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A NON-PROFIT MEMBERSHIP CORPORATION FOR IMPARTIAL STUDIES IN ECONOMIC AND SOCIAL SCIENCE

Revaluations of Fixed Assets, 1925-1934

SOLOMON FABRICANT

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SIGNIFICANCE OF REVALUATIONS

BALANCE sheet values of assets constitute essential data in estimates of wealth, capital, income and profits. Rational use of these estimates cannot be made by economists, statisticians or investors without some consideration of the manner in which assets are valued by business men and accountants.

Of particular interest at present are revaluations of fixed assets. The write-down in 1935 of the property account of the United States Steel Corporation by 270 million dollars, or 17 per cent of the net value in the account, is one spectacular instance. Business men are confronted by a dynamic situation in which price levels fluctuate, obsolescence of machines and plant becomes evident, profit-making opportunities appear and disappear, and business goodwill grows or vanishes. If their records are to reflect the changing reality about them, business men are forced to revalue their assets.

These revaluations possess considerable significance. They constitute clues to the formation and consumption of capital as it fluctuates with changes in tastes, technology and institutions. As such they are essential data in the analysis of changes in capital that is being made at the National Bureau.¹ From another point of view they reflect the discrepancies between original cost and capitalized value that arise from perpetual economic flux. Further, revaluations constitute exceptions to the usual rules of accounting. Their number and amount suggest the degree to which accounting technique has been kept in its place as a servant. For rules and procedures tend to become tyrants: they acquire the dignity and influence of custom and their origin and purpose are lost sight of.

¹"Gross Capital Formation, 1919-1933" (*Bulletin 52*, November 15, 1934) and "Measures of Capital Consumption, 1919-1933" (*Bulletin 60*, June 30, 1936).

The 'book values' found in accounting records do not represent past or present market values in any simple manner. Deductions from original cost, manifested by estimates of reserves for depreciation and depletion, and revaluations through write-ups and write-downs, give rise to book values that reflect neither original cost nor present market value. They are the product of a valuation process going on beside the market-place, not in it. Economists have envisaged an extension of value theory to this valuation process outside the market.² The results of our investigation are offered as a contribution towards such a supplement to the theory of market value: the theory of book value.

How important are revaluations of assets? How many concerns enter write-ups and write-downs in their books? Which particular groups of fixed assets are especially involved? Do the number and amount of revaluations vary from time to time? What reasons are usually offered in justification of revaluations? In what way may they be expected to affect computations of profits and other economic measures? These are some of the questions considered in this *Bulletin*.

THE DATA AND THEIR CHARACTERISTICS

Our analysis is based on data novel in degree of detail and comparability. They are derived from reports made by listed industrial corporations to the Securities and Exchange Commission. As sworn statements, certified by public accountants, and made in reply to a uniform and specific question, they lend themselves readily to summary.

The question asked concerning write-ups and write-downs, which appears in 'Form 10, Application for Registration Pursuant to Section 12 (b) and (c) of the Securities Exchange Act of 1934', is as follows:

²David Friday, "An Extension of Value Theory", *Quarterly Journal of Economics*, February 1922.

If, since January 1, 1925, there have been any increases or decreases in *investments*, in *property*, *plant and equipment* or in *intangible assets*, resulting from substantially revaluing such assets, state:

- (1) In what year or years such revaluations were made.
- (2) The amounts of such write-ups or write-downs, and the accounts affected, including the contra entry or entries.
- (3) If, in connection with such revaluations, any adjustments were made in related reserve accounts, state the accounts and amounts, with explanations.

The 'Instruction Book for Form 10 for Corporations', in explanation of this question, states:

These items do not refer to adjustments made in the ordinary course of business, but only to major revaluations made for the purpose of entering in the books current values, reproduction costs, or any values other than original cost.

Our study is confined to an examination of reports of 208 large industrial concerns (mining and manufacturing chiefly, with a few from trade, construction and service) covering the years 1925-34, inclusive. The companies were chosen at random from the file of S. E. C. reports of the New York Stock Exchange and therefore include only corporations listed on it. Consolidated reports, rather than the individual reports of related companies, were used wherever possible.

The data are further limited in that only solvent companies in existence in 1934 are included. Revaluations of assets made by corporations prior to consolidation or liquidation are omitted. While these revaluations may reach large amounts per company, the number of concerns involved is small. Still another qualification, related to the preceding, is that only the history of the existing legal entity is fully covered.⁸ In our analysis corporations coming into existence before and after 1925 are distinguished to avoid the statistical errors that might otherwise arise.

The size of the sample may be judged by a comparison of the assets of the sample corporations with the assets of all corporations, in the comparable industrial groups, in the United States.

	ALL REPORTING CORPORATIONS 1933 ¹ (millions of dollars)	SAMPLE 1934	SAMPLE AS PERCENTAGE OF ALL CORPORATIONS
Property, plant and equipment	34,802	6,412	18.4
Investments	12,641	1,193	9.4
Total assets	84,246	11,684	13.9

¹ SOURCE: *Statistics of Income for 1933*. The 1934 figures are not yet available. Intangible assets are not published separately by the Treasury Department.

