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INFLATIONARY ACCOUNTING AND ITS BALANCE SHEET EQUATION

by

Shinkichi Minemura

Introduction

This is an attempt to take up the different kinds of inflationary accounting practices which have been tried out before by the governments or expounded by the leading scholars of this field in coping with a phenomenal drop in the value of currency, from the standpoint of the framework of modern corporate accounting, especially applicable to the recovery of an enterprise capital under the inflationary finanical conditions, and elucidate how they should be classified in the generalized structure of inflationary accounting.

It might be impossible to find out the generalized structure of inflationary accounting or to find, in relation to the generalized structure, any solution to the problem of how to deal with the money-value change increment which is entered upon such equities item as the capital stock account, the value-change adjustment account, or the capital maintenance adjustment account and so on, as a result of the restatement of nonmonetary assets or the recognition of the money-value change loss of monetary assets on the assets side, unless the sources of monetary assets or nonmonetary assets which would be represented by such equities item as capital stock, liabilities, or surplus, are taken into consideration, in view of the fact that inflation is not only regarded as a monetary phenomenon, but also the money-value change loss resulting from inflation would be shifted to the creditors' burden if the sources of monetary assets are attributed to liabilities, whereas it is regarded as loss which an enterprise, or its stockholders eventually, would incur if the sources of monetary assets are attributed to capital stock or surplus.

In considering the generalized structure of inflationary accounting, it is assumed that the source of each unit of monetary assets or nonmonetary assets, which is represented by such equities item as capital stock, bonds payable, other liabilities, or surplus, is ascertainable.

The generalized structure of inflationary accounting is expressed by the balance sheet equation, in which "the increment balance equation," meaning

the equality of the total assets side money-value change increments to the total equities side money-value change increments, is included.

The increment means, here, the difference resulting from the restating of assets or equities by using the general price index or the individual market price index. During the inflationary period, the increment of monetary assets is treated as the money-value change loss.

It should be noted that the above balance sheet equation would be useful for practical accounting in which the source of each unit of monetary assets or nonmonetary assets in the aforementioned meaning, is not usually ascertainable.

We tried to clarify the characteristics of some prevalent revaluation practices of inflationary accounting or some leading literatures on inflationary accounting, by using the above balance sheet equation.

To clarify the characteristics of some approaches to inflationary accounting, we also tried to apply them to a common model.

Although there might be conceived to be the various modified types of approaches to inflationary accounting, we take up, here, five types of inflationary accounting practice.

In the case of the type (I), only the money-value change increment or loss is taken up in the restatement of assets, while the market-value (or the current replacement cost, the resale price and the like) of nonmonetary assets, as well as the money-value change loss of monetary assets, would be taken into consideration, in the case of the type (II). The characteristic of the type (I-a) or the type (II-a) lies in the fact that the money-value change increment or the market-value change increment of nonmonetary assets, as well as the money-value change loss of monetary assets, is intended to be entirely and permanently eliminated from income. In the case of the type (I-b), the type (II-b), or the type (II-c), only the money-value change increment of capital stock is eventually eliminated from income, although the money-value change increments or the market-value change increments of nonmonetary assets are entirely included in their restated costs. The type (II-b) would be discriminated from the type (II-c), mainly because the difference between the market-value change increment of nonmonetary assets and their money-value change increment, if unrealized, is entered upon such adjustment account as the unrealized surplus, in the former case, while it is treated as profit or loss, whether realized or unrealized, in the latter case.

In the case of the type (I-a) or the type (II-a), importance is attached to the maintenance of the business operation of an enterprise, while the maintenance of the purchasing power of the stockholders' capital, committed originally to an enterprise, is rather taken into consideration in the case of the type (I-b), the type (II-b), or the type (II-c). The money-value change or market-value change increment is eliminated from income, larger in amount, in the former case than in the latter case.

Now, let us touch on the revaluation practices which have been enforced in several countries for about forty years, to clarify the relationship of the type

Table (1) Consumer price index (Cost of living index) (Base: 1937=1)

	'37	'38	'39	'45	'46	'47	'48	'49	'50	'51	'52
Argentina	1	1	1	2	2	3	3	4	5	6	9
Australia	1	1	1.1	1.3	1.3	1.4	1.5	1.6	1.8	2.1	2.6
Austria*	1	1					3.2	3.8	4.3	5.7	6.4
Belgium**	1	1	1		3.1	3.3	3.8	3.7	3.6	3.9	4.1
Brazil***	1	1.1	1.1	3	3.4	4.4	4.8	4.6	5	5	6.2
Canada	1	1	1	1.2	1.2	1.4	1.6	1.6	1.7	1.8	1.9
Chile	1	1	1.2	2.5	3	4.	4.8	5.8	6.5	8	9.8
Denmark	1	1	1	1.6	1.6	1.6	1.7	1.7	1.8	2	2.1
France	1	1.1					13.9	16.4	18.2	21.4	23.9
Italy	1	1.1	1.2	26.7	30.8	50.8	54.2	54.2	54.2	60.8	62.5
Netherland	1	1	1	1.7	1.9	2	2	2.1	2.3	2.6	2.6
Norway	1	1	1	1.6	1.6	1.6	1.6	1.6	1.7	2	2.1
Peru****	1	1	1		2	2.5	3.3	3.8	4.3	4.7	5.1
Sweden	1	1	1.1	1.4	1.4	1.5	1.6	1.6	1.6	1.8	2
Uruguay	1	1	1	1.4	1.5	1.8	1.8	1.9	1.8	2.1	2.4
U. S. A.	1	1	1	1.2	1.3	1.6	1.7	1.6	1.7	1.8	1.9
F. R. Germany	1	0.9					1.5	1.6	1.5	1.6	1.6
Japan	1	1.3	1.5		39.3	89.3	160.7	210.7	200.	228.6	239.3
England	1	1	1	1.5	1.5	1.6	1.8	1.8	1.9	2	2.2

	'53	'54	'55	'56	'57	'58	'59	'60	'61	'62
Argentina	9	10	11	12	15	20	44	55	63	81
Australia	2.7	2.7	2.7	2.9	3	3	3.1	3.2	3.3	3.3
Austria	6.3	6.5	6.7	6.8	7.1	7.3	7.3	7.5	7.7	8.1
Belgium	4	4.1	4.2	4.6	5	5.2	5.3	5.3	5.4	5.4
Brazil	7.5	8.8	11.3	13.8	16.3	18.8	25	33.8	46.3	71.3
Canada	1.9	1.9	1.9	1.9	2	2	2	2	2.1	2.1
Chile	12.2	21	97.5	57.5	75	90	127.5	142.5	152.5	172.5
Denmark	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.8
France	23.6	23.6	23.9	24.3	25	28.6	30.4	31.4	32.5	33.9
Italy	63.3	65	65.8	68.3	69.2	70.8	70.8	72.5	74.2	77.5
Netherland	2.6	2.7	2.8	2.8	3.	3.	3.1	3.1	3.2	3.3
Norway	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.6	2.7	2.9
Peru	5.5	5.8	6	6.4	6.9	7.5	8.4	9	9.8	10.2
Sweden	2	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.7
Uruguay	2.5	2.8	3.1	3.2	3.8	4.4	6.1	8.5	10.4	11.5
U. S. A.	1.9	1.9	1.9	1.9	2	2	2	2.1	2.1	2.1
F. R. Germany	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9
Japan	257.1	271.4	267.9	271.4	278.6	282.1	285.7	296.4	310.7	332.1
England	2.3	2.3	2.4	2.6	2.6	2.7	2.7	2.8	2.9	3

Source: Statistical Year Book, United Nations——amended where necessary to achieve a consistent base year.

* Retail price index

** Retail price index

*** Sao Paulo consumer price index

**** Lima consumer price index

	'63	'64	'65	'66	'67	'68	'69	'70	'71
Argentina	100	122	157	207	268	311	335	380	512
Australia	3.3	3.4	3.5	3.7	3.8	3.9	4	4.1	4.4
Austria	8.3	8.7	9.1	9.3	9.8	9.9	10	10.8	11.3
Belgium	5.6	5.8	6	6.3	6.4	6.6	6.9	7.2	7.5
Brazil	125	233.8	378.8	555	718.8	892.5	1,100	1,310	1,586.3
Canada	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8
Chile	250	365	470	577.5	682.5	862.5	1,127.5	1,495	1,795
Denmark	2.9	3	3.2	3.4	3.7	4	4.1	4.4	4.7
France	35.7	36.8	37.9	38.9	40	41.8	44.3	46.8	49.3
Italy	83.3	88.3	92.5	94.2	97.5	99.2	101.7	106.7	111.7
Netherland	3.4	3.6	3.8	4	4.2	4.3	4.7	4.8	5.2
Norway	2.9	3.1	3.2	3.4	3.5	3.6	3.7	4.1	4.4
Peru	11	12.1	14.2	15.5	17	20.4	21.5	22.6	24.2
Sweden	2.8	2.9	3	3.2	3.4	3.4	3.5	3.8	4
Uruguay	13.9	19.9	30.7	53.3	101.1	227.6	273.9	321.3	397.1
U. S. A.	2.1	2.2	2.2	2.3	2.3	2.4	2.6	2.7	2.8
F. R. Germany	2	2	2	2.1	2.1	2.2	2.3	2.4	2.6
Japan	357.1	367.9	391.4	414.3	432.1	457.1	478.6	517.9	546.4
England	3	3.1	3.3	3.4	3.5	3.7	3.9	4.1	4.5

	'72	'73
Argentina	809	1,307
Australia	4.6	5.1
Austria	11.9	12.8
Belgium	7.9	8.4
Brazil	1,833.8	2,070
Canada	2.9	3.1
Chile	3,185	14,442.5
Denmark	5	5.4
France	52.1	56.1
Italy	118.3	130.8
Netherland	5.6	6.1
Norway	4.7	5.1
Peru	25.9	28.5
Sweden	4.3	4.6
Uruguay	700.3	1,381.4
U. S. A.	2.9	3.3
F. R. Germany	2.7	3
Japan	571.4	639.3
England	4.8	5.3

Table (2) Revaluation practices in several countries

Country	Consumer price index in 1973	Increment considered*	Main point of time of revaluation and its consumer price index	
			Index	Point of time
Group A				
Chile	14, 442. 5	Money-value change increment	250.	1963...Point of time of compulsory revaluation
Brazil	2, 070.	Money-value change increment	233. 8	1964...Point of time of compulsory revaluation
Uruguay	1, 381. 4	Money-value change increment	4. 4	1958...Point of time of initial revaluation
Argentina	1, 307.	Money-value change increment	809.	1972...Point of time of compulsory revaluation
Japan	639. 3	Money-value change increment	257. 1	1953...Point of time of compulsory revaluation
Italy	130. 8	Market-value change increment	62. 5	1952
France	56. 1	Money-value change increment	30.	1959...Point of time of compulsory revaluation
Peru	28. 5	**	24. 2	1971...Point of time of compulsory revaluation
Group B				
Austria	12. 8	Market-value change increment		
Belgium	8. 4	Market-value change increment	3. 1	1946
Netherland	6. 1	Market-value change increment		
Denmark	5. 4	Market-value change increment		
England	5. 3	***		
Australia	5. 1	Market-value change increment		
Norway	5. 1	Market-value change increment		
Sweden	4. 6	Market-value change increment		
U. S. A.	3. 3	Money-value change increment		
Canada	3. 1	Market-value change increment		
F. R. Germany	3.	Market-value change increment	1. 5	1948

* This column is based upon "The treatment of inflation in the published accounts of companies in overseas countries," by R. W. Scapens, the Institute of Chartered Accountants in English and Wales, 1973, with the exception of U.S.A. The increment considered in U.S.A. is based upon "APB Statement No. 3," by American Institute of Certified Public Accountants, 1969, (viz. the "general price-level financial statement").

** Importance would be attached rather to the money-value change increment, in view of the fact that the index used is specified in the tax legislation.

*** The increment considered in "Provisional Statement of Standard Accounting Practice," by the UK and Irish Accounting Bodies, 1974, (viz. the "current purchasing power" method) is regarded as the money-value change increment, while the increment considered in "current cost accounting," recommended by the Inflation Accounting Committee (Inflation Accounting, Report of the Inflation Accounting Committee, 1975) is the market-value change increment.

