all of the "three countries" except "Japan"). The "U.S.A." and "U.K." had $\bar{P}/P$ at 76 percent and at 93 percent, respectively, showing a difference larger than that in depreciation shortage ratios. This is seemingly caused by the difference in net MVC profit ratios (6 percent and 31 percent, respectively).

4. There is a "view" that "under an inflationary situation, the nominal capital accounting practices would always produce an fictitious income ($\bar{P}$ smaller than P) which companies will live off their capital (capital deficit)", but such theory is apparently incorrect judging from the income adjustment formula¹⁷⁾ in this paper. At present, it has been generally recognized that debtors profit will arise and therefore this "view" seems to have been dissolved. It is further clarified that a company would not always live off its capital (principal-capital stock and capital surplus), even in case of $\bar{P}$ smaller than P (accrual of fictitious income). As seen in the "U.S.A.", any company would never live off its capital at all, on its capital at all as long as $\bar{S}$ existed (unless the cumulative real income has exceeded the cumulative outside distribution), even with $\bar{P}$ smaller than P in every year (throughout the "whole period").—until 1978, it would not turn negative although $\bar{S}$ was smaller than $\bar{S}$ and since 1979 $\bar{S}$ would turn larger than $\bar{S}$.

On monoannual basis, the case where outside distribution Q exceeded $\bar{P}$ (with $Q/\bar{P}$ in excess of 100 percent) took place in 1954 (211 percent), 1957 (119 percent), 1975 (102 percent), 1978 (203 percent) and 1979 (142 percent) for "Japan", in 1982 (133 percent), 1983 (108 percent) and 1985 (120 percent) for the "U.S.A.", in 1982 (125 percent) and 1983 (314 percent) for the "U.K.") and in 1975 (117 percent), 1977 (297 percent), 1978 (108 percent), 1982 (138 percent), 1983 (108 percent), 1984 (101 percent) and 1987 (158 percent) in "Germany" (in any case $\bar{P}$ smaller than P). In 1952 and 1953, "Ger-

16) See p.13 in this paper.

17) See p.5 in this paper.

many" had outside distribution performed although a real loss arose (with the nominal income positive). In any case, however, the cumulative real outside distribution ratio was less than 100 percent (with the maximum recorded at 97 percent by "Germany" in 1974). As long as it is understood that the disposable profit contains, it could be clearly gathered that capital deficit did not occur. The cases where a monoannual nominal outside distribution ratio exceeded 100 percent were experienced in "Germany" in 1974 (103 percent), 1975 (108 percent) and 1977 (126 percent). Even in such cases, the cumulative outside distribution ratio remained at 100 percent or under in both nominal and real. From the above-mentioned point of view, the capital would never be lived off so long as the cumulative real outside distribution ratio does not exceed 100 percent, even with an outside distribution made in the event of fictitious income (with $\bar{P}$ smaller than P). (Redundantly, P as used in this paper stands for an after (post)-tax income in every country, so taxation would not naturally cause a deficit on its capital.) So far as the cumulative nominal outside distribution ratio does not exceed 100 percent (the cumulative nominal outside distribution ratio is not institutionally allowed to exceed 100 percent, in principle), the real outside distribution ratio (monoannual or cumulative) may only exceed the nominal outside distribution ratio (monoannual or cumulative) without occurring the capital to be lived off.

5. Between monoannual real outside distribution ratio $Q/\bar{P}$ and monoannual nominal outside distribution ratio Q/P , there is a relation of $Q/\bar{P} = Q/P \div \bar{P}/P$. With $\bar{P}$ larger than P , therefore, $Q/\bar{P}$ will be smaller than Q/P . This relation will be reversed, with $\bar{P}$ smaller than P . The larger an absolute value of the income adjustment ratio ($|\bar{P}/P - 1|$), the larger the gap between $Q/\bar{P}$ and Q/P will be.

Between cumulative real outside distribution ratio $\Sigma Q/\Sigma \bar{P}$ and cumulative nominal outside distribution ratio $\Sigma Q/\Sigma P$, there is a relation of $\Sigma Q/\Sigma \bar{P} = \Sigma Q/\Sigma P \div \Sigma \bar{P}/\Sigma P$. If the cumulative real income should exceed the cumulative nominal income, the cumulative real outside distribution ratio will be smaller than the cumulative nominal outside distribution ratio (in case of "Japan") and contrarily to the case of the "U.S.A.", "U.K." and "Germany".

For a relation between monoannual and cumulative outside distribution ratios, both in nominal and real values, the cumulative outside distribution ratios fluctuate at a lower rate than that of the monoannual outside distribution ratio, since both nominal and real incomes have a lower rate of changing cumulatively than monoannually.

For more specific details relating to the above, refer to Table 1-3-1, etc. and Table F "A Comparison of Related Ratios."