⁸ According to an amendment to the instruction book (Release No. 191, Securities Exchange Act of 1934, April 24, 1935) revaluation by predecessor companies must be included in Form 10 only if: "(1) The registrant is the successor to a predecessor and at the time of such succession continued under substantially the same ownership and control as such predecessor; and (2) the regis-

TOTAL NUMBER AND VOLUME OF REVALUATIONS

Of the 208 reports examined as many as 157 indicated some write-up or write-down during the ten years 1925-34. To the question whether there had been any substantial revaluation of investments, property, plant and equipment, or intangible assets, three-fourths of the companies answered in the affirmative.

Some companies, of course, were not in existence during this entire period, and therefore had less opportunity to revalue their assets.⁴ However, the difference in the proportion of companies reporting revaluations is slight, when we distinguish between those incorporated before and since January 1, 1925, 76 against 75 per cent. The largest proportion reporting revaluations, 86 per cent were companies organized during the War years 1915-20 (Table 1).

TABLE 1
CORPORATIONS REPORTING REVALUATIONS OF FIXED ASSETS,
1925-1934, NUMBER

PERIOD DURING WHICH INCORPORATED	CORPORATIONS IN SAMPLE (number)	CORPORATIONS REPORTING REVALUATIONS	
		Number	Percentage of total
Before 1901	33	24	73
1901-1914	47	30	64
1915-1920	57	49	86
1921-1924	16	13	81
Before 1925	153	116	76
1925-1934	55	41	75
Total	208	157	75

Most of the revaluations, as percentages of the amount of corresponding assets,⁵ were reported for intangible assets, investments being second, and property, plant and equipment last. In terms of actual amounts of revalua-

tant succeeded to: either (a) substantially all the assets of such predecessor; or (b) a substantial portion thereof and such portion was segregated on the books of such predecessor." It seems that before the date of this amendment there was no requirement that entries in the books of predecessors should be reported, and in fact they were omitted in most cases.

⁴ Of the 208 companies 55 have assumed a new legal habit since 1924—a large fraction, for many are really new only in a strictly legal sense. The relative number of new corporations emphasizes the need for paying attention to changes in capital and assets in the process of reorganization, consolidation, or modification of corporate being, in any adequate historical account of the course of profits and modifications in capital structures of business enterprises.

⁵ The importance of the revaluations is judged here in relation to the net book value of the corresponding assets at the end of 1934. Since some of the revaluations consisted of completely writing off an asset, the ratios derived may be very large, sometimes infinitely so. It would perhaps have been preferable to compare the amount of revaluations with the book value of the corresponding asset before revaluation. But the ratios used here are adequate for our purposes, and cost considerably less effort to obtain.

tions, however, the order is different. The amounts themselves are most significant in considering such matters as the evaluation of net worth. But in so far as the values of individual assets are concerned, the percentages are of primary interest (Table 2). Write-ups of property account were surprisingly small, the total for the decade falling well below depreciation charges for one year. For both intangibles and investments the percentages were much greater, 16 and 18 respectively.

Total write-downs exceeded write-ups of property, plant and equipment, and intangibles, and were roughly equal in investments. This preponderance of write-downs is in accord with what we know of the economic history of the period 1925-34. Write-ups during and immediately following the War probably exceeded write-downs, but that period lies outside the scope of the records analyzed here.

In percentages of the corresponding asset values in 1934, write-downs of property and equipment were apparently of minor importance, slightly exceeding 10 per cent. However, even on a per annum basis they formed an appreciable amount compared with depreciation and net income. And their significance is even greater, since it is their cumulative effect on book values that is of importance, and this is more closely measured by the total for the decade.⁶

⁶The totals are not *exact* measures of the cumulative effects because depreciation and depletion charges may eventually wipe out the book value of the asset and thus render revaluations only of passing influence on book values. For intangibles and investments and such tangible property as land, however, the situation is otherwise.

Write-downs of intangibles almost equaled their final net book value. Of course, one reason for the large relative amount of write-downs of intangibles is that the book values used are those after revaluation, not before. But that the ratio would be large in any event is to be expected from the nature of the asset. No one can accurately measure the value of goodwill, patents or trademarks; consequently, all valuations are suspect and subject to correction, and as we shall see later, influenced by the prevailing state of business hopes. It is for this reason that intangibles are so often written down, or written off, or never allowed to appear in the balance sheet. Of the 208 corporations studied here only 60 valued their intangible assets (on their books) in 1934 at more than one dollar.

If we extend our analysis to the classification by year of incorporation the distinction between corporations in existence for the entire period 1925-34 and those coming into existence during the ten years appears rather significant. The companies incorporated prior to 1925 wrote off an appreciably larger portion of their property accounts than did those in existence only part of the decade studied. This is true, also, of investments. In writing down intangibles, however, the newer companies considerably exceeded the older concerns. With respect to write-ups of intangibles and of property the relative positions are reversed.