Table (3) Increase/(decrease) over the previous year's indexes (Base: 1937=1)

Unit: %

	'38	'39	'46	'47	'48	'49	'50
Group A							
Chile	0	20	50	100	80	100	70
Brazil	10	0	40	100	40	−20	40
Uruguay		0	10	30	0	10	−10
Argentina	0	0	0	100	0	100	100
Japan	30	20		5,000	7,140	500	−1,070
Italy	10	10	410	2,000	340	0	0
France	10					250	180
Peru	0	0		50	80	50	50
Group B							
Austria	0					60	50
Belgium	0	0		20	50	−10	−10
Netherland	0	0	20	10	0	10	20
Denmark	0	0	0	0	10	0	10
England	0	0	0	10	20	0	10
Australia	0	10	0	10	10	10	20
Norway	0	0	0	0	0	0	10
Sweden	0	10	0	10	10	0	0
U. S. A.	0	0	10	30	10	−10	10
Canada	0	0	0	20	20	0	10
F. R. Germany	−10					10	−10

	'51	'52	'53	'54	'55	'56	'57
Group A							
Chile	150	180	240	880	7,650	−4,000	1,750
Brazil	0	120	130	130	250	250	250
Uruguay	30	30	10	30	30	10	60
Argentina	100	300	0	100	100	100	300
Japan	2,860	1,070	1,780	1,430	−350	350	720
Italy	660	170	80	170	80	250	90
France	320	250	−30	0	30	40	70
Peru	40	40	40	30	20	40	50
Group B							
Austria	140	70	−10	20	20	10	30
Belgium	30	20	−10	10	10	40	40
Netherland	30	0	0	10	10	0	20
Denmark	20	10	0	0	10	10	10
England	10	20	10	0	10	20	0
Australia	30	50	10	0	0	20	10
Norway	30	10	10	10	0	10	10
Sweden	20	20	0	10	0	10	10
U. S. A.	10	10	0	0	0	0	10
Canada	10	10	0	0	0	0	10
F. R. Germany	10	0	0	0	10	0	0

unit: %

	'58	'59	'60	'61	'62	'63	'64
Group A							
Chile	1,500	3,750	1,500	1,000	2,000	7,750	11,500
Brazil	250	620	880	1,250	2,500	5,370	10,880
Uruguay	60	170	240	190	110	240	600
Argentina	500	2,400	1,100	800	1,800	1,900	2,200
Japan	350	360	1,070	1,430	2,140	2,500	1,080
Italy	160	0	170	170	330	580	500
France	360	180	100	110	140	180	110
Peru	60	90	60	80	40	80	110
Group B							
Austria	20	0	20	20	40	20	40
Belgium	20	10	0	10	0	20	20
Netherland	0	10	0	10	10	10	20
Denmark	0	10	0	10	20	10	10
England	10	0	10	10	10	0	10
Australia	0	10	10	10	0	0	10
Norway	10	0	0	10	20	0	20
Sweden	10	0	10	10	10	10	10
U. S. A.	0	0	10	0	0	0	10
Canada	0	0	0	10	0	0	10
F. R. Germany	10	0	0	0	10	10	0

	'65	'66	'67	'68	'69	'70	'71
Group A							
Chile	10,500	10,750	10,500	18,000	26,500	36,750	30,000
Brazil	14,500	17,620	16,380	17,370	20,750	21,000	27,630
Uruguay	1,080	2,260	4,780	12,650	4,630	4,740	7,580
Argentina	3,500	5,000	6,100	4,300	2,400	4,500	13,200
Japan	2,350	2,290	1,780	2,500	2,150	3,930	2,850
Italy	420	170	330	170	250	500	500
France	110	100	110	180	250	250	250
Peru	210	130	150	340	110	110	160
Group B							
Austria	40	20	50	10	10	80	50
Belgium	20	30	10	20	30	30	30
Netherland	20	20	20	10	40	10	40
Denmark	20	20	30	30	10	30	30
England	20	10	10	20	20	20	40
Australia	10	20	10	10	10	10	30
Norway	10	20	10	10	10	40	30
Sweden	10	20	20	0	10	30	20
U. S. A.	0	10	0	10	20	10	10
Canada	0	10	10	10	10	10	10
F. R. Germany	0	10	0	10	10	10	20

unit: %

	'72	'73	Average per year, during the period from '37 to '73
Group A			
Chile	139,000	1,125,750	40,118
Brazil	24,750	23,620	5,750
Uruguay	30,320	68,110	3,837
Argentina	29,700	49,800	3,631
Japan	2,500	6,790	1,776
Italy	660	1,250	363
France	280	400	156
Peru	170	260	79
Group B			
Austria	60	90	36
Belgium	40	50	23
Netherland	40	50	17
Denmark	30	40	15
England	30	50	15
Australia	20	50	14
Norway	30	40	14
Sweden	30	30	13
U. S. A.	10	30	9
Canada	10	20	9
F. R. Germany	10	30	8

of inflationary accounting practice to the extent of a decline in the value of money. Then, we take up the 1937's price level, as the base of the index.

In Table (1), the consumer price indexes are calculated, the 1937's index being taken as 1. Table (2) represents the relationship of the point of time when the revaluation of assets, accompanied by the additional depreciation being allowable for tax, was enforced, to its consumer price index.

It might be properly mentioned that the type (I-a) or the type (II-a) should be applied to the inflationary conditions under which the consumer price index rises rapidly within a comparatively short period of time, especially in such countries as shown in the group A. In the group A, attention is directed to the change in the value of money rather than the change in the market price. Meanwhile, the type (I-b), the type (II-b), and the type (II-c) would be rather applicable to the creeping inflationary conditions under which the consumer price index rises slowly or constantly, especially in such countries as shown in the group B, although the type (I-b) yields results that are essentially the same as those yielded by W. Mahlberg's* or E. Schmalenbach's** approach taken up to cope with a rapid and phenomenal drop in the value of money. There is a tendency of attaching importance to the change in the market price, in the group B.

* W. Mahlberg, Bilanztechnik und Bewertung bei schwankender Währung.
** E. Schmalenbach, Goldmarkbilanz.

It is certain that any type of accounting practice would be implemented partially or incompletely, in the practical field, but it might be an overlap of the entering of the money-value change increments which would occur in the same component of capital during the same period of time, doubly upon such equities account as the capital stock account or the value-change adjustment account and so on, if implemented without regard to each balance sheet equation of the foregoing five types.

Moreover, it would be difficult to explain logically the increments which are entered upon such equities account as the capital stock account or the value-change adjustment account, as a result of the restatement of assets, unless attention is directed to the increment balance equation in each type of accounting practice.

Japan implemented the revaluation of fixed assets, stocks and other similar investments, in 1950, 1951, and 1953, according to the "Assets Revaluation Law," although the revaluation of stocks and similar investments is implemented only in 1950.

In view of the fact that the "Assets Revaluation Law" was put into force as a result of the "Report of the Japanese Taxation," made by the Shoup Mission, in 1949, it seems that there are something in common with each other, between Japan's revaluation practice and Sweeney's stabilized accounting practice, although applied partially in the former.

One of the defects in Japan's revaluation practice might be properly mentioned to lie in the fact that attention is not fully directed to the relationship of the assets side money-value change increments, to the equities side money-value change increments.

Country	Index used
Chile	Consumer price index
Brazil	Published indexes and coefficients which are generally in line with the wholesale price index
Uruguay	Weighted average of internal inflation and exchange revaluations
Argentina	Official based on wholesale prices
Japan	Wholesale price index, with the exception of land, stocks, and similar investments
Italy	Prices of specific assets
France	Government index based on certain wholesale price indexes
Peru	Index numbers specified in the tax legislation

Source: R. W. Scapens, ibid., Appendix 1.

One of the reason why the relationship of the assets side money-value change increment to the equities side money-value change increment is not fully studied in inflationary accounting, lies in the fact that there is a tendency of using the wholesale price index as an indicator of the money-value change in case non-monetary assets are revaluated to cope with the inflationary conditions under

which a remarkable drop in the money-value is witnessed. For instance, it is reported that the indexes of the countries which belong to the group A are shown as above.

As clarified above, more than half of the A group countries in which the money-value change increment is taken up in the restatement of assets, use mainly the wholesale price index as an indicator of the money-value change.

Certainly, the wholesale price index might be useful as an indicator of the change in the money-value of nonmonetary assets or the change in the measuring unit of the purchasing power of an enterprise (although the meaning of "the purchasing power of an enterprise" seems to be obscure).

It should be noted, however, that the wholesale price index is not reasonable as an indicator of the money-value change of such equities item as capital stock, surplus, or liabilities, insofar as the equities item represents the purchasing power which stockholders or creditors have committed to an enterprise.

Another reason why the assets side money-value change increment is not clearly related to the money-value change increment of such equities item as capital stock, surplus, or liabilities, lies in the fact that the price-level adjusted cost of nonmonetary assets is sometimes written off to its market price if the latter is lower than the former, in the case of the restatement of obsolete fixed assets (as is shown in Japan's revaluation of obsolete fixed assets) or in the case of the restatement of inventories the market price of which is below price-level adjusted cost under the lower of cost or market method (as is shown in AICPA's APB Statement No. 3).

Under these circumstances, it is necessary to consider how the relationship of the assets side increments resulting from the restatement of nonmonetary assets or the recognition of the money-value change loss of monetary assets, to the money-value change increment of such equities item as capital stock, surplus, or liabilities, should be demonstrated in the balance sheet equation.

As evident from the above, this analysis is a study of the framework of inflationary accounting and its basic principle.

Capital circulation and the relationship of the money-value change increment of the assets side to the money-value change increment of the equities side

It must be mentioned, at the outset, that capital which is committed to an enterprise by stockholders or creditors, is invested in goods or services and reverts again to cash or claim to cash. The balance sheet represents the portion of capital which has not yet been invested in goods or services or has already reverted to cash or claim to cash, as monetary assets on one hand, while it represents the portion of capital which is in the stage of goods or services, as nonmonetary assets on the other hand.

The balance sheet classifies the components of capital committed to an

enterprise, by the stages of circulation of capital in the above meaning, at a specific point of time (that is, the balance sheet date) on the assets side.

It might be properly mentioned that capital is classified by sources or causes, to which the inflows of portions of capital are attributed, such as capital stock, liabilities, and earnings and so on, on the equities side in the balance sheet.

Insofar as the assets side of the balance sheet is conceived to represent the enterprise capital which is essentially the same as those entered upon the equities side, by the different classification therefrom, the restating of the money-value of any item on the assets side, whether it may be monetary assets or nonmonetary assets, would be accompanied by the restating of the money-value of the portion of capital on the equities side, which corresponds to the above assets item.

Assuming that the portion of capital which takes the form of goods or services is shown as nonmonetary assets, and that the portion of capital which takes the form of cash or claim to cash is shown as monetary assets, the restating of the money-value of monetary assets or nonmonetary assets on the assets side would be also regarded as a means of the restating of the money-value of capital on the equities side, whether it may be restated entirely or partially.

The money-value change increments of assets (that is, the differences resulting from the restating of money-value of assets on the current general price level) are related to the money-value change increments of equities (that is, the differences resulting from the restating of money-value of equities on the current general price level).

In case the money-value change increments of the assets side are taken up without regard to the relationship of the money-value change increments of the assets side to the money-value change increments of the equities side, the following questions would be raised:

1. It is not clearly represented in the balance sheet or the income statement, that the money-value change loss resulting from the holding of monetary assets during the inflationary period of time could be shifted to the creditor's burden if the sources of assets are attributed to liabilities, whereas it is regarded as loss which an enterprise, or its stockholders eventually, would incur if the sources of assets are attributed to capital stock or earnings.

2. The money-value change increments which are entered upon such equities account as the capital stock account, the value-change adjustment account, or the capital maintenance adjustment account, as a result of the entering of the money-value change increment of nonmonetary assets upon the assets account or the deducting of the money-value change loss of monetary assets from income, are conceived to be essentially the same as those yielded by the restating of the money-value of the equities side on the current general price level, and therefore, it is reasonable that there is no overlap of the entering of the money-value change increment which would occur in the same component of capital during the same period of time, doubly upon the foregoing equities account. If it is assumed, for instance, that the cost of nonmonetary assets sold, used, or depreciated is

restated in terms of the year-end money-value in case the entering of the money-value change increments upon the above equities account for the purpose of the maintenance of capital or the eliminating of the change in money-value or market-value from income is accompanied by the restating of nonmonetary assets or the recognizing of loss on the money-value change of monetary assets, there would occur the overlap of money-value change increments, in the above meaning, between the cost of nonmonetary assets sold, used, or depreciated, and the money-value of monetary assets corresponding thereto or the cost of nonmonetary assets acquired as the substitute therefor, insofar as nonmonetary assets are sold or substituted at point of time when the price level is different from the year-end price level, within the year.

3. In the practical field, the restating of assets in terms of the current market value (the current replacement cost, in most cases) are sometimes applied to such long-term assets as fixed assets, while the normal stock method, the LIFO method, the current cost accounting's averaging method, or the like, serves as a means of eliminating partially the market-value change increment of inventories from income. If the money-value change loss of monetary assets is taken into consideration in this case, there might occur almost the same overlap as the above, between the cost of nonmonetary assets sold, used, or depreciated, and the money-value change loss of monetary assets.

4. Although loss on the money-value change of monetary assets is taken up in most accounting literatures, it is sometimes limited to those which would occur in the opening balance of net monetary assets and the difference in net monetary assets between the opening balance and the closing balance. Even if the money-value change loss is incurred as a result of the holding of money or money-equivalent during a certain period of time following the date of receipts within the year, it would be disregarded in case the above money or money-equivalent is expended to acquire nonmonetary assets before the balance sheet date. Therefore, the money-value change increments which are entered upon the aforementioned equities account for the maintenance of capital or the eliminating of the change in money-value or market-value from income as a result of the restating of the assets side would be quite different, at least in the aggregate, from those which are yielded by the restating of the money value of the equities side on the current price level.

5. Assuming that the money-value change increment or the market-value change increment of existing nonmonetary assets and the money-value change loss of existing net monetary assets are taken up on the assets side of the balance sheet and that the money-value change increment of capital stock is entered upon the capital stock account or the value-change adjustment account for the purpose of the maintenance of the purchasing power of capital stock on the equities side of the balance sheet, it is difficult to demonstrate what kinds of money-value change or market-value change increments are entered upon the debit or credit side of the surplus account, without regard to the relationship of the assets side

money-value change increment to the equities side money-value change increment.

In some cases, the money-value change increments of nonmonetary assets and the money-value change loss of monetary assets which are eliminated from income in the income statement, are different from those which are subtracted from the surplus account in the year-end balance sheet. In considering the relationship of the assets side money-value change increment to the equities side money-value change increment, it is necessary to take up the denominator adjustment increment resulting from the restating of the money-value change increment of nonmonetary assets or the money-value change loss of monetary assets, which would have occurred during the period prior to the date of acquisition of the existing monetary or nonmonetary assets, in terms of the current money-value.

The structure of inflationary accounting

To find out the general principle for inflationary accounting, it is necessary to consider how the relationship of money-value change or market-value change increments of monetary assets or nonmonetary assets on the assets side to the money-value change increments of such equities items as capital stock, liabilities, and earnings on the equities side, is expressed in the balance sheet equation.

To express the foregoing relationship of the assets side increments to the equities side increments in the balance sheet equation, it is necessary to use the above equation, assuming that the equities item to which each assets item would correspond, that is, the source of capital, is ascertainable in the balance sheet.