6. Nominal (earned) surplus (converted amount) S_k^i could not be expressed in formula P , Q and T ¹⁸⁾, $\bar{S}/S$, therefore, could not be formularized. Real (earned) surplus $\bar{S}_k^i$ and nominal (earned) surplus absolute amount S_k could be formularized¹⁹⁾. Nevertheless, their relations are complicated. Discussion here in this paper is restricted to

18) Nakai, B. [1980] p. 41

19) Nakai, B. [1980] p. 38

a brief analysis of tendency of the S - P - Q relation based on the data for adjustment calculation. (For T , no data were available in "Japan", "U.K." and "Germany". "U.S.A." is also ignored due to its light weight to the S - P - Q relation. Judging from the significant position of earned surplus among the total surplus, "U.K." and "Germany" are assumed to have a tendency similar to "Japan" and "U.S.A." as far as they are concerned with surplus.)

For "five-year totals" (or average amounts) in the "four countries" (almost similarly on yearly basis), real surplus $\bar{S}$ was larger than nominal surplus S , when cumulative real income $\Sigma\bar{P}$ was larger than cumulative nominal income ΣP . (In "Japan", real income $\bar{P}$ was larger than nominal income P for "1951 through 1975" but $\bar{P}$ was smaller than P for "1976 through 1990". However, this only reduced a rate of increase in $\Sigma\bar{P}/\Sigma P$ more or less and $\Sigma\bar{P}$ remained larger than ΣP .) There were many cases where $\bar{S}$ was smaller than S , with $\Sigma\bar{P}$ smaller than ΣP (with $\bar{P}$ was smaller than P in any case for "1951 through 1975" and for "1981 through 1990" in "U.S.A." for "1956 through 1970" in "U.K." and for "1951 through 1955" in "Germany"). With $\bar{S}$ larger than S (with $\Sigma\bar{P}$ smaller than ΣP), however, there were two cases; one where $\bar{P}$ was larger than P (for "1971 through 1990" in "U.K." and for "1961 through 1965" and "1971 through 1975" in the "Germany") and the other, to the contrary, where $\bar{P}$ was smaller than P (as seen in "1976 through 1980" in the "U.S.A.", "1951 through 1955" and "1976 through 1980" in "U.K." and "1956 through 1960", "1966 through 1970" and "1976 through 1990" in "Germany").

The smaller the cumulative negative adjustment of income (the smaller the difference between $\Sigma\bar{P}$ and ΣP) and the lower the cumulative real outside distribution ratio, the larger $\bar{S}/S$ would be. Conditionally with $\Sigma\bar{P}$, smaller than ΣP , therefore, $\bar{S}$ would be larger than S . A comparison of $\Sigma\bar{P}$ with ΣP given above is nothing but comparing the cumulative outside distribution ratio between real and nominal value only.

VII Limitation in Adjustment Calculation in this Paper

1. In the beginning of the year when the adjustment calculation began (at the end of the year preceding to that in which the adjustment calculations began, that is, end of the first half of 1950 for "Japan", end of 1947 for "U.S.A.", end of 1948 for "U.K." and end of 1949 for "Germany"), the items on B/S (credit - total equity and liabilities) were calculated for adjustment on the assumption that real amounts were equal to nominal ones, despite the fact that the circumstances on those days were in the process of inflation. Therefore, the effects of inflation in the past year were ignored. The income adjustment in each year was calculated correctly "anyway". The real amounts of "capital stock, etc. and surplus", however, more and more approximated their nominal amounts, with the year getting closer and closer to the time when the calculations for adjustment were started. As a result, $\bar{K}/K$, $\bar{S}/S$ and real equity ratio are considered to differ more and more from realities according as the year come closer to the initial stages of adjustment calculations as reported in this paper.

2. As mentioned above, the depreciation shortage occupied a high percentage of the income adjustment. For the "Germany", however, insufficient data disabled to estimate the number of fixed asset service years elapsed for the calculation of the depreciation shortage, which was in turn estimated to a certain number of rules. For the other "three countries", their data relating to "all industries" were assumed to be calculated by the straight-line method or by the fixed-percentage-on-declining-balance method. The data, therefore, are considered to differ from "realities" more significantly than the data obtained by totaling the results of adjusting the financial statements available from individual companies. The income adjustment and eventually the surplus adjustment are considered not so highly accurate because a slight change in estimated number of years elapsed might lead to a significant change in income adjustment²⁰⁾.

3. As mentioned above, calculation for adjustment are not based on financial statements issued by the companies to be studied themselves, but covers the whole companies through accumulated financial data of "whole industries" as the secondary materials. As a result, there is no periodic continuity among the companies with their data for calculating adjustment including number of companies and nominal financial numerical values. It was, therefore, impossible to strictly calculate for adjustment of the credit side of B/S . It was further impossible to compare the business terms accurately for income adjustment or similar matters.

Such limitations as mentioned above arise mainly from utilizing the "secondary materials", so it is impossible to be completely liberalized from such problems. Consequently, we have been forced to be satisfied with the success in finding a certain tendency in each country over a long period of time.

20) Nakai, B. [1981] "General Price-Level Adjustment Data of the Financial Statements of German Large Companies," *Oikonomika*, Vol. 18, No. 1, June 1981 (in Japanese), p.88.