The revaluations made by corporations in existence during the entire decade may be examined in greater detail (Table 3).⁷ The most highly concentrated distributions

TABLE 2

TOTAL WRITE-UPS AND WRITE-DOWNS, 1925-1934, IN RELATION TO NET BOOK VALUES OF CORRESPONDING ASSETS IN 1934

PERIOD DURING WHICH INCORPORATED	NUMBER OF CORPORATIONS	AGGREGATE WRITE- UPS	AGGREGATE WRITE- DOWNS	NET BOOK VALUE OF ASSETS (1934)	AGGREGATE WRITE- UPS	AGGREGATE WRITE- DOWNS			
							<i>(as percentages of net book value of assets)</i>		
<i>(in thousands of dollars)</i>									
PROPERTY, PLANT AND EQUIPMENT									
Before 1925	153	86,131	567,060	4,907,614	1.76	11.55			
1925-1934	55	90,754	102,092	1,504,039	6.03	6.79			
Total	208	176,885	669,152	6,411,653	2.76	10.44			
INTANGIBLES									
Before 1925	153	52,587	254,837	308,309	17.06	82.66			
1925-1934	55	890	53,515	21,260	4.19	251.72			
Total	208	53,477	308,352	329,569	16.23	93.56			
INVESTMENTS									
Before 1925	153	202,293	165,521	943,599	21.44	17.54			
1925-1934	55	17,823	31,349	249,292	7.15	12.58			
Total	208	220,116	196,870	1,192,891	18.45	16.50			

TABLE 3

WRITE-UPS AND WRITE-DOWNS, 1925-34, AS PERCENTAGES OF THE NET BOOK VALUES OF THE CORRESPONDING ASSETS IN 1934

Frequency distribution by size of percentage

Each corporation counts as one item¹

Percentage ²	PROPERTY, PLANT AND EQUIPMENT			INTANGIBLE ASSETS			INVESTMENTS		
	Write-up	Write-down	Net Write-up	Write-up	Write-down	Net Write-up	Write-up	Write-down	Net Write-up
∞^3				2	1	1	2		
140.0 and over	1						7		4
130.0 to 139.9									
120.0 to 129.9	1								
110.0 to 119.9	1								
100.0 to 109.9									
90.0 to 99.9							1		1
80.0 to 89.9									
70.0 to 79.9									
60.0 to 69.9	1			1					
50.0 to 59.9	1		2				1		1
40.0 to 49.9	3		2				2		
30.0 to 39.9	1		2			1	1		2
20.0 to 29.9	3		1				2		2
10.0 to 19.9							2		
0.1 to 9.9	20		7				6		
0.0	121	79	73	150	98	98	129	99	95
-0.1 to -9.9		20	17		2	2		8	6
-10.0 to -19.9		9	8		1	1		4	4
-20.0 to -29.9		5	5		1	1		2	2
-30.0 to -39.9		8	9		1			5	6
-40.0 to -49.9		2	1					3	3
-50.0 to -59.9		1	2					1	1
-60.0 to -69.9		4	2		1	1		1	1
-70.0 to -79.9		8	7					2	
-80.0 to -89.9		2	2		1	1		3	5
-90.0 to -99.9		2	2					3	
-100.0 to -109.9		1	1						
-110.0 to -119.9		1	1					1	1
-120.0 to -129.9					1	1		2	2
-130.0 to -139.9								1	1
-140.0 and under		11	9		9	9		12	11
$-\infty^3$					38	37		6	5
Total	153	153	153	153	153	153	153	153	153

¹ Only corporations in existence during the entire period are included.² The classes '140.0 and over' and '-140.0 and under' do not include the items of infinite size.³ Infinite: denominator is zero.

are those for revaluations of property, plant and equipment. A definite and thick clustering about the zero point is noticeable. This means that the amount of write-up or write-down of property, plant and equipment is rather small for most companies; that, relatively speaking, there were only a few large write-ups or write-downs of this asset. Revaluations of investments were also small for

¹ The younger companies are omitted to avoid the possible lack of comparability that may arise from their absence during part of the period 1925-34.

most companies but there were large amounts of write-ups and write-downs for more companies than in the case of property, plant and equipment. That is, the frequencies decrease less rapidly as the zero point is left behind. For intangibles the distribution is quite strange. Of the 55 reporting write-downs, 38 had completely written down their intangible assets.⁶ It is therefore to be expected that

⁶ A qualification must be applied to the zero class in the above distributions. It will be remembered that a majority of the companies in the sample show no value of intangible assets at all.

revaluation of intangibles will tend, more than revaluations of other assets, to introduce divergencies in rates of profits, by affecting book values of net worth.

REVALUATIONS BY YEARS

The distribution of number and amount of revaluations among the years covered in our survey concerns us next (Tables 4 and 5).

Write-ups of property, plant and equipment reached a peak, in respect of number, in 1928. In 1932 and 1933 there were none. A roughly similar time pattern is found in the upward revaluations of intangible assets, though the total number involved is too small to provide much evidence. With respect to investments, write-ups fluctuated much less; consequently the turning points are less definitely established.