For this reason, we use superscripts, C, B, L, and E, to the sign of the assets item, to indicate the equities item to which each assets item would correspond, that is, such sources of capital as capital stock, bonds payable, liabilities other than bonds payable, and realized surplus, respectively, in this analysis.

If the monetary sizes of total equities, total monetary assets and total nonmonetary assets are designated as K, G, and W, the balance sheet equation is shown, in conventional accounting, as follows:

$$C+W=K \qquad (I)$$

Assuming, in this case, that the components of the equities side are represented by K^C, K^B, K^L, and K^E, which mean the monetary sizes of capital stock, bonds payable, liabilities other than bonds payable, and realized surplus, respectively, the relationship of the assets side to the equities side would be represented by the following equations:

$$G^C+G^B+G^L+G^E+W^C+W^B+W^L+W^E=K^C+K^B+K^L+K^E \qquad (II)$$

$$G^C+W^C=K^C \qquad (III)$$

$$G^B+W^B=K^B \qquad (IV)$$

$$G^L+W^L=K^L \qquad (V)$$

$$G^E+W^E=K^E \qquad (VI)$$

Assuming, in the above balance sheet equation, that nonmonetary assets

consist of similar articles, individual price index of which is indicated by N, while the general price index is indicated by P, and that a subscript is used to the sign of price index, to represent a point of time when the index stands, the money-value change increment of monetary assets and the market-value change increment of nonmonetary assets acquired at point of time t_i, are shown at point of time t_j, as follows:

Money-value change increment of monetary assets

$$G\times\frac{P_j-P_i}{P_i}$$

Market-value change increment of nonmonetary assets

$$W\times\left(\frac{N_j-N_i}{N_i}-\frac{P_j-P_i}{P_i}\right)+W\times\frac{P_j-P_i}{P_i}$$

$$\vdots$$

(Portion corresponding to money-value change increment)

It is common to think that the money-value change increment of monetary assets is not entered upon such monetary assets account as cash on hand or in the bank, receivables and so on, and is deducted as money-value change loss (during the inflationary period) from the surplus account, while the market-value change increment or its portion corresponding to the money-value change increment of nonmonetary assets is entered upon such assets account as inventory assets account, fixed assets account and so on.

Meanwhile, the money-value change increment of the equities side, which means the increment resulting from the change in the money-value of such account as capital stock, liabilities, surplus, and so on, would be represented in the same way as the above, at point of time t_j, if the transaction of such capital inflow as the issue of capital stock, borrowing, earning and so on, is assumed to occur at point of time t_i, as follows:

$$K\times\frac{P_j-P_i}{P_i}$$

As clarified above, the total assets side increments, corresponding to the total equities side increments, would be regarded as the sum of the money-value change increment of monetary assets and that which is taken up as the portion of money-value change increment of nonmonetary assets.

Certainly the transaction of such capital inflow as the issue of capital stock, borrowing, earning may occur at various points of time. To find out the relationship of the assets side increment to the equities side increment, it is necessary to take up separately the component of capital, flowing into an enterprise at each point of time.

If the component of capital flowing into an enterprise at each point of time, which is represented by such equities item as capital stock, liabilities, realized surplus on one hand and such assets item as monetary assets or nonmonetary assets on the other hand, could be taken up separately, the sum of the money-

value change increment of monetary assets and the portion of money-value change increment of nonmonetary assets would be equal to the money-value change increment of the equities item, insofar as the denominator of the multiplier for calculating the money-value change increment of the equities item, meaning the general price index at point of time when the transaction of such capital inflow as the issue of capital stock, borrowing, or earning is conceived to occur, is also used as the denominator of the multiplier for calculating the increment of the assets item.

Let us assume, for instance, that the portion of capital, represented by capital stock which is issued at point of time t_0, on the equities side, takes the form of monetary assets during the period from the point of time t_0 to the point of time t_1, and thereafter, takes the form of nonmonetary assets, the individual price index being designated as N, during the period from the point of time t_1 to the point of time t_2.

According to the prevalent view on the restatement of assets, the increments would be calculated, as follows:

Assets side increments

During the period from the point of time t_0 to the point of time t_1

$$G^c \times \frac{P_1 - P_0}{P_0}$$

:

Money-value change increment of monetary assets

During the period from the point of time t_1 to the point of time t_2

$$W^c \times \frac{N_2 - N_1}{N_1} = G^c \times \left(\frac{N_2 - N_1}{N_1} - \frac{P_2 - P_1}{P_1} \right) + G^c \times \frac{P_2 - P_1}{P_1}$$

:

Money-value change increment of nonmonetary assets

Under the above method of calculating the increments, the sum of the money-value change increment of monetary assets occurring during the period from the point of time t_0 to the point of time t_1 and the money-value change increment of nonmonetary assets occurring during the period from the point of time t_1 to the point of time t_2 is not equal to the money-value change increment of the equities side, which is shown as under:

Equities side increment

$$K^c \times \frac{P_2 - P_0}{P_0} = G^c \times \frac{P_2 - P_0}{P_0}$$

In this case, it is assumed that the monetary size of assets, G^c, is equal to the monetary size of capital stock, K^c, and to the original cost of nonmonetary assets, W^c.

If the general price index at point of time t_0, P_0, is used, instead of P_1, as the denominator of the multiplier for calculating the portion of money-value

change increment of nonmonetary assets occurring during the period from the point of time t_1 to the point of time t_2, the sum of the money-value change increments of the assets side, in the above meaning, is equal to the money-value change increment of the equities side, as follows:

Assets side money-value change increments

$$G^c\times\frac{P_1-P_0}{P_0}+G^c\times\frac{P_2-P_1}{P_0}=G^c\times\frac{P_2-P_0}{P_0}=K^c\times\frac{P_2-P_0}{P_0}$$

Money-value change increment of monetary assets

Money-value change increment of nonmonetary assets

In view of the fact that the point of time of the denominator of the multiplier for calculating the money-value change increment of nonmonetary assets should be just the same as that which is taken up in calculating the market-value change increment thereof, and that the difference between the money-value change increment which is calculated using the index, P_0, as the denominator, and the money-value change increment which is calculated using the index, P_1, as the denominator, in the above example, results from the restating of the money-value change increments which occur during the period prior to the point of time t_1, in terms of the general price index at point of time t_2, it is advisable to use the index, P_1, as the denominator in calculating the money-value change increment of nonmonetary assets, while the above difference resulting from the price level adjustment of past money-value change increment, which is taken up as "denominator adjustment increment" in this analysis, is subtracted from the surplus in the same way as the money-value change increment of monetary assets.

$$G^c\times\frac{P_1-P_0}{P_0}+\left(G^c\times\frac{P_2-P_1}{P_0}-G^c\times\frac{P_2-P_1}{P_1}\right)+G^c\times\frac{P_2-P_1}{P_1}=G^c\times\frac{P_2-P_0}{P_0}=K^c\times\frac{P_2-P_0}{P_0}$$

Money-value change increment of monetary assets

Denominator adjustment increment

Money-value change loss

Money-value change increment of nonmonetary assets

Included in nonmonetary assets account

Money-value change increment of equities side

Now, let us assume that monetary assets, the monetary size of which is regarded as G, and nonmonetary assets, the monetary size of which is regarded as W, are acquired at point of time t_0 and t_1, respectively, in Expression (III), $G^c+W^c=K^c$, in case capital stock is issued at point of time t_0.

In this case, the assets side increment is shown as follows:

Assets side increment

(1) Money-value change increment of monetary assets

$$G^c\times\frac{P_2-P_0}{P_0}$$

(2) Market-value change increment of nonmonetary assets

$$W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+W^c \times \frac{P_2-P_1}{P_1}$$

(3) Denominator adjustment increment

$$W^c \times \frac{P_2-P_1}{P_0}-W^c \times \frac{P_2-P_1}{P_1}$$

(4) Increment occurring during the period prior to the point of time t_1, in the portion of capital, W^c.

a. In case the portion of capital, W^c, takes the form of monetary assets during the period from the point of time t_0 to the point of time t_1.

$$W^c \times \frac{P_1-P_0}{P_0}$$

b. In case the portion of capital, W^c, takes the form of nonmonetary assets during the period from the point of time t_0 to the point of time t_1. (In conventional accounting, the increment is included in G^E or W^E, as a result of the sales and so on.)

$$W^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)+W^c \times \frac{P_1-P_0}{P_0}$$

Total assets side increments

(1)+(2)+(3)+(4a)

$$G^c \times \frac{P_2-P_0}{P_0}+W^c \times \frac{P_2-P_1}{P_0}+W^c \times \frac{P_1-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$$

$$=(G^c+W^c) \times \frac{P_2-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$$

$$=K^c \times \frac{P_2-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$$

(From expression (III), $G^c+W^c=K^c$)

Unrealized difference between market-value change increment and money-value change increment

Or

(1)+(2)+(3)+(4b)

$$G^c \times \frac{P_2-P_0}{P_0}+W^c \times \frac{P_2-P_1}{P_0}+W^c \times \frac{P_1-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$$

$$+W^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)$$

$$=(G^c+W^c) \times \frac{P_2-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+W^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)$$

$$=K^c \times \frac{P_2-P_0}{P_0}+W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+W^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)$$

(From expression (III), $G^c+W^c=K^c$)

Unrealized difference between market-value change increment and money-value change increment

Realized difference between market-value change increment and money-value change increment

On the equities side, meanwhile, the money-value change increment of capital stock, K^C, is regarded as the following increment, if the portion of capital, W^C, takes the form of monetary assets during the period prior to the point of time t_1:

$$K^C \times \frac{P_2 - P_0}{P_0}$$

It should be noted, however, that, if the portion of capital, W^C, takes the form of nonmonetary assets during the period from the point of time t_0 to the point of time t_1 and is invested in the existing nonmonetary assets just after changed to monetary assets as a result of the sales and so on (inclusive of depreciation), at point of time t_1, the market-value change increment which would occur in the portion of capital, W^C, during the period prior to the point of time t_1, is included in the realized surplus, designated as K^E, on the equities side, while represented by G^E (in the case of monetary assets) or W^E (in the case of nonmonetary assets) on the assets side. Therefore, it is necessary to pick up the money-value change increment of capital stock from the realized surplus in conventional accounting, to obtain the sufficient money-value change increment of capital stock.

To find out the balance sheet equation, including market-value change increments and money-value change increments, it is advisable to pick up the sufficient money-value change increment of capital stock, liabilities and so on, on one hand, while the realized market-value change increment, transferred from the realized surplus, is divided into the portion of money-value change increment and the difference between the market-value change increment and the money-value change increment, on the other hand.

It should be noted, moreover, that the money-value change increment (loss) of monetary assets which have already changed into nonmonetary assets is not entered upon the surplus account in conventional accounting, and that it is not included in the money-value change increment (loss) of existing monetary assets which is calculated in so-called inflation accounting.

If the money-value change increment of capital stock is entered upon the capital stock account, as shown in the price-level adjusted balance sheet, the money-value change increment (loss) of monetary assets occurring over the period during which capital stock had taken the form of monetary assets should be treated additionally as holding loss. In case the money-value change increment of such equities item as capital stock or earned surplus is entered upon the capital adjustment account and so on, to maintain the purchasing power of owners' equities, the money-value change increment (loss) of monetary assets occurring over the period during which capital stock or earned surplus had taken the form of monetary assets should be treated additionally as holding loss.

Let us assume that monetary assets, G^C, are acquired at point of time t_1, instead of t_0, in the above example. In this case, the portion of capital, G^C, takes the form of any other monetary assets or nonmonetary assets during the period from the point of time t_0 to the point of time t_1.

The assets side increment is shown as follows:

Assets side increment

(1) Money-value change increment of monetary assets

$$G^c \times \frac{P_2-P_1}{P_1}$$

(2) Market-value change increment of nonmonetary assets

$$W^c \times \left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+W^c \times \frac{P_2-P_1}{P_1}$$

(3) Denominator adjustment increment

$$W^c \times \frac{P_2-P_1}{P_0}-W^c \times \frac{P_2-P_1}{P_1}$$

$$G^c \times \frac{P_2-P_1}{P_0}-G^c \times \frac{P_2-P_1}{P_1}$$

(4) Increment occurring during the period prior to the point of time t_1

$$W^c \times \frac{P_1-P_0}{P_0} \quad \text{or} \quad W^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)+W^c \times \frac{P_1-P_0}{P_0}$$

(in the case of monetary assets) (in the case of nonmonetary assets)

$$G^c \times \frac{P_1-P_0}{P_0} \quad \text{or} \quad G^c \times \left(\frac{N_1-N_0}{N_0}-\frac{P_1-P_0}{P_0}\right)+G^c \times \frac{P_1-P_0}{P_0}$$

(in the case of monetary assets) (in the case of nonmonetary assets)

Also in the case of monetary assets which are acquired later than the date of the issue of capital stock, it is necessary to take into consideration the denominator adjustment increment which is essentially the same as that which is found out in calculating the money-value change increment of nonmonetary assets, as referred to before. The denominator adjustment increment results from the restating of the money-value change increments which occur during the period prior to the point of time of acquisition of existing assets.

$$G^c \text{ or } W^c \times \left(\frac{P_2-P_1}{P_0}-\frac{P_2-P_1}{P_1}\right)$$

$$= G^c \text{ or } W^c \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$$

Multiplier for money-value change increment occurring during the period prior to the point of time of acquisition of existing assets

Multiplier for money-value change increment occurring after the point of time of acquisition of existing assets

The denominator adjustment increment is changed into the above item.

If monetary assets, G^c, or nonmonetary assets, W^c, are aquired at point of time t_j, assuming that capital stock is issued at point of time t_0, the denominator adjustment increment occurring during the period from the point of time t_j to the point of time t_{j+1} would be shown as follows:

$$G^c \text{ or } W^c \times \left(\frac{P_{j+1}-P_j}{P_0} - \frac{P_{j+1}-P_j}{P_j} \right)$$

$$G^c \text{ or } W^c \times \underset{\substack{\text{Multiplier for money-value change increment occurring during the period prior to the point of time of acquisition of existing assets}}}{\frac{P_j-P_0}{P_0}} \times \underset{\substack{\text{Multiplier for money-value change increment occurring after the point of time of acquisition of existing assets}}}{\frac{P_{j+1}-P_j}{P_j}}$$

The foregoing relationship of the assets side increment to the equities side increment would be found out also in case the portion of capital which is represented by realized surplus, bonds payable, or other liabilities, takes the form of monetary or nonmonetary assets. Even if nonmonetary assets are not acquired simultaneously, and moreover, the individual price indexes of components of nonmonetary assets are different from each other at the same point of time, the circumstances would be essentially the same as those which we have observed so far.

Therefore, the money-value change increments of the assets side, including both the money-value change increment of monetary assets and the denominator adjustment increment, are conceived to be equal, in the aggregate, to the money-value change increments of such components of capital as capital stock, realized surplus, bonds payable, or other liabilities. It should be noted, here, that the realized money-value change increment of nonmonetary assets is included in monetary assets or changed to any other nonmonetary assets on the assets side and entered upon the realized surplus account on the equities side, respectively, if conventional accounting is applied.

Balance sheet equation and increment balance equation

Now, let us assume, here, that the money-value change increments of existing monetary and nonmonetary assets are designated as ΔG and ΔG_w, respectively, and that the money-value change increment of monetary assets which have already changed into nonmonetary assets, the money-value change increment of nonmonetary assets which have already been sold or exhausted, and the increments resulting from the restating of the money-value change increments of these past monetary or nonmonetary assets on the current price level, which is taken up

as the denominator adjustment increments, as referred to before, are designated as $\Delta G'$, $\Delta G_w'$, and ΔG_a, respectively.

If the money-value change increment of the equities side is designated as ΔK, the relationship of the money-value change increment of the assets side to the money-value change increment of the equities side, is represented by the following equation:

$$\underset{\text{(Assets side increment)}}{\Delta G+\Delta G'+\Delta G_a+\Delta G_w \quad +\Delta G_w'} \quad \underset{\text{(Equities side increment)}}{=\Delta K} \qquad \text{(VII)}$$

It should be noted, in the above equation, that the realized money-value change increment, $\Delta G_w'$, is included in the existing monetary assets or nonmonetary assets, G or W, on the assets side, while entered upon the realized surplus, K^E, on the equities side, if conventional accounting is applied. In case the money-value change increment of the equities side, ΔK, is taken up as a separate item in the balance sheet equation, the portion of profit which corresponds to the realized money-value change increment, $\Delta G_w'$, should be eliminated from the realized surplus, K^E.

The money-value change increment of existing monetary assets, ΔG, the money-value change increment of monetary assets which have already changed into nonmonetary assets, $\Delta G'$, and the denominator adjustment increments, ΔG_a, aer regarded as money-value change loss, and as a result, deducted from the surplus on the equities side of the balance sheet.*

* In inflation accounting, only the increment of existing net monetary items which are found out by the subtracting of liabilities from monetary assets (viz. the segment of ΔG) is sometimes taken up as money-value change loss, without regard to the increments, $\Delta G'$ and ΔG_a, in the income statemnt. If the money-value change increment of capital stock is subtracted from the surplus account and entered upon the capital stock account in the balance sheet, in this case, results that are essentially the same as those yielded by the eliminating of the increments, ΔG, $\Delta G'$, and ΔG_a, occurring in the portion of capital regarded as capital stock, from income, would be yielded. In the case of money-value change loss occurring in the portion of capital regarded as liabilities or earnings, the assets side increment of monetary assets or denominator adjustment increment, ΔG, $\Delta G'$ or ΔG_a, is previously offset by the equities side increment of liabilities or earnings which is to be entered upon the surplus account of the balance sheet.

Provided that only the money-value change increments of monetary and nonmonetary assets are taken into consideration, the balance sheet equation would be represented as follows:

$$\underset{\text{(Assets)}}{G+W+\Delta G_w} = \underset{\text{(Equities)}}{K^C+K^B+K^L+(K^E-\Delta G_w')+(\Delta K^C+\Delta K^B+\Delta K^L+\Delta K^E)}$$

ΔG_w: Unrealized money-value change increment of nonmonetary assets

$(K^E-\Delta G_w')$: Realized money-value change increment of nonmonetary assets

$-(\Delta G+\Delta G'+\Delta G_a)$: Money-value change loss (VIII)

Or

$$\underset{\text{(Assets)}}{G+W+\Delta G_w}=\underset{\text{(Equities)}}{K^C+K^B+K^L+(K^E-\Delta G_w')+(\Delta K^C+\Delta K^B+\Delta K^L+\Delta K^E)}$$

ΔG_w: Unrealized money-value change increment of nonmonetary assets

$(K^E-\Delta G_w')$: Realized money-value change increment of nonmonetary assets

$$-(\Delta K-\Delta G_w-\Delta G_w') \qquad \text{(IX)}$$

$(\Delta K-\Delta G_w-\Delta G_w')$: Money-value change loss

In the above balance sheet equation, money-value change loss, $(\Delta K-\Delta G_w-\Delta G_w')$, is deduced as follows:

$$\underset{\substack{\text{Money-value change increment of existing monetary assets}}}{\Delta G}+\underset{\substack{\text{Money-value change increment of past monetary assets}}}{\Delta G'}+\underset{\substack{\text{Denominator adjustment increment}}}{\Delta G_a}=\Delta K-\Delta G_w-\Delta G_w' \quad \text{(From Expression (VII))}$$

Then, let us designate the market-value change increment of existing nonmonetary assets and the market-value change increment of nonmonetary assets which have already been sold or exhausted, as ΔW and $\Delta W'$ respectively.

If the realized market-value change increment and the unrealized market-value change increment are substituted for the realized money-value change increment and the unrealized money-value change increment, respectively, in the balance sheet equation (IX), the realized difference between the market-value change increment and the money-value change increment, $(\Delta W'-\Delta G_w')$, and the unrealized difference between the market-value change increment and the money-value change increment, $(\Delta W-\Delta G_w)$, are entered additionally upon the equities side.

Therefore, the balance sheet equation and the increment balance equation are shown as follows:

(Balance sheet equation)

$$G+W+\Delta W=K^C+K^B+K^L+(K^E-\Delta W')+\Delta K^C+\Delta K^B+K^L+\Delta K^E$$
$$-(\Delta K-\Delta G_w-\Delta G_w')+(\Delta W-\Delta G_w)+(\Delta W'-\Delta G_w') \qquad \text{(X)}$$

(Increment balance equation)

$$\Delta W=\Delta K^C+\Delta K^B+\Delta K^L+(\Delta K^E-\Delta W')+(\Delta W-\Delta G_w)+(\Delta W'-\Delta G_w')$$
$$-(\Delta K-\Delta G_w-\Delta G_w') \qquad \text{(XI)}$$

K^C ..... Capital stock (on cost basis)
K^B ..... Bonds payable (on cost basis)
K^L ..... Liabilities other than bonds payable (on cost basis)
K^E ..... Earnings (on cost basis)
G ..... Monetary assets (on cost basis)
W ..... Nonmonetary assets (on cost basis)
ΔW ..... Unrealized market-value change increment of nonmonetary assets
$\Delta W'$ ..... Realized market-value change increment of nonmonetary assets
ΔG_w ..... Unrealized money-value change increment of nonmonetary assets
$\Delta G_w'$ ... Realized money-value change increment of nonmonetary assets

ΔK^C..... Money-value change increment of capital stock
ΔK^B..... Money-value change increment of bonds payable (Debtors' gain)
ΔK^L..... Money-value change increment of liabilities other than bonds payable (Debtors' gain)
ΔK^E..... Money-value change increment of earnings
$(\Delta K - \Delta G_w - \Delta G_w')$..... Money-value change loss

Five types of inflationary accounting

To clarify the characteristics of some different types of inflationary accounting practice, let us take a hypothetical example and apply it to the generalized equation.

The transactions and the balance sheets, including the interim balance sheets as at each point of time, which are represented in conventional accounting, and the tendencies of the general price index and the individual price index, are shown in the following tables:

Point of time t	Transaction
0	Issue of capital stock, amounting to \$600,000.
1	Issue of bonds payable, amounting to \$600,000. Geting loans, amounting to \$800,000. Acquisition of nonmonetary assets, amounting to \$2,000,000, the individual price index being designated as N_1.
2	Receipts from the sales, amounting to \$4,500,000, in case the cost of nonmonetary assets sold or used is regarded as \$900,000 on original cost basis. The retained income left after the deduction of related expenses, taxes, and dividends, totaling \$3,800,000, from the receipts from the sales, amounting to \$4,500,000 would be regarded in conventional accounting, as \$700,000, as shown in the following income statement. The residual receipts which take the form of monetary assets, totaling \$1,600,000, would be the sum of the receipts corresponding to the retained income, which is regarded as \$700,000, and the receipts corresponding to the cost of nonmonetary assets sold or used, which is regarded as \$900,000. Refundment of loans, amounting to \$800,000, with the result that the outstanding balance of the above loans would be regarded as zero. The remainder left after the deduction of the refundment of loans, amounting to \$800,000, from the above residual receipts, totaling \$1,600,000, would be regarded as \$800,000, which means the outstanding balance of monetary assets at point of time t_2.
3	Acquisition of nonmonetary assets, amounting to \$700,000, the individual price index being designated as N_3.
4	Balance sheet date.

(Income statement for the period from point of time t_0, to point of time t_4)

(Unit: \$1,000)

Revenue		
Income from the sales of nonmonetary assets		4,500
Expense		
Cost of nonmonetary assets, sold or used	900	

Wages & miscellaneous	2,360	
Interest	100	3,360
(Income from business operations)		1,140
Less:		
Taxes		320
Dividends		120
(Retained income)		700

(Interim balance sheet as at point of time t_0)

(Unit: $1,000)

Monetary assets	600	Capital stock	600
Total assets	600	Total equities	600

(Interim balance sheet as at point of time t_1)

(Unit: $1,000)

Nonmonetary assets	2,000	Capital stock	600
		Bonds payable	600
		Other liabilities	800
Total assets	2,000	Total equities	2,000

(Interim balance sheet as at point of time t_2)

(Unit: $1,000)

Monetary assets	800	Capital stock	600
Nonmonetary assets	1,100	Bonds payable	600
		Retained income	700
Total assets	1,900	Total equities	1,900

(Balance sheet as at point of time t_4 & interim balance sheet as at point of time t_3)

(Unit: $1,000)

Monetary assets	100	Capital stock	600
Nonmonetary assets	1,800	Bonds payable	600
		Retained income	700
Total assets	1,900	Total equities	1,900

General price index and individual price index

Point of time t	General price index P	Individual price index N
0	77.368	40
1	80	50
2	82.388	80
3	97	100
4	98	103

Now, let us assume, in this example, that the portion of capital, which is represented by capital stock, C, liabilities other than bonds payable, L, bonds payable, B, or earnings, E, on the equities side, would take the form of monetary or nonmonetary assets on the assets side, with being accompanied by the money-value change or market-value change increments which are found out by using the following multipliers:

Multiplier for calculating the market-value (current replacement cost) change increments

Sources of assets	from t_1 to t_2		from t_2 or t_3 to t_4		Total period of time
	Market-value change	Denominator adjustment	Market-value change	Denominator adjustment	
Capital stock 100[C]	$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+\frac{P_2-P_1}{P_1}$	$\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$			$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$, $\frac{P_2-P_1}{P_0}$
500[C]	$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+\frac{P_2-P_1}{P_1}$	$\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	$\left(\frac{N_4-N_2}{N_1}-\frac{P_4-P_2}{P_1}\right)+\frac{P_4-P_2}{P_1}$	$\frac{P_1-P_0}{P_0}\times\frac{P_4-P_2}{P_1}$	$\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$, $\frac{P_4-P_1}{P_0}$
Liabilities other than bonds payable 800[L]	$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+\frac{P_2-P_1}{P_1}$				$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$, $\frac{P_2-P_1}{P_1}$
Bonds Payable 600[B]	$\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)\times\frac{P_2-P_1}{P_1}$		$\left(\frac{N_4-N_2}{N_1}-\frac{P_4-P_2}{P_1}\right)+\frac{P_4-P_2}{P_1}$		$\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$, $\frac{P_4-P_1}{P_1}$
Earnings 700[E]			$\left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)+\frac{P_4-P_3}{P_3}$	$\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	$\left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$, $\frac{P_4-P_3}{P_2}$

Multiplier for calculating the money-value change increments

Sources of assets	Monetary assets				Nonmonetary assets			Total period of time
	Money-value change			Denominator adjustment	Money-value Change		Denominator adjustment	
	from t_0 to t_1	from t_2 to t_3	from t_3 to t_4		from t_1 to t_2	from t_2 or t_3 to t_4		
Capital stock 100[C]	$\frac{P_1-P_0}{P_0}$	$\frac{P_3-P_2}{P_2}$	$\frac{P_4-P_3}{P_2}$	$\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	$\frac{P_2-P_1}{P_1}$		$\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	$\frac{P_4-P_0}{P_0}$
500[C]	$\frac{P_1-P_0}{P_0}$				$\frac{P_2-P_1}{P_1}$	$\frac{P_4-P_2}{P_1}$	$\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	$\frac{P_4-P_0}{P_0}$
Liabilities other than bonds payble 800[L]					$\frac{P_2-P_1}{P_1}$			$\frac{P_2-P_1}{P_1}$
Bonds payable 600[B]					$\frac{P_2-P_1}{P_1}$	$\frac{P_4-P_2}{P_1}$		$\frac{P_4-P_1}{P_1}$
Earnings 700[E]		$\frac{P_3-P_2}{P_2}$				$\frac{P_4-P_3}{P_3}$	$\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	$\frac{P_4-P_2}{P_2}$

If this example is applied to the foregoing balance sheet equation (X) and the increment balance equation (XI), the equations are represented by the following items:

(Balance sheet equation) (Unit: $1,000)

Assets side (Total assets: 3,087)

$$100^{C}+500^{C}+600^{B}+700^{E}+\Delta W\left(=500^{C}\times\frac{N_4-N_1}{N_1}+600^{B}\times\frac{N_4-N_1}{N_1}+700^{E}\times\frac{N_4-N_3}{N_3}\right)$$

Monetary assets		Nonmonetary assets		
(1,187)	(530)	(636)	(21)	

Equities side (Total equities: 3,087)

(1) (Capital stock, liabilities (incl. bonds payable), and realized surplus from which the realized market-value change increments are substracted)

$$600^{C}+(800^{L}-800^{L})+600^{B}+\left(700^{E}-100^{C}\times\frac{N_2-N_1}{N_1}-800^{L}\times\frac{N_2-N_1}{N_1}\right)=1,360$$

Capital stock (on cost basis)	Loan	Refundment of loan	Liabilities (excl. bonds payable)	Bonds payable (on cost basis)	Realized surplus (on cost basis)	(60)	(480)
						$\Delta W'$ (540)	

(2) (Money-value change increments of equities)

$$\Delta K^{C}\left(=600^{C}\times\frac{P_4-P_0}{P_0}=160\right)$$

$$+\Delta K^{L}\left(=800^{L}\times\frac{P_2-P_1}{P_1}=23.88\right)$$

$$+\Delta K^{B}\left(=600^{B}\times\frac{P_4-P_1}{P_1}=135\right)$$

$$+\Delta K^{E}\left(=700^{E}\times\frac{P_4-P_2}{P_2}=132.65\right)=451.53$$

(3) (Difference between market-value change increment and money-value change increment)

(Unrealized increment)

$$(\Delta W-\Delta G_w)\Big[=\underbrace{\left(500^{C}\times\frac{N_4-N_1}{N_1}-500^{C}\times\frac{P_4-P_1}{P_1}\right)}_{(417.5)}+\underbrace{\left(600^{B}\times\frac{N_4-N_1}{N_1}-600^{B}\times\frac{P_4-P_1}{P_1}\right)}_{(501)}$$

$$+\underbrace{\left(700^{E}\times\frac{N_4-N_3}{N_3}-700^{E}\times\frac{P_4-P_3}{P_3}\right)}_{(13.78)}\Big]=932.28$$

(Realized increment)

$$(\Delta W'-\Delta G_w')\Big[=\underbrace{\left(100^{C}\times\frac{N_2-N_1}{N_1}-100^{C}\times\frac{P_2-P_1}{P_1}\right)}_{(57.01)}+\underbrace{\left(800^{L}\times\frac{N_2-N_1}{N_1}-800^{L}\times\frac{P_2-P_1}{P_1}\right)}_{(456.12)}\Big]$$

$$=513.13$$

(4) (Money-value change loss)

$$-(\Delta K-\Delta G_w-\Delta G_w')\Big[=100^C\times\frac{P_4-P_0}{P_0}+500^C\times\frac{P_4-P_0}{P_0}+800^L\times\frac{P_2-P_1}{P_1}+600^B\times\frac{P_4-P_1}{P_1}$$

$$\underbrace{(26.67)\qquad(133.33)\qquad(23.88)\qquad(135)}_{\Delta K\ (451.53)}$$

$$+700^E\times\frac{P_4-P_2}{P_2}-500^C\times\frac{P_4-P_1}{P_1}-600^B\times\frac{P_4-P_1}{P_1}-700^E\times\frac{P_4-P_3}{P_3}$$

$$\underbrace{(132.65)}\qquad\underbrace{(112.5)\qquad(135)\qquad(7.22)}_{\Delta G_w\ (254.72)}$$

$$-100^C\times\frac{P_2-P_1}{P_1}-800^L\times\frac{P_2-P_1}{P_1}\Big]=169.94$$

$$\underbrace{(2.99)\qquad(23.88)}_{\Delta G_w'\ (26.87)}$$

(Increment balance equation) (Unit: $1,000)

Assets side / Equities side

$$\Delta W = \Delta K^C+\Delta K^B+\Delta K^L+(\Delta K^E-\Delta W')+(\Delta W-\Delta G_w)+(\Delta W'-\Delta G_w')-(\Delta K-\Delta G_w-\Delta G_w')$$

$$(1,187)\quad\underbrace{(160)\ (135)\ (23.88)\ (132.65)\ (540)}\quad(932.28)\quad(513.13)\quad(169.94)$$

Unrealized market-value change increment of nonmonetary assets	Money-value change increment of equities less realized market-value change increment	Unrealized difference between market value change increment and mony-value change increment	Realized difference between market-value change increment and money-value change increment	Money-value change loss

1,187 (Assets side) = 1,187 (Equities side)

The inflationary accounting practice would be classified, at the outset, into two categories: the accounting system in which only the money-value change increment is taken up in the restating of assets existing at the year-end or nonmonetary assets sold or exhausted on the current price level and the accounting system in which not only the money-value change increment, but also the market-value change increment is taken up in the restating of assets existing at the year-end or nonmonetary assets sold or exhausted on the current price level.

The above money-value change increment contains the portion of money-value change increment of nonmonetary assets which would be usually included in the market-value change increment thereof, during the inflationary period.

It goes without saying that there are two types of accounting practice in both categories: one is to regard the money-value change increment or the market-value change increment eliminated entirely or partially from income, as that which is essentially the same as capital stock, and the other is to regard the money-value change increment or market-value change increment eliminated from income, as the special item which is eventually entered upon the surplus account. This problem belongs to the subdivision of the above two categories of the inflationary accounting practice.

In the following table, the type (I) represents the money-value change increments entered upon the assets side and the equities side of the balance sheet, while the type (II) represents the market-value change increments entered upon the assets side and the equities side of the balance sheet.

Moreover, the type (I) is subdivided into two categories, that is, the type (I-a) and the type (I-b), while the type (II) is subdivided into three categories, that is, the type (II-a), the type (II-b), and the type (II-c).

In this example, money-value change loss on the portion of capital, source of which is regarded as liabilities, is not incurred, because the portion of capital, source of which is regarded as bonds payable, is assumed to be invested in the existing nonmonetary assets and the portion of capital, source of which is regarded as liabilities other than bonds payable, is assumed to flow out from an enterprise as a result of its refundment, just after the changing of the form of nonmonetary assets into the form of monetary assets.

As clarified by the comparing of the type (I-a) with the type (II-a), the difference between the type (I-a) and the type (II-a), lies in the fact that the money-value change increments of nonmonetary assets, totaling $451,530, and the realized money-value change increments of nonmonetary assets, totaling $26,870 are entered upon the credit side of the capital stock account and the debit side of the surplus account, respectively, in the case of the type (I-a), while the market-value change increments of nonmonetary assets, totaling $1,896,940, and the realized market-value change increments of nonmonetary assets, totaling $540,000, are entered upon the credit side of the capital adjustment account or the capital stock account and the debit side of the surplus, respectively, in the case of the type (II-a).

Meanwhile, the difference between the type (I-a) and the type (I-b), or the difference between the type (II-a) and the type (II-b) or the type (II-c), lies in the fact that only the money-value change increment of capital stock, amounting to $160,000, is entered upon the credit side of the capital stock account and eliminated from income, the other increments being entered upon the realized surplus or the unrealized surplus, in the case of the type (I-b), the type (II-b), or the type (II-c), while the money-value change increments or the market-value change increments are entirely eliminated from income in the case of the type (I-a) or the type (II-a). The difference between the type (II-b) and the type (II-c) lies in the fact that the excess of the unrealized market-value change increment of nonmonetary assets in which such portion of capital as capital stock or earnings is invested, over its money-value change increment, and the unrealized market-value change increment of nonmonetary assets in which the portion of capital regarded as bonds payable is invested, totaling $1,067,280, are entered upon the unrealized surplus in the case of the type (II-b), while any other increment than the money-value change increment of capital stock is entered, as income, upon the surplus in the case of the type (II-c).

(1) Type (I-a) and Sweeney's stabilized financial statements

(Comparison of Five Type) (Unit: $1,000)

Items	Amount	Type (I) Assets side Type (I-a) (I-b)	Type (I) Equities side Type (I-a) Capital adjustment account	Type (I) Equities side Type (I-a) Surplus	Type (I) Equities side Type (I-b) Capital stock	Type (I) Equities side Type (I-b) Surplus	Type (II) Assets side Type (II-a) (II-b) (II-c)	Type (II) Equities side Tyye (II-a) Capital adjustment account	Type (II) Equities side Tyye (II-a) Surplus	Type (II) Equities side Type (II-b) Capital stock	Type (II) Equities side Type (II-b) Unrealized surplus	Type (II) Equities side Type (II-b) Realized surplus	Type (II) Equities side Type (II-c) Capital stock	Type (II) Equities side Type (II-c) Surplus
(Assets side)														
(Unrealized non-monetary assets increments)														
ΔW	1,187.						1,187.							
$-\Delta G_w$	−254.74													
$+\Delta G_w$	+254.72	254.72												
(Total assets side increments)	1,187.	254.72					1,187.							
(Equities side)														
(Equities side money-value change increments)														
ΔK^C	160.		160.		160.			160.		160.			160.	
ΔK^{L*}	23.88		23.88			23.88		23.88				23.88		23.88
ΔK^{B*}	135.		135.			135.		135.			135.			135.
ΔK^E	132.65		132.65			132.65		132.65				132.65		132.65
(Realized nonmonetary assets increments)														
$-\Delta W'$	−540.								−540.					
$+\Delta G_w'$	+ 26.87													
$-\Delta G_w'$	− 26.87			−26.87		−26.87						−26.87		−26.83

(Unrealized difference between market-value change increments and money-value change increments)													
$\Delta W^C - \Delta G_w{}^C$	417.5					417.5			417.5			417.5	
$\Delta W^B - \Delta G_w{}^B$	501.					501.			501.			501.	
$\Delta W^E - \Delta G_w{}^E$	13.78					13.78			13.78			13.78	
(Realized difference between market-value change increments and money-value change increments)													
$\Delta W'^C - \Delta G_w{}'^C$	57.01					57.01							
$\Delta W'^L - \Delta G_w{}'^L$	456.12					456.12							
(Money-value change loss)													
$\Delta K^{C,E} - \Delta G_w{}^{C,E} - \Delta G_w{}'^{C,E}$	−169.94		−169.94		−169.94		−164.94			−169.94		−169.94	
		451.53	−196.81	160.	94.72	1,896.94	−709.94	160.	1,067.28	− 40.28	160.	1,027.	
(Total equities side increments)	1,187.		254.72		254.72		1,187.			1,187.		1,187.	

* In this example, there is no money-value change loss on the portion of capital, represented by bonds payable or other liabilities. If the portion of capital, represented by bonds payable or other liabilities, takes the form of monetary assets, the segment of ΔK^B or ΔK^L, viz., $(\Delta K^B - \Delta G_w{}^B - \Delta G_w{}'^B)$ or $(\Delta K^L - \Delta G_w{}^L - \Delta G_w{}'^L)$, should be entered upon the credit side of the surplus, in the cases of the type (I-a) and the type (II-a).

Now, let us take up the type (I-a).

Most assets revaluation systems, which have been enforced in such inflationary countries as a phenomenal drop in the money-value is witnessed, belong to this type, insofar as the general price index is taken up as the standard by which price level change is measured, whether represented by the cost-of-living index, or the whole sale price index.

It is certain that the practices of the type (I-a) are carried out partially, in the practical field. The relationship of the assets side increment to the equities side increment might be properly mentioned to be disregarded.

Especially, the general whole sale index, which seems to be used as a prevailing standard for assets revaluation, would not serve as a standard for the restatement of the measuring unit of such equities item as capital stock, liabilities, or surplus.

Mostly, the money-value change loss, resulting from the holding of monetary assets during the inflationary period, is disregarded.

Under these circumstances, it is difficult to explain the nature of what the increments, entered upon the equities side as a result of assets revaluation, represent in the aggregate.

One of the problematical points of this type lies in the fact that the money-value change increment of liabilities, meaning the debtor's gain, is eliminated permanently from income. The debtors' gain is accompanied by the creditor's loss, which is treated as the holding loss of monetary assets in the creditor's price-level adjusted balance sheet.

The purchasing power expended for nonmonetary assets, sources of which are attributed to liabilities, is maintained at the creditor's sacrifice. This type would be applicable to the inflationary economic conditions under which it is necessary to mantain or recover the business activity of an enterprise rather than to take up the relationship of the debtor's gain to the creditor's loss.

As one of the representative accounting literatures which belong to this type, we would take up Sweeney's stabilized accounting (Henry W. Sweeney, Stabilized Accounting, 1936), although it might be regarded as the type (I-b) in some respects.*

His price-level adjusted balance sheet is represented by the following balance sheet equation:

(Sweeney's price-level adjusted balance sheet)

G	$+W$	$+\Delta G_w$
:	:	:
Monetary assets account	Fixed assets (on cost basis)	Unrealized money-value change increment of fixed assets

: Fixed assets account

$=K^C$	$+\Delta G_w$	$+\Delta G_w'$
Capital stock account	Unrealized money-value change increment of fixed assets	Realized money-value change increment of fixed assets (depreciation etc.)

Capital stock account

$+K^E$	$-\Delta G_w'$	$+\Delta K^R$	$-\Delta G^R$
Realized surplus (on cost basis)	Realized money-value change increment of fixed assets (depreciation etc.)	Money-value change increment of residual revenue which takes the form of monetary assets	Money-value change loss of monetary assets

Surplus account

ΔK^R.....Money-value change increment of residual revenue which takes the form of monetary assets.
ΔG.....Money-value change loss of the existing monetary assets.
(In Sweeney's model, $\Delta K^R = \Delta G$.)