The effects of the most recent depression are reflected sharply in the number of write-downs of property and investments. The number of downward revaluations of tangible fixed assets fell slowly to 1928-29 and then shot up, reaching a high in 1932. Similar fluctuations are apparent for investments except that the rise to 1932 is more rapid (in percentage terms). No reliable indications of a decline between 1925 and 1928 are available. Write-

Footnote 8 concluded
Therefore a large number of companies with intangible assets valued at zero, and with no revaluations of intangibles, should be placed in a separate (indeterminate) class, since 0÷0 is mathematically indeterminate. These, however, have been placed in the zero class.

downs did not decline between 1933 and 1934, as in property, plant and equipment. The number of write-downs of intangibles did not increase appreciably between 1928 and 1932. The distribution in time is similar in some respects to that of investment write-ups. The small rise in 1932 and the relatively large number as early as 1925 lend support to the belief that intangibles are written down when business is good, to indicate caution, as frequently as they are written down when times are bad and values appear to be tottering or to have crashed.

The data on the number of revaluations may be supplemented by those on the amount. The two sets of data are of interest from different points of view, and in conjunction throw light on the changing magnitude of revaluations per company, as well as per year. From the viewpoint of economic behavior those on number are most useful, indicating more clearly the reactions of business men as reflected by changes in their accounting habits. The amount of revaluations in each year is useful in interpreting aggregate book values of assets and capital.

In the main, the material bearing on the amount of revaluations confirms the evidence gained from the number of companies involved. There are some discrepancies in high and low points: in 1926 write-downs of property account were larger than in 1928; the fewest occurred in 1930. Of the write-downs of tangible fixed assets 44 per cent were made in the one year 1932 and 18 per cent in 1931. During the four years 1931-34, 84 per cent of the aggregate write-downs of the decade occurred.

TABLE 4
CORPORATIONS REPORTING REVALUATIONS OF FIXED ASSETS, 1925-1934, NUMBER, BY YEARS

CORPORATIONS INCORPORATED BEFORE 1925	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
<i>Write-ups</i>										
Property, plant and equipment	4	4	7	13	7	4	3	....	....	1
Intangibles	....	....	....	2	1	1	....	....	....	....
Investments	4	4	3	2	3	2	1	3	3	7
<i>Write-downs</i>										
Property, plant and equipment	9	8	7	6	6	8	24	30	22	13
Intangibles	11	8	7	10	7	4	10	11	5	6
Investments	2	1	1	2	5	7	15	23	13	13
Total number of corporations	153	153	153	153	153	153	153	153	153	153
<i>ALL CORPORATIONS IN SAMPLE</i>										
<i>Write-ups</i>										
Property, plant and equipment	6	9	11	18	10	5	6	1	1	3
Intangibles	....	....	1	2	1	1	1	1	....	....
Investments	4	5	4	3	3	3	2	3	5	11
<i>Write-downs</i>										
Property, plant and equipment	10	9	8	7	9	11	30	41	33	19
Intangibles	13	10	11	14	12	6	11	12	9	6
Investments	3	1	3	4	8	10	20	31	18	18
Total number of corporations	159	172	181	192	199	201	202	207	208	208

TABLE 5
WRITE-UPS AND WRITE-DOWNS, 1925-1934, AMOUNT, BY YEARS
Reported by corporations in existence during the entire period¹

	(thousands of dollars)									
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
<i>Write-ups</i>										
Property, plant and equipment	10,254	6,614	15,980	24,086	11,426	12,315	5,343	.....	.....	77
Intangibles	.....	.....	.....	16,442	25,559	10,586	.....	.....	.....	.....
Investments	17,938	33,140	7,046	6,155	24,967	3,762	49	417	1,057	8,517
<i>Write-downs</i>										
Property, plant and equipment	12,495	24,008	10,471	21,474	10,171	7,630	96,698	236,263	60,984	59,730
Intangibles	48,370	7,918	14,308	49,514	29,191	13,801	11,776	42,000	10,193	11,653
Investments	158	25	582	4,779	13,579	2,975	29,404	39,745	35,342	37,081
<i>Net write-ups</i>										
Property, plant and equipment	-2,241	-17,394	5,509	2,612	1,255	4,685	-91,355	-236,263	-60,984	-59,653
Intangibles	-48,370	-7,918	-14,308	-33,072	-3,632	-3,215	-11,776	-42,000	-10,193	-11,653
Investments	17,780	33,115	6,464	1,376	11,388	787	-29,355	-39,328	-34,285	-28,564

¹ The sum of the figures on any line does not exactly equal the corresponding aggregate in Table 2 since the latter includes some revaluations not allocated to any specific year of the period 1925-34.

The net difference between write-ups and write-downs reveals interesting features. In no year is there a net write-up of intangibles. The cyclical movements in the other two series are sharp and reflect the state of general business on the one hand and the stock market on the other.

The increase in amount of write-downs per company, of tangible fixed assets, between 1929 and 1932, is sharp. While number of write-downs rose from 6 to 30, or five-fold, the amount in dollars rose from 10 million to 236 million, or over twenty-three-fold. In investments, however, no such clear relationship and divergence is evident in the two series of number and amount.

The diverse behavior of the three classes of fixed assets reflects the factors affecting the amount and number of revaluations. To these factors we now turn.

REASONS OFFERED FOR REVALUATIONS

We have been concerned with describing the fixed assets most commonly affected by revaluations, the relative number of concerns involved and the amount of revaluations made by them, and the distribution of number and amount over the decade studied. What are the reasons offered in explanation of these various revaluations?

The type of assets involved and the relative amounts of revaluations reported for each, and their time distribution in relation to what we know of the corresponding state of business, in themselves throw light on these reasons. But there is more direct information provided in many of the original reports. Let us examine this material first.

Discrepancy between book value and some sort of 'current value' is the basis of practically all revaluations. In most of the reports that included some explanation of the entries recorded the only statement was simply to the effect

that an appraisal had been made of property, plant and equipment. Some 40 of the companies reporting write-ups and write-downs of property offer this explanation. In a sense, of course, any revaluation implies an appraisal as of a given moment. But as used here, and as understood in accounting reports, the term 'appraisal' is confined to a rather detailed inspection of physical condition together with a study of obsolescence and current reproduction costs. Not always are these appraisals reported as 'independent'—that is, made by outside experts. Some companies state that their assets were revalued simply on the basis of opinions or decisions of officers or directors.

Appraisals are usually made because a decision to revalue has already been more or less definitely formed. To this extent the opinions of officers and directors underlie every appraisal and therefore every revaluation based upon an appraisal. Necessarily these opinions and decisions also underlie every retention of existing book values.

Some companies appear to be in the habit of using expert appraisals as aids in their accounting. Thus, the F. E. Myers & Bro. Co. reports appraisals on three separate occasions, 1922, 1927 and 1933, all resulting in revaluations.

Even an independent appraisal is still subject to the superior will and responsibility of the officers and directors of a corporation. Occasionally, appraisal does not lead to immediate or ultimate revaluation, or the appraisal may be modified by decision of the directors. For example, the F. E. Myers & Bro. Co. entered one appraisal only partly at the time it was made. The balance was, however, recorded at a later date. A 1920 appraisal of the assets of Bucyrus-Erie was not written into the books until 1925. A curious appraisal of an appraisal was made when "ap-

praised sound values" of the property of General Cable were discounted 20 per cent and only then entered in the records.

Appraisals, of course, are not reasons for revaluations but only methods of getting at the amounts by which to revalue. They can tell us nothing in themselves of these reasons except to suggest that the fundamental factors were sufficiently strong to be sensed by the officials ordering the appraisals.

More explicit as to the kind of 'value' substituted for the superseded book value are those explanations mentioning anticipations of losses on disposal of property. These are reported by several corporations. One, George A. Fuller Company, anticipated and recorded a gain. But even this explanation tells us little as to the basic causes.

More fundamental are such factors as changes in general price levels, discovered obsolescence, and errors in earlier estimates of depreciation and depletion. Price changes are mentioned specifically by some ten corporations as the cause of the revaluations made by them. In one or two instances (e.g., Mohawk Carpet) mention is made of "current reproductive costs new" as the revised basis of book values. Changing current prices had a continuous effect on the book values of depletable assets of one subsidiary of the American Smelting and Refining Company. This company valued the "known and probable" ore in its mineral lands on the basis of the average price of metals received by it the preceding ten years. As a result, revaluations were upward in 1927, 1928 and 1929, and downward in each of the five years following. Part of these revaluations represented, of course, some allowance for depletion and made it unnecessary to compute depletion separately, since even if prices remained constant, the changing amount of ore in the mineral lands would result in a downward revaluation.

Obsolescence is mentioned specifically in only a few reports. As we shall see later, however, it is probably a major factor accounting for downward revaluations.

Revised estimates of earlier charges for depreciation and depletion are responsible for a considerable number of revaluations of property account. About a dozen reports mention this. Most of these refer to decisions of the Treasury Department in connection with the assessment of income taxes. In one or two the depreciation or depletion base also was adjusted.

Broader changes in the methods of accounting for fixed assets, as well as in the application of methods already in use, are responsible for certain revaluations. For example, development of mines and oil wells, formerly charged to income, are now often capitalized and written off periodically through depreciation charges. A change of this sort requires that the value of developments already charged to

income but still rendering service be added to fixed assets. A few instances of this sort were discovered, including the Standard Oil Company of Kansas. This change of policy was rather wide-spread after the beginning of the recent severe depression.

Other instances of changes in accounting policy occur in the case of patents (The Paraffine Cos., Inc.), improvements (South American Gold and Platinum), and lease rentals (Standard Oil of Kansas).