His model is too simple to clarify the problem of whether it is intended to maintain the money-value of nonmonetary assets or to maintain the purchasing power of capital stock. For, the maintaining of the money-value of nonmonetary assets on the current price level, yields, in his model, results that are essentially the same as those yielded by the maintaining of the purchasing power of capital stock.

It might be, however, concluded that his object is to maintain the money-value of nonmonetary assets, in view of the fact that the money-value change loss of monetary assets is treated as unrealized loss and eventually offset by the money-value change increment of revenue when the monetary assets to which the money-value change loss accrues are paid out for dividends.

The money-value change increment of nonmonetary assets, ΔG_w, is entered upon the nonmonetary assets account, while the same increment as the assets side increment, ΔG_w, is entered upon the capital stock account. If the equities side contains any liabilities item, the money-value change increment of liabilities, ΔG_w^L, besides the above increment, ΔG_w^C, might be entered upon the capital stock account, with the result that the money-value change increment entered upon the capital stock account, is not equal to the increment resulting from the restating of capital stock on the current price level, ΔK^C.

In the case of Sweeney's approach, the realized money-value change increment of nonmonetary assets, $\Delta G_w'$, is subtracted from income, for the reason that the cost of nonmonetary assets, sold or used, is restated previously on the year-end price level.

The money-value change loss on the net monetary-assets is entered, as unrealized loss, upon the debit side of the surplus, while the same money-value

change increment as the above, which is included in the value-change adjustment account in the following balance sheet, is entered upon the credit side of the surplus, with the result that the money-value of capital stock is not always maintained on the current price level. For, the money-value change loss is eventually offset by the money-value change increment of revenue which is entered upon the surplus. It should be noted, here, that the money-value change increment resulting from the restating of accumulated depreciation of fixed assets on the current year-end price level are subtracted from the surplus, while entered upon the capital stock account.

Now, let us take up the following money-value change loss of monetary assets to which nonmonetary assets changed as a result of the sales and so on (inclusive of depreciation), at point of time t_2, in this example:

$$100^C \times \frac{P_4-P_2}{P_2}=100\times\frac{98-82.388}{82.388}=18.95 \qquad \text{(Unit: \$1,000)}$$

The above item is regarded as the segment of the increment, ΔK^C, in the case of the increment entered upon the credit side of the surplus, or the segment of the loss, $(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)$, in the case of money-value change loss.

The Sweeney's income statement is restated on the year-end price level. For this reason, the realized money-value change increment of nonmonetary assets, $\Delta G_w'$, would be represented by the following items, in this example:

$$100^C\times\frac{P_4-P_1}{P_1}+800^L\times\frac{P_4-P_1}{P_1}=22.5+180.=202.5$$

$$\left(\text{instead of the increment, } 100^C\times\frac{P_2-P_1}{P_1}+800^L\times\frac{P_2-P_1}{P_1}(=2.99+23.88=26.87).\right)$$

(Unit: \$1,000)

If the increment, corresponding to the foregoing money-value change loss, is entered upon the capital stock, instead of the surplus account, the following items which would occur in the same portion of capital during the same period of time are doubly entered upon the capital stock account:

$$100^C\times\frac{P_4-P_2}{P_2}=18.95 \qquad \text{(Unit: \$1,000)}$$

If the portion of capital to which the above increment accrues, amounting to \$100,000, is assumed to be invested, just after the sales and so on (inclusive of depreciation), at point of time t_2, into the substitute therefor or any other nonmonetary assets, instead of taking the form of monetary assets, during this period, however, the money-value change increment that is essentially the same as the above would be doubly entered upon the capital stock account, insofar as the cost of goods sold and the cost of existing nonmonetary assets are restated on the year-end price level.

* In the foregoing Sweeney's model, the portion of capital which is entered upon the capital stock account on the equities side, is entirely invested into fixed assets, without borrowing.

Therefore,

$$\Delta G_w + \Delta G_w' = \Delta K^C$$

Then, the above balance sheet equation would be shown as follows:

G	$+W$	$+\Delta G_w$
Monetary assets account	Fixed assets (on cost basis)	Unrealized money-value change increment of fixed assets

Fixed assets account

$=K^C$	$+\Delta K^C$	$+K^E$	$+\Delta G_w$	$-\Delta K^C$
Capital stock account (on cost basis)	Money-value change increment of capital stock	Realized surplus (on cost basis)	Unrealized money-value change increment of fixed assets	Money-value change increment of capital stock

Capital stock account

$+\Delta K^R$	$-\Delta G^R$
Money-value change increment of residual revenue which takes the form of monetary assets	Money-value change loss of monetary assets

Surplus account

If the increment, corresponding to the money-value change loss of monetary assets which would occur in the portion of capital regarded as capital stock, is included in the money-value change increment of capital stock, ΔK^C, instead of the money-value change increment which results from the restating of accumulated depreciation of fixed assets on the current year-end price level, assuming that the increment, ΔK^R, is offset by the loss, ΔG^R, in the above balance sheet equation, the Sweeney's approach yields results that are essentially the same as those yielded by the type (I-b).

Type (I-a) (Unit: $1,000)

Balance sheet as at point of time t_4

Monetary assets	100	Bonds payable		600
		Capital stock		600
		Adjustment account		
(Total monetary assets)	100	1. Nonmonetary assets increments		
		a. Unrealized money-value change increments		
Nonmonetary assets Original cost	500	$500^C \times \frac{P_4-P_1}{P_1}$	112.5	
$500^C \times \frac{P_4-P_1}{P_1}$	112.5	$600^B \times \frac{P_4-P_1}{P_1}$	135.	
Original cost	600	$700^E \times \frac{P_4-P_3}{P_3}$	7.22	254.72
		b. Realized money-value change increments		
		$800^L \times \frac{P_2-P_1}{P_1}$	23.88	
$600^B \times \frac{P_4-P_1}{P_1}$	135	$100^C \times \frac{P_2-P_1}{P_1}$	2.99	26.87
		2. Money-value change increments		
Original cost	700	a. Holding loss		

		$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41		
$700^{E}\times\frac{P_4-P_3}{P_3}$	= 7.22	$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95		
(Total nonmonetary assets)	2,054.72	$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15		
(Total assets)	2,154.72	b. Denominator adjustment			
		$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1		
		$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23		
		$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82		
		$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	169.94	451.53
		Surplus, on conventional basis		700.	
		1. Realized nonmonetary assets increments			
		$100^{C}\times\frac{P_2-P_1}{P_1}$	2.99		
		$800^{L}\times\frac{P_2-P_1}{P_1}$	23.88	−26.87	
		2. Money-value change loss			
		a. Holding loss			
		$600^{C}\times\frac{P_i-P_0}{P_0}$	20.41		
		$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95		
		$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15		
		b. Denominator Adjustment			
		$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1		
		$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23		
		$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82		
		$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94	503.19
			(Total equities)		2,154.72

Type (I-a) (Unit: $1,000)

Income statement
(during the period from point of time t_0 to point of time t_4)

Revenue		
Income from the sales of nonmonetary assets		4,500
Expense		
Cost of nonmonetary assets, sold or used	900	

Wages & miscellaneous		2,360	
Interest		100	3,360
	(Income, on conventional basis)		1,140
Less:			
Money-value change increments of nonmonetary assets sold or used ($\Delta G_w'^{C,L}$)			
$100^C \times \frac{P_2-P_1}{P_1}$		2.99	
$800^L \times \frac{P_2-P_1}{P_1}$		23.88	−26.87
Money-value change loss ($\Delta K^{C,E}-\Delta G_w^{C,E}-\Delta G_w'^{C,E}$)			
a. Holding loss			
$600^C \times \frac{P_1-P_0}{P_0}$	20.41		
$100^C \times \frac{P_4-P_2}{P_2}$	18.95		
$700^E \times \frac{P_3-P_2}{P_2}$	124.15		
b. Denominator adjustment			
$100^C \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1		
$100^C \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23		
$500^C \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82		
$700^E \times \frac{P_3-P_2}{P_2} \times \frac{P_4-P_3}{P_3}$	1.28		−169.94
	(Income for the year)		943.19
Taxes		320	
Dividends		120	−440
	(Retained income)		503.19

(2) Type (I-b) and APB's financial statements or British current purchasing power accounting's financial statements

In the case of the type (I-b), only the money-value change increment of the component of capital which is represented by capital stock on the equities side, is eliminated permanently from income.

In the case of this type, the money-value change increments of bonds payable, other liabilities, and earnings, ΔK^B, ΔK^L, and ΔK^E, are entered upon the credit side of the realized surplus, while the money-value change increment of capital stock, ΔK^C, is entered upon the capital stock account.

In the realized surplus account, the realized money-value change increments of nonmonetary assets and the money-value change loss are offset by the money-value change increments of bonds payable, other liabilities, and earnings, with the result that the year-end closing balance of money-value change increments is

found out by the substracting the money-value change increments of capital stock from the total unrealized money-value change increments of nonmonetary assets, as follows:

Money-value change increments in the realized surplus account

(Sources of assets)	Assets side increments		Equities side increments	Total money-value change increments (1)+(2)+(3) (4)
	Realized money-value change increments (1)	Money-value change loss (2)	(3)	
Liabilities other than bonds payable	$-\Delta G_w{}'^L$	$-(\Delta K^L-\Delta G_w{}^L-\Delta G_w{}'^L)$	ΔK^L	$\Delta G_w{}^L$
Bonds payable	$-\Delta G_w{}'^B$	$-(\Delta K^B-\Delta G_w-\Delta G_w{}'^B)$	ΔK^B	$\Delta G_w{}^B$
Earnings	$-\Delta G_w{}'^E$	$-(\Delta K^E-\Delta G_w{}^E-\Delta G_w{}'^E)$	ΔK^E	$\Delta G_w{}^E$
Capital stock	$-\Delta G_w{}'^C$	$-(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)$		$-\Delta K^C+\Delta G_w{}^C$

In this example,

$\Delta G_w{}^L=0$, $\Delta G_w{}'^B=0$, $\Delta K^B-\Delta G_w{}^B-\Delta G_w{}'^B=0$, $\Delta K^B=\Delta G_w{}^B$, $\Delta G_w{}'^E=0$

(Total money-value change increments) Unit: \$1,000

$$-\Delta K^C + \Delta G_w{}^C + \Delta G_w{}^B + \Delta G_w{}^E = 94.72$$
$$\vdots \quad \vdots \quad \vdots \quad \vdots$$
$$160 \quad 112.5 \quad 135 \quad 7.22$$

As clarified above, the unrealized money-value change increments of nonmonetary assets, $\Delta G_w{}^C$, $\Delta G_w{}^B$, and $\Delta G_w{}^E$, amounting to \$112,500, \$135,000, and \$7,220, respectively, are offset by the money-value change increment of capital stock, ΔK^C, amounting to \$160,000, with the result that the net credit balance of increments, amounting to \$94,720, is shown in the surplus account.

It should be noted, here, that the problematical point lies in the fact that the unrealized money-value change increments of nonmonetary assets, occurring in the portion of capital regarded as liabilities and earnings, are treated previously as the component of the surplus (the realized surplus, in this case) in the year-end balance sheet, and thereafter, eliminated from income in the income statement (the realized surplus in the year-end balance sheet) for future periods during which the above nonmonetary assets are sold, exhausted, or depreciated. At point of time when the above nonmonetary assets are sold, exhausted, or depreciated, results that are essentially the same as those which are yielded by conventional accounting would be yielded, insofar as the portion of capital regarded as liabilities and earnings is concerned.

If the money-value change increment of bonds payable, ΔK^B, amounting to \$135,000, is transferred from the unrealized surplus to the realized surplus, in the case of the type (II-b), just the same results as the above would be yielded in the realized surplus.

Although W. Mahlberg's or E. Schmalenbach's approach, which was taken

up to cope with a rapid and phenomenal drop in the value of money, belongs to the type (I-b), as referred to before, this type might be properly mentioned to be adaptable to the creeping inflationary period, just like the type (II-b) or the type (II-c).

Now, let us take up the price-level adjusted statements of APB Statement No. 3 (AICPA, Financial Statements Restated for General Price-Level Changes 1969) and the current purchasing power accounting's statements of the UK and Irish Accounting Bodies, 1974, quoted by P.R.A. Kirkman (P.R.A. Kirkman, Inflation Accounting, 1975), as those which belong to the type (I-b).

According to the APB Statement No. 3 (AICPA, Financial Statements Restated for General Price-Level Changes, 1969), the balance sheet is represented by the following balance sheet equation:

(AICPA's price-level adjusted balance sheet)

G	$+W$	$+\Delta G_w$
Cash & receivables (net) : Monetary assets account	Fixed assets, inventories, marketable securities, & prepaid expenses (on cost basis)	Unrealized Money-value change increments of fixed assets, inventories, marketable securities, & prepaid expenses
	Nonmonetary assets account	

$= K^C$	$+\Delta K^C$	$+K^L$	$+K^R$	$+\Delta K^R$
Capital stock (on cost basis)	Money-value change increment of capital stock	Current liabilities & long-term debt account	Deferred income (on cost basis)	Money-value change increment of deferred income
Capital stock account			Deferred income account	

$+K^E$	$+\Delta G_w$	$-\Delta K^R$	$-\Delta K^C$
Retained earnings (on cost basis)	Unrealized money-value change increments of fixed assets, inventories, marketable securities, & prepaid expenses	Money-value change increment of deferred income	Money-value change increment of capital stock
Retained earnings (Surplus account)			

K^R.....Deferred income

In the above APB's example, the money-value change increments of liabilities and earnings, ΔK^L and ΔK^E, are entered upon the credit side of the realized surplus, while the money-value change increments of capital stock and deferred income, ΔK^C and ΔK^R, are entered upon the capital stock account and the deferred income account, respectively.

In the realized surplus account, the realized money-value change increments of nonmonetary assets and the money-value change loss are offset by the money-

Money-value change increments in the realized surplus account

(Sources of assets)	Assets side increments		Equities side increments	Total money-value change increments (1)+(2)+(3) (4)
	Realized money-value change increments (1)	Money-value change loss (2)	(3)	
Liabilities	$-\Delta G_w{}'^L$	$-(\Delta K^L-\Delta G_w{}^L-\Delta G_w{}'^L)$	ΔK^L	$\Delta G_w{}^L$
Deferred income	$-\Delta G_w{}'^R$	$-(\Delta K^R-\Delta G_w{}^R-\Delta G_w{}'^R)$		$-\Delta K^R+\Delta G_w{}^R$
Earnings	$-\Delta G_w{}'^E$	$-(\Delta K^E-\Delta G_w{}^E-\Delta G_w{}'^E)$	ΔK^E	$\Delta G_w{}^E$
Capital stock	$-\Delta G_w{}'^C$	$-(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)$		$-\Delta K^C+\Delta G_w{}^C$

(Total money-value change increment)

$$\Delta G_w{}^L+\Delta G_w{}^R+\Delta G_w{}^E+\Delta G_w{}^C-\Delta K^C-\Delta K^R=\Delta G_w-\Delta K^C-\Delta K^R$$

value change increments of liabilities and earnings, with the result that the year-end closing balance of money-value change increments is found out by the subtracting the money-value change increments of capital stock and deferred income from the total unrealized money-value change increments of nonmonetary assets, as above.

It should be noted that there is no overlap of the entering of the money-value change increments which would occur in the same component of capital during the same period of time, upon the capital stock account, even if the cost of goods sold is restated on the year-end price level in the APB's income statement or the British current purchasing power accounting's income statement. For, only the money-value change increment of capital stock is eventually eliminated from income, in these income statements.

In Table (4), general price-level gains (Column 3) are calculated in the same way as the APB's method, which is shown in the Appendix C, Paragraph 32.

As clarified by Table (5), the APB's income statement yields results that are essentially the same as those yielded by the type (I-b).

In the case of the British calculation of purchasing power gains or losses, the short-term monetary items are discriminated from the long-term monetary items, as shown in the footnote of Table (6), which is quoted from the Kirkman's example (P.R.A. Kirkman, ibid., p.p. 57–60.). In the Kirkman's example, such expenditure as interest, tax, or dividend, is not restated on the year-end price level. Although general purchasing power gains or losses are calculated without regard to the discrimination between the short-term monetary items and the long-term monetary items, in Table (6), results that are essentially the same as those yielded by the British current purchasing power accounting's income statement would be yielded, as shown in the footnote of Table (6).

As clarified by Table (5) and Table (7), there is no difference between the APB's income statement and the current purchasing power accounting's income statement.

Table (1)

Type (I-b) (Unit: $1,000)

Balance sheet as at point of time t_4

Monetary assets	100	Bonds payable			600
(Total monetary assets)	100	Capital stock, on conventional basis		600	
Nonmonetary assets					
Original cost 500		a. Monetary assets increments			
$500^C \times \frac{P_4-P_1}{P_1} = 112.5$		$600^C \times \frac{P_1-P_0}{P_0}$	20.41		
Original cost 600		$100^C \times \frac{P_4-P_2}{P_2}$	18.95		
$600^B \times \frac{P_4-P_1}{P_1} = 135$		b. Nonmonetary assets increments			
Original cost 700		$100^C \times \frac{P_2-P_1}{P_1}$	2.99		
$700^E \times \frac{P_4-P_3}{P_3} = 7.22$		$500^C \times \frac{P_4-P_1}{P_1}$	112.5		
(Total non-monetary assets)	2,054.72	c. Denominator adjustment			
(Total assets)	2,154.72	$100^C \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1		
		$100^C \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23		
		$500^C \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82	160	760
		Surplus, on conventional basis		700	
		1. Accretion of increments			
		$600^B \times \frac{P_4-P_1}{P_1}$	135		
		$700^E \times \frac{P_4-P_3}{P_3}$	7.22		
		$700^E \times \frac{P_3-P_2}{P_2}$	124.15		
		$700^E \times \frac{P_3-P_2}{P_2} \times \frac{P_4-P_3}{P_3}$	1.28	267.65	
		2. Realized nonmonetary assets increment deduction			
		$100^C \times \frac{P_2-P_1}{P_1} = 2.99$		−2.99	
		3. Money-value change loss			
		a. Holding loss			
		$600^C \times \frac{P_1-P_0}{P_0}$	20.41		
		$100^C \times \frac{P_4-P_2}{P_2}$	18.95		
		$700^E \times \frac{P_3-P_2}{P_2}$	124.15		
		b. Denominator adjustment			

$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1			
$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23			
$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82			
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94	94.72	794.72
				2,154.72

Table (2)

Type (I-b) (Unit: $1,000)

Income statement

(during the period from point of time t_0 to point of time t_4)

Revenue			
Income from the sales of monetary assets			4,500
Expense			
Cost of nonmonetary assets, sold or used		900	
Wages & miscellaneous		2,360	
Interest		100	3,360
(Income, on conventional basis)			1,140
Less:			
1. Money-value change increments of nonmonetary assets sold or used ($\Delta G_w{}'^{C,L}$)			
$100^{C}\times\frac{P_2-P_1}{P_1}$		2.99	
$800^{L}\times\frac{P_2-P_1}{P_1}$		23.88	−26.87
2. Money-value change loss ($\Delta K^{C,E}-\Delta G_w{}^{C,E}-\Delta G_w{}'^{C,E}$)			
a. Holding loss			
$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41		
$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95		
$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15		
b. Denominator adjustment			
$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1		
$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23		
$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82		
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28		−169.94
	(Income for the year)		943.19
Taxes		320	
Dividends		120	−440
	(Retained income)		503.19

Table (3)

Type (I-b) (Unit: $1,000)

Relationship of the income statement to the balance sheet

Retained income	503.19
Plus:	
Entering of money-value change increments for liabilities upon the surplus account ($\Delta K^{B,L}$)*	
$600^{B}\times\frac{P_4-P_1}{P_1}$	135
$800^{L}\times\frac{P_2-P_1}{P_1}$	23.88
Accretion of money-value change increments for earnings (ΔK^{E})	
$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15
$700^{E}\times\frac{P_4-P_3}{P_2}$	8.5
(Net increase in retained income)	794.72

* In this case, the portion of capital, represented by bonds payable, amounting to $600,000, is assumed to be invested in nonmonetary assets. Therefore,

$$\Delta K^{B}=\Delta G_{w}{}^{B}$$

The portion of capital, represented by other liabilities, amounting to $800,000, is assumed to flow out from an enterprise as a result of refundment. Therefore,

$$\Delta K^{L}=\Delta G_{w}{}'^{L}$$

Table (4) APB's calculation of purchasing power gains or losses

(Unit: $1,000)

Net monetary assets, restated on the year-end price level (1)	Net monetary assets, at historical cost (2)	General price-level gain/(loss) (3) (1)−(2)
$600^{C}\times\frac{P_4}{P_0}$ (Opening net balance)	600 (Opening net balance)	$600^{C}\times\frac{P_4-P_0}{P_0}$
Add:	Add:	
Sales		
$4,500\times\frac{P_4}{P_2}$	4,500	$4,500\times\frac{P_4-P_2}{P_2}$
Deduct:	Deduct:	
Purchases of nonmonetary assets, at point of time t_1		$-600^{C}\times\frac{P_4-P_1}{P_1}$
$(600^{C}+600^{B}+800^{L})\times\frac{P_4}{P_1}$	2,000	$-600^{B}\times\frac{P_4-P_1}{P_1}$
		$-800^{L}\times\frac{P_4-P_1}{P_1}$
Wages and miscellaneous		
$2,360\times\frac{P_4}{P_2}$	2,360	$-2,360\times\frac{P_4-P_2}{P_2}$

Interest $100\times\frac{P_4}{P_2}$	100	$-100\times\frac{P_4-P_2}{P_2}$
Taxes $320\times\frac{P_4}{P_2}$	320	$-320\times\frac{P_4-P_2}{P_2}$
Dividends $120\times\frac{P_4}{P_2}$	120	$-120\times\frac{P_4-P_2}{P_2}$
Purchases of nonmonetary assets, at point of time t_3 $700^{E}\times\frac{P_4}{P_3}$	700	$-700^{E}\times\frac{P_4-P_3}{P_3}$
	500 : (Closing net balance)	

The third column is restated as follows:

$$600^{C}\times\frac{P_4-P_0}{P_0}-\left(600^{B}\times\frac{P_4-P_1}{P_1}+500^{C}\times\frac{P_4-P_1}{P_1}+900^{C,L}\times\frac{P_4-P_1}{P_1}+700^{E}\times\frac{P_4-P_3}{P_3}\right)$$

(160) (135) (112.5) (202.5) (7.22)

Existing assets : Cost of assets sold : Existing assets

$$+\left(4,500\times\frac{P_4-P_2}{P_2}-2,360\times\frac{P_4-P_2}{P_2}-320\times\frac{P_4-P_2}{P_2}-100\times\frac{P_4-P_2}{P_2}-120\times\frac{P_4-P_2}{P_2}\right)$$

(852.72) (447.2) (60.64) (18.95) (22.74)

Residual receipts from gross income

$=5.97$

General price-level loss

Table (5) Relationship of APB's income statement to Type (I-b)

(Unit: $1,000)

	APB Statement No. 3 (1)		In case revenue and expense are stated on historical cost basis (2)	
Sales	$4,500\times\frac{P_4}{P_2}$	5,352.72	$4,500\times\left(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\right)$	4,500
Operating expenses:				
Cost of nonmonetary assets, sold or used	$-900^{C,L}\times\frac{P_4}{P_1}$	−1,102.5	$-900^{C,L}\times\left(\frac{P_4}{P_1}-\frac{P_4-P_1}{P_1}\right)$	−900
Wages & miscellaneous	$-2,360\times\frac{P_4}{P_2}$	−2,807.2	$-2,360\times\left(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\right)$	−2,360
Interest	$-100\times\frac{P_4}{P_2}$	−118.95	$-100\times\left(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\right)$	−100
General price-level gain or loss	$-600^{C}\times\frac{P_4-P_0}{P_0}+\left(600^{B}\times\frac{P_4-P_1}{P_1}\right.$		$-600^{C}\times\frac{P_4-P_0}{P_0}$	−160

	$+500^{C}\times\frac{P_4-P_1}{P_1}+900^{C,L}\times\frac{P_4-P_1}{P_1}$		$600^{B}\times\frac{P_4-P_1}{P_1}$	135
	$+700^{E}\times\frac{P_4-P_3}{P_3}\Big)-\Big(4,500$		$500^{C}\times\frac{P_4-P_1}{P_1}$	112.5
	$\times\frac{P_4-P_2}{P_2}-2,360\times\frac{P_4-P_2}{P_2}$		$700^{E}\times\frac{P_4-P_3}{P_3}$	7.22
	$-320\times\frac{P_4-P_2}{P_2}-100\times\frac{P_4-P_2}{P_2}$		(Total net money-value change increments)	94.72
	$-120\times\frac{P_4-P_2}{P_2}\Big)$	−5.97		
Taxes	$-320\times\frac{P_4}{P_2}$	−380.64	$-320\times\Big(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\Big)-320$	
Dividends	$-120\times\frac{P_4}{P_2}$	−142.74	$-120\times\Big(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\Big)-120$	
	(Retained income)	794.72	(Retained income)	794.72

Table (6) Current purchasing power accounting's calculation of purchasing power gains or losses (Unit: $1,000)

(Net monetary items which are found out by subtracting liabilities, including bonds payable, from monetary assets*)

Opening balance	$600^{C}\times\frac{P_4-P_0}{P_0}$	160
Sales	$4,500\times\frac{P_4-P_2}{P_2}$	852.72
Less:		
Purchases of nonmonetary assets, at point of time t_1		
$(600^{C}+600^{B}+800^{L})\times\frac{P_4-P_1}{P_1}(=135+135+180)$		−450
Wages & miscellaneous	$2,360\times\frac{P_4-P_2}{P_2}$	−447.2
Purchases of nonmonetary assets, at point of time t_3	$700^{E}\times\frac{P_4-P_3}{P_3}$	−7.22
	(Total)	108.3
		Purchasing power loss

* In the Kirkman's example (Kirkman; ibid., p.p. 54-61.), purchasing power gains are calculated as follows: (Unit: £)

1. Purchasing power gains or losses on short-term items

Opening balance

$$-170\times1.16-(-170)=-27.2\fallingdotseq-27$$

(Monetary items) (Monetary items) (Purchasing power gains)

Transactions during the year

$$(1,500-1,000-190)\times1.08-(1,500-1,000-190)=310\times1.08-310=24.8\fallingdotseq25$$

(Sales)(Purchases): (General expenses) (Sales)(Purchases): (General expenses) (Purchasing power losses)

Net purchasing power gains on short-term net monetary items

$$27-25=-2$$

(Net purchasing power gains)

2. Purchasing power gains on long-term items (Debentures)

$$-100\times 1.16-(-100)=-16$$

(Monetary items) (Purchasing power gains)

(Total purchasing power gains)

$$-2-16=-18$$

If purchasing power gains are calculated by using the price indexes in this example, without regard to the discrimination between the short-term items and the long-term items, results that are essentially the same as the above would be yielded, as follows:

Opening balance

$$-270\times\frac{P_5-P_2}{P_2}\left(=-270\times\frac{128-110.34}{110.34}\right) \qquad -43.2\fallingdotseq -43$$

(Monetary items)

Sales

$$1,500\times\frac{P_5-P_3}{P_3}\left(=1,500\times\frac{128-118.52}{118.52}\right) \quad 120$$

Less:

Purchases $1,000\times\frac{P_5-P_3}{P_3}\left(=1,000\times\frac{128-118.52}{118.52}\right)$ 80(—)

General expenses $190\times\frac{P_5-P_3}{P_3}\left(=190\times\frac{128-118.52}{118.52}\right)$ 15.2(—) $\qquad 24.8\fallingdotseq 25$

(Purchasing power gains on monetary items) $\quad -18$

The above price indexes are inferred from the following conversion factors which are used to calculate purchasing power gains or losses in current purchasing power accounting:

Point of time t	Conversion factor	Price index P (Base: Jan. 1, '73=100)
0 (January 1, '73)	1.28	100
1 (October 1, '73)	1.20	106.67
2 (January 1, '74)	1.16	110.34
3 (July 1, '74)	1.08	118.52
4 (October 1, '74)	1.02	125.49
5 (December 12, '74)	1.	128.