The idleness of certain portions of plant is given as grounds for write-down of values by ten or twelve corporations. Naturally, it is more or less permanent idleness that is anticipated. The anticipation of permanent disuse may reflect only the pessimistic mood inherent in a long and severe depression, and the concomitant conservatism it engenders. Where actually permanent this idleness is, to some extent, a consequence of obsolescence, and to some extent a result of over-investment in the preceding period of prosperity. When only temporary, write-downs arising from disuse of property may be expected to be cancelled later when fears are not realized. This is true in several instances (e.g., Gotham Silk Hose). At least one company (General Motors), however, counterbalanced restorations of the value of formerly idle property by contra entries to reserves for depreciation.

This cancelling of earlier revaluations by further revaluations is not restricted to entries arising from idle facilities. On the contrary, a considerable number, especially of write-downs during the last few years, represent cancellations of write-ups at earlier dates. Such cancellations are reported, in our sample, by as many as thirty companies. In one or two it is a revaluation by a predecessor company that is eliminated. Some of these revaluations follow one another in a rather striking manner (Byron Jackson Company, Ludlum Steel). One company (Superior Oil) reports a write-down during receivership (1931) of a former recording (1929) of an "excess appraisal value". This practice of a mutual cancelling of write-ups and write-downs is indicated by Table 6 relating to the property account. A distinct correlation is apparent although it is not high. Of the 31 companies reporting write-ups 21 (or two-thirds) reported write-downs also. But only 74 of the

TABLE 6
RELATIONSHIP OF WRITE-UPS AND WRITE-DOWNS OF PROPERTY,
PLANT AND EQUIPMENT

NUMBER OF COMPANIES ¹	REPORTING WRITE-DOWNS	REPORTING NO WRITE-DOWNS	TOTAL NUMBER
Reporting write-ups	21	10	31
Reporting no write-ups	53	69	122
Total number	74	79	153

¹ Only corporations in existence during each year 1925-34 are included.

total 153 (or less than one-half) reported write-downs. If the latter ratio had applied also to the group of companies reporting write-ups, we would have expected to find only 15 reporting write-downs, instead of the 21 actually doing so.⁹

The almost universal streak of caution in business men, found side by side with receptivity to current moods, underlies many of the entries discussed above. The presence of write-downs when facilities are idle or when loss on disposal is anticipated, and the many absences of write-ups, reflect such caution. It is particularly clear, however, in the treatment of intangible fixed assets—patents, goodwill, trade-marks.

Intangible assets are reported, as already mentioned, by only 60 of the 208 companies in our sample. Many companies wrote off intangible assets as soon as they were acquired by purchase from other concerns (Borden, Devco and Reynolds, Dupont, etc.). In other companies, when tangible fixed assets were written up, the surplus thus created was used to extinguish intangibles (Continental Can, City Ice & Fuel, Sharon Steel Hoop, Addressograph-Multigraph). When acquired for value paid, of course, adequate justification has appeared for placing intangibles upon the books.

With respect to investments, most revaluations appear to be the result of changes in market values. Differences between cost and value on the books of the issuing company also have often been eliminated in the form of a write-down. (Occasionally such differences are recorded as intangible assets.) Rather often, investments are kept on the books on a lower of cost or market basis, which may mean write-downs in a falling market, and restoration of the cost basis in a rising market. Book values of investments are also affected by the financial condition and prospects of the companies, especially subsidiaries, whose securities are being held. To some extent investments in foreign subsidiaries have been revalued as foreign exchange rates have fluctuated (National Cash Register).

So much for the explanations given in the reports; further information is provided by the figures themselves. The distribution of revaluations among the various assets, especially the proportionately large volume of write-downs of intangibles, and the response in number and amount of revaluations to the conditions prevailing during the recent severe depression further emphasize the nature of the forces making for revaluation of assets. The strange compound of conservatism and optimism, major changes in price levels, changes in accounting practice (changes that are themselves reflections of current business conditions), obsolescence uncovered in a severe depression—these are the

factors and conditions affecting valuations on the books of business enterprises.

These bits of evidence may be supplemented by other data collected, through direct questionnaires, by the National Association of Cost Accountants.¹⁰ Members of the association were asked, early in 1933, whether asset values should be written down. Of 117 cost accountants replying, 85 were in favor of writing down assets. Of these, 13 favored "present market value", 64 favored "net sound value", and 9 some other value. Only 13 were ready to accept "present market value", 64 advocating a net sound value which must have meant, to them, some value greater than "present" market value, probably being more in line with their estimates of future market values. The complete record is as follows:

Number of members replying to questionnaire	117
Those against writing down assets	32
Those in favor of writing down assets	85
To present market value	13
To net sound value	64
To some other value	9
Number of companies in which assets have not been written down	71
Number of companies in which assets have been marked down	46
Number of companies marking down	
Assets now or expected to be in use	35
Assets not now or expected to be in use	33
Assets in both groups	22
Number of members in favor of marking down assets whose companies have not written down their assets	42

It is difficult to determine just which factors made such a large number of the cost accountants favor the writing down of assets. "Present market value" implies, although not necessarily, that the collapse of prices was most influential. But even if we assume this, it must be remembered that 73 other accountants favored other values. It is probably not unfair to conclude that besides the fall in prices the existence of unused capacity was also a powerful force. Indeed, in the report of the St. Louis Chapter of the Association, the entire discussion of revaluation is related primarily to the existence of idle facilities. The fact that of 46 companies 33 wrote down idle plant, 11 writing down only idle plant, adds weight to the conclusion that obsolescence, unwise expansion, and the mood of depression were important elements.

We have reviewed some of the reasons offered for the revaluations made in the years covered by our survey.

⁹ *N.A.C.A. Bulletin, Section I*, March 15, 1933, p. 1037; and "Idle Plant Facilities, Excess Plant Values", Report of National Association of Cost Accountants Conference (St. Louis Chapter), April 6, 1933 (mimeographed).

⁹ The significance of the difference between 15 and 21 may be demonstrated by technical-statistical means.

One of the features of the reports is the small place specifically accorded to such factors as faulty investment and obsolescence (assuming that these really can be distinguished). But it is probably in the nature of the records that they do not reveal the really fundamental factors.²¹ Over-investment during prosperity, and changes in tastes and technique that lead to obsolescence, find their concrete expression in the form of idle property—unused plant—in depression. It is this concrete expression that is noted in the records as the immediate cause of write-down.

Obsolescence appears in depression more often than in prosperity since at the latter time most capacity is in full use. The apparently temporary write-downs in severe depression are often really permanent write-downs, not merely a reflection of the moment's mood. But obsolescence is revealed also to some extent even in prosperity. It may be doubted, therefore, whether in the near future write-ups will exceed write-downs, as a consequence of the restoration, even if partial, of earlier (1929) price levels. It is probable that write-downs always tend to exceed write-ups, except possibly during or immediately after a tremendous inflation, and that this excess is a reflection of the obsolescence not accounted for in depreciation charges.

One further question arises, namely, why so many companies do not revalue their assets. As we have seen (Table 3), of 153 corporations, 79 did not write down their property, plant and equipment during the decade studied, although this period included one of the severest and longest depressions on record. Since no explanations are given, obviously only an opinion can be hazarded as to the reasons. Among these, first place must be given to the weight of accounting usage. The accounting apparatus grips most firmly those figures that are based on original cost, figures that are as comfortable as old friends and as unchanging, tried as they are by the acid test of the paid voucher. Other reasons are also related to accounting practices; for example, the regulations of the Treasury Department which refuses to accept revaluations for tax purposes. The legal theory of the inviolability of corporate capital, confused though it be, may also exercise some influence.

²¹ It thus becomes necessary, if a conclusive statement is to be made about the basic factors, to approach the problem from another angle by utilizing materials not given in the reports. This *Bulletin* presents some preliminary results derived from only one body of data.

The whole problem of revaluation is part of the broader problem of the factors making for profits and losses. A detailed study of the fortunes of individual industries and enterprises, with reference to changes in demand, technology, supply prices of competing and joint factors of production, the state of competition, and legislative enactments, is required to get at a full explanation of the basic factors underlying revaluations.

Revaluations may not be made simply because of a refusal to recognize current conditions as anything but temporary. Such optimism (or pessimism) may persist even in the face of a fairly long period of depression or prosperity; it is not always misplaced in so far as the ordinary business cycle is concerned.

Finally, it may be considered undesirable to revalue assets in order to avoid certain effects upon calculations of profits or book capital, and upon those who use these records—investors, bankers and stockholders. Or if these effects be felt desirable it may be considered unnecessary to go to the trouble of revaluation in order to attain them. This brings us to the question of the effects of revaluations, which are two-fold: they influence measures of both capital and income.

EFFECTS OF REVALUATIONS

The effect on measures of fixed assets, particularly property, plant and equipment, is illustrated by certain figures collected from published reports by Arthur H. Winakor (Table 7). The individual industries given are those in

TABLE 7
CHANGES IN NET BOOK VALUE OF PROPERTY, PLANT AND EQUIPMENT, INDUSTRIAL CORPORATIONS¹

INDUSTRY	NET BOOK VALUE IN 1932 AS A PERCENTAGE OF THE 1927 VALUE	
	Ignoring revaluations of assets	Correcting for revaluations of assets
Total	104	113
Selected industries		
Apparel	67	97
Aviation and auto accessories	101	123
Chemicals	123	142
Machinery and tools	92	100
Petroleum	104	119

¹ Arthur H. Winakor, "Maintenance of Working Capital of Industrial Corporations by Conversion of Fixed Assets", University of Illinois, January 23, 1934, pp. 25-6. The total number of companies covered is 182.

which the effect of write-ups and write-downs seemed especially large. The greatest difference between book value and book value adjusted for revaluations occurs in the apparel industry, where it amounts to over 30 per cent of the latter figure. The property account of all industries combined was affected by revaluations to the extent of 8 per cent. But not only the aggregate of the assets, and the measures of total national wealth in which they are included, are subject to the influence of revaluations. Industrial comparisons and comparisons of individual companies are affected even more strongly.

Revaluations affect, also, estimates of certain current costs—depreciation and depletion—and therefore estimates

of profits. They need not do so, of course. Appreciation may be written off by charging depreciation on the appreciated portion not to current income account but to surplus. There are several instances of this practice in the corporate reports examined here (e.g., Evans Products). Depreciation may continue to be charged on written-off property (that has been restored to use) and added to costs, the corresponding credit being to some surplus account (Snider Packing). Or, as one cost accountant suggested, write-down may be accomplished by setting up a reserve for property revaluation, allowing the assets to be carried at cost in the books for depreciation purposes and at present replacement value on the balance sheet.¹² Further, as already mentioned, there are the restrictions of the income tax laws which do not permit revaluations to affect the amount of depreciation charges deducted in computing taxable net income. But on the whole, the ordinary records of business depreciation and depletion are definitely affected. Indeed, actual revaluation is not necessary for this result to be

¹² St. Louis Chapter of the N.A.C.A., *op. cit.*, p. 13.

accomplished. Recognition of the factors involved, leading to a change in depreciation rates, or to charging to accounts other than cost of sales the burden resulting from idle facilities, accomplishes much the same result.¹³

The effects on the computation of costs and profits are obvious. Indeed, an argument offered for writing off plant values is that it leaves the company in a "splendid competitive market position".¹⁴ That is, its costs are lowered by the amount of depreciation on the values written off. The extent to which aggregate costs affect competitive position is, of course, a problem in itself. But in any event, the computed profits are definitely affected. With them are affected the available measures of corporate savings and of national income.

Measurement of the *rate* of profits is influenced by revaluations in two ways. The numerator, net income, is

¹³ See the interesting answers to questions bearing on these points in the report of the N.A.C.A. Conference (St. Louis Chapter), already cited.

¹⁴ Cf. W. A. Layman, *The Annalist*, August 25, 1933.

TABLE 8
TOTAL REVALUATIONS OF FIXED ASSETS, 1925-1934, AS PERCENTAGES OF THE NET BOOK VALUES
OF TOTAL ASSETS IN 1934

Frequency distribution by size of percentage

Each corporation counts as one item¹

Percentage	WRITE-UP		WRITE-DOWN		NET WRITE-UP	
	Number	Percentage	Number	Percentage	Number	Percentage
70.0 and over	1	.7				
60.0 to 69.9	2	1.3			1	.7
50.0 to 59.9	1	.7				
40.0 to 49.9	1	.7				
30.0 to 39.9	4	2.6			1	.7
20.0 to 29.9	3	2.0			3	2.0
10.0 to 19.9	6	3.9			3	2.0
0.1 to 9.9	34	22.2			7	4.6
0.0	101	66.0	42	27.5	40	26.2
-0.1 to -9.9			44	28.8	39	25.5
-10.0 to -19.9			15	9.8	13	8.5
-20.0 to -29.9			10	6.5	9	5.9
-30.0 to -39.9			10	6.5	11	7.2
-40.0 to -49.9			7	4.6	6	3.9
-50.0 to -59.9			3	2.0	2	1.3
-60.0 to -69.9			7	4.6	4	2.6
-70.0 to -79.9			1	.7	1	.7
-80.0 to -89.9			1	.7	1	.7
-90.0 to -99.9			3	2.0	2	1.3
-100.0 to -109.9					2	1.3
-110.0 to -119.9			3	2.0	1	.7
-120.0 to -129.9						
-130.0 to -139.9						
-140.0 to -149.9			3	2.0	4	2.6
-150.0 and under			4	2.6	3	2.0
Total	153	100.0	153	100.0	153	100.0

¹ Only corporations in existence during the entire period are included.

affected, and the denominator, net worth, as well. But while both change in the same direction the extent of the change is different. Some light is thrown on the possible effects of revaluations on measures of corporate net worth by the figures collected in our study. Table 8 suggests the influence of total write-ups and write-downs on total assets (which include, besides fixed assets, cash, inventories and accounts receivable). Most write-ups of fixed assets during 1925-34 were small, only 18 companies (12 per cent of the total number) reporting upward revaluations exceeding 10 per cent of total assets at the end of 1934. Write-downs exceeding 10 per cent of total assets were much more frequent. As many as 67 concerns wrote down fixed assets by more than 10 per cent, 42 writing down over 30 per cent of 1934 total assets. The net figure, write-ups less write-downs, was also large for many corporations.

About 5 per cent of the companies reported net upward revaluations exceeding 10 per cent of total assets, while almost 40 per cent reported net write-downs of more than 10 per cent of all assets. Of these, 20 companies, or over 13 per cent of the total, revealed net write-downs during the decade exceeding half of their total assets in 1934. The ratio of net worth to total assets is roughly 0.75. The effects on net worth, therefore, are understated by the figures in the table.

Because of revaluations, comparisons of profitability must be made with full recognition of the complicating features of book values. Their importance, especially to stockholders and prospective investors, is attested by the fact that our basic data originate in an attempt, by the Securities and Exchange Commission, to supply these groups with the necessary information.

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PRICES
in RECESSION
and RECOVERY

A Survey of Recent Changes

FREDERICK C. MILLS

National Bureau of Economic Research, Inc.

1819 Broadway

New York, N. Y.