Table (7) Relationship of current purchasing power accounting's income statement to Type (I-b) (Unit: $1,000)

	Current purchasing power accounting (1)		In case revenue and expense are stated on historical cost basis (2)	
Sales	$4,500\times\frac{P_4}{P_2}$	5,352.72	$4,500\times\left(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\right)$	4,500
Less: Cost of non-monetary assets, sold or used	$-900^{C,L}\times\frac{P_4}{P_1}$	−1,102.5	$-900^{C,L}\left(\frac{P_4}{P_1}-\frac{P_4-P_1}{P_1}\right)$	−900
Less: Wages & miscellaneous	$-2,360\times\frac{P_4}{P_2}$	−2,807.2	$-2,360\times\left(\frac{P_4}{P_2}-\frac{P_4-P_2}{P_2}\right)$	−2,360
Interest		−100		−100
Less: Purchasing power loss on monetary items	$-600^{C}\times\frac{P_4-P_0}{P_0}$		$-600^{C}\times\frac{P_4-P_0}{P_0}+500^{C}\times\frac{P_4-P_1}{P_1}$	
	$-4,500\times\frac{P_4-P_2}{P_2}$		$+600^{B}\times\frac{P_4-P_1}{P_1}$	
	$+(600^{C}+600^{B}+800^{L})\times\frac{P_4-P_1}{P_1}$		$+700^{E}\times\frac{P_4-P_3}{P_3}$	94.72

	$+2,360\times\frac{P_4-P_2}{P_2}$			
	$+700^{E}\times\frac{P_4-P_3}{P_3}$	−108.3		
Less: Taxes		−320		−320
Dividends		−120		−120
	(Retained income)	794.72	(Retained income)	794.72

(3) Type (II-a) and Schmidt's approach to inflationary accounting

The assets revaluation practice in which such long-term nonmonetary assets as land, plant, eqiuipments, or other fixed assets, are restated on the current replacemnt cost basis, on condition that the market-value change increment, accompanied by the restatement, is eliminated from income and entered upon the capital stock account or a specific value-change adjustment account for the maintenance of capital or neutralization, should be scrutinized as one of the approaches which belong to the type (II-a).

In this case, the realized and unrealized market-value change increments, ΔW and $\Delta W'$ are entirely or partially eliminated from income.

Firstly, attention must be directed to the fact that the segments regarded as the money-value change increment of nonmonetary assets, ΔG_w and $\Delta G_w'$, should be taken up in relation to the money-value change increment of such equities item as capital stock, liabilities, or surplus, so that there may appear no overlap of the entering of increments, common in the portion of capital to which to accrue and the period of time during which to occur, upon the capital stock or a specific value-change adjustment account for the maintenance of capital or neutralization.

Secondly, it is necessary to consider the problem of what the realized and unrealized market-value change increments, ΔW and $\Delta W'$, or their segments, entered upon the capital stock account or the foregoing specific value-change adjustment account, even if partially, would represent in the aggregate. In case the market-value change increment of nonmonetary assets is eliminated permanently from income, the scope of nonmonetary assets, increment of which is eliminated from income, would be limited to the extent of those which must be maintained as "real capital." It is necessary to consider the problem of whether the market-value change increment of nonmonetary assets is entered upon the foregoing capital stock account and so on, enough to maintain "real capital," or not.

It goes without saying that the revaluation practice of N. V. Philips Gloeilampenfabliken of the Netherlands, quoted by Maurice Moonitz,* belongs to the type (II-a), now that the market-value change increment of nonmonetary assets is eliminated permanently from income and the money-value change loss resulting from the holding of net monetary assets is recognized.

* Maurice Moonitz, Changing prices and financial reporting. p.p. 35–36.

One of the most systematized accounting theories which belong to the type (II-a), would be Fritz Schmidt's "Die organische Tageswertbilanz," although a considerably long period of time has elapsed since its publication.

In the case of Schmidt's approach, the current-value adjusted balance sheet is represented by the following equation, assuming that there is no speculative property, market-value change increment of which is treated as profit or loss, and that the purchasing power of capital stock and earnings which take the form of monetary assets is maintained:

(Schmidt's balance sheet)

$G + W + \Delta W$

Monetary assets account; Nonmonetary assets (on cost basis); Unrealized market-value change increment of nonmonetary assets

Nonmonetary assets account

$= K^C + K^L + K^E - \Delta W' - (\Delta K^{C,E} - \Delta G_w{}^{C,E} - \Delta G_w{}'^{C,E})$

Capital stock account; Liabilities account; Surplus account (on cost basis); Realized market-value change increment of nonmonetary assets; Money-value change increments of capital stock & earnings which take the form of monetary assets

Surplus account

$+(\Delta W + \Delta W') + (\Delta K^{C,E} - \Delta G_w{}^{C,E} - \Delta G_w{}'^{C,E})$

Realized and unrealized market-value change increments of nonmonetary assets; Money-value change increments of Capital stock & earnings which take the form of monetary assets

Value-change adjustment account (Capital adjustment account)

The market-value change increments of nonmonetary assets, ΔW and $\Delta W'$, are, under the Schmidt's method, entered upon the value-change adjustment account (Konto Vermögenswertänderung oder Wertberichtigung) and eliminated permanently from income, unless nonmonetary assets are regarded as those which are acquired for the purpose of speculation, that is, "speculative assets" (Spekulationsgüter).

It should be noted, under this method, that the money-value change loss, occurring in the portion of capital regarded as capital stock and earnings, $(\Delta K^C - \Delta G_w{}^C - \Delta G_w{}'^C)$ and $(\Delta K^E - \Delta G_w{}^E - \Delta G_w{}'^E)$, would be subtracted, as "costs incurred to maintain the money-value of net monetary assets (Werterhaltungskosten)," from income. It is questionable, however, to eliminate entirely the latter money-value change increment in which the debtor's gain might be included, from income.

In case the above money-value change loss is subtracted from income, the

purchasing power of capital stock or earnings is maintained, insofar as the market-value change increment of nonmonetary assets is not smaller, in the monetary size, than the money-value change increment thereof.

For instance, if $\Delta W^C + \Delta W'^C \geqq \Delta G_w{}^C + \Delta G_w{}'^C$

we obtain

$$\Delta W^C+\Delta W'^C+(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)\geqq\Delta G_w{}^C+\Delta G_w{}'^C+(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)$$

$$\underbrace{\Delta W^C+\Delta W'^C+(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)}_{\text{Adjustment account}}\geqq\underbrace{\Delta K^C}_{\substack{\text{Money-value change increment}\\ \text{of capital stock}}}$$

It is necessary, in this case, to consider the relationship of the market-value change increment of nonmonetary assets, to the money-value change loss of monetary assets, although the problem of how to measure "costs incurred to maintain the money-value of net monetary assets" is not clearly solved.

The realized difference between the market-value change increments of speculative assets in which such component of capital as capital stock or earnings is invested, and their money-value change increments, $(\Delta W'^C - \Delta G_w{}'^C)$ and $(\Delta W'^E - \Delta G_w{}'^E)$, is entered, as speculative profit or loss, upon the surplus account.

In the case of speculative assets in which such component of capital as liabilities is invested, their market-value change increment, $\Delta W'^L$ is entered, as speculative profit or loss, upon the surplus account, with the result that its money-value change increment, $\Delta W'^L$ is not excluded from income.

If nonmonetary assets are regarded as other assets than speculative assets, in the following balance sheet, the increments entered upon the value change adjustment account, totaling $1,896,940, would be eliminated permanently from income, with the result that the realized market-value change increments, amounting to $540,000, is subtracted, as the cost of nonmonetary assets sold or exhausted, from income.

Assuming, in this example, that nonmonetary assets are regarded as speculative assets, the realized money-value change increment, occurring in the portion of capital which is attributed to capital stock, amounting to $2,990, is eliminated from income, while the other increments than the above, are treated as speculative profit, as follows:

(Unit: $1,000)

Increment, eliminated from income.

$$100^C\times\frac{P_2-P_1}{P_1}=100\times\frac{82.388-80}{80}=2.99$$

Increment, treated as speculative profit.

$$100^C\times\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)=100\times\left(\frac{80-50}{50}-\frac{82.388-80}{80}\right)=57.01$$

$$800^L\times\frac{N_2-N_1}{N_1}=800\times\frac{80-50}{50}=480.$$

(Total increments) 540.

The problematical point lies in the fact that it is necessary, in the case of Schmidt's approach, to acquire the substitute for nonmonetary assets sold or exhausted just after their sales or exhaustion, if we intend to maintain the nonmonetary assets in terms of "real capital."

The substitute for nonmonetary assets sold, amounting to $900,000, is not acquired, in this example, just after the sales, and as a result, the shortage of market-value change increments which would occur in the substitute for nonmonetary assets sold, during the period from point of time t_2 to point of time t_4, is shown in the value change adjustment account.

This fact will be explained in the case of the modified type (II-a).

Attention must be directed, here, that the following money-value change increment of monetary assets entered upon the value change adjustment account, corresponds to the segment of the foregoing market-value change increments which are regarded as the shortage:

(Unit: $1,000)

$$100^{C} \times \frac{P_4 - P_2}{P_1} = 100 \times \frac{98 - 82.388}{80} = 19.52$$

In case the foregoing shortage of market-value change increments is filled up in the value change adjustment account, under the Schmidt's method, there would occur the overlap of money-value change increments identical with each other.

According to British current cost accounting, recommended by the Inflation Accounting Committee (Inflation Accounting, report of the Inflation Accounting Committee, 1975), the balance sheet equation would be shown as follows, assuming that the balance sheet is prepared without regard to income tax deductions and that the closing inventories are acquired at the year-end:

(British current cost accounting's balance sheet, by Report of the Inflation Accounting Committee)

G	+W	+W	+⊿W
Cash & debtors account : Monetary assets accounts	Stock account (Inventories account)	Fixed assets (on cost basis)	Unrealized market-value change increment of fixed assets
		Fixed assets accounts	
	Nonmonetary assets account		

= K^{C}	$+K^{L}$	$+K^{E}$	$-⊿W'$	$-⊿W'$
Share capital account	Debenture, bank loan, & creditors account	Free reserves (on cost basis)	Realized market-value change increment of inventories	Realized Market-value change increment of fixed assets (depreciation etc.)
			Free reserves (Surplus account)	

$+(\Delta W+\Delta W')$	$+\Delta W'$
Realized and unrealized market-value change increments of fixed assets	Realized market-value change increment of inventories
Fixed asset revaluation reserve account	Stock adjustment reserve account
Capital adjustment account	

The above fixed asset accounting belongs to the type (II-a), while the treatment of inventories is based upon the modified type (II-a), which will be taken up in the latter part of this analysis.

It should be noted, here, that the market-value change increments of nonmonetary assets which are entered upon such capital adjustment account as fixed asset revaluation reserve or stock adjustment reserve are included in taxable income, although the "deferred tax" system may be taken into consideration.

In case the type (II-a) is applied to the inflationary conditions under which the consumer price index rises slowly or constantly, it might be difficult to eliminate the money-value change increment or market-value change increment of nonmonetary assets from taxable income. The "deferred tax" system where taxes on revaluation profit are held over to be paid at point of time of depreciation or retirement, with being accompanied by the eliminating of the cost of depreciable fixed assets from taxable income when reinvested, would be a practical way to solve the problem of the maintenance of real capital.

Type (II-a)

Balance sheet as at point of time t_4 (Unit: $1,000)

Monetary assets	100		Capital stock	600
			Bonds payable	600
(Total monetary assets)		100	Adjustment account	
Monetary assets			1. Market-value change increment less money-value change increment	
Original cost	500			
$500^C\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$			$500^C\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$	417.5
$+500^C\times\frac{P_4-P_1}{P_1}$	530		$600^B\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$	501
Original cost	600			
$600^B\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$			$700^E\times\left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$	13.78
$+600^B\times\frac{P_4-P_1}{P_1}$	636		$800^L\times\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$	456.12
Original cost	700		$100^C\times\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)$	57.01

$700^{E}\times\left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$		2. Money-value change increment	
		a. Holding loss	
$+700^{E}\times\frac{P_4-P_3}{P_3}$	21	$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41
(Total nonmonetary assets)	2,987	$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95
(Total assets)	3,087	$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15
		b. Nonmonetary assets increment	
		$100^{C}\times\frac{P_2-P_1}{P_1}$	2.99
		$500^{C}\times\frac{P_4-P_1}{P_1}$	112.5
		$700^{E}\times\frac{P_4-P_3}{P_3}$	7.22
		$600^{B}\times\frac{P_4-P_1}{P_1}+800^{L}\times\frac{P_2-P_1}{P_1}$	158.88
		c. Denominator adjustment	
		$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1
		$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23
		$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82
		$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28
			1,896.94
		Surplus, on conventional basis	700
		Less:	
		1. Realized increments	
		$100^{C}\times\frac{N_2-N_1}{N_1}$ 60	
		$800^{L}\times\frac{N_2-N_1}{N_1}$ 480	−540
		2. Money-value change loss	
		a. Holding loss	
		$600^{C}\times\frac{P_1-P_0}{P_0}$ 20.41	
		$100^{C}\times\frac{P_4-P_2}{P_2}$ 18.95	
		$700^{E}\times\frac{P_3-P_2}{P_2}$ 124.15	
		b. Denominator adjustment	
		$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$ 0.1	
		$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$ 1.23	
		$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$ 3.82	

$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94	−9.94
(Total equities)			3,087

Type (II-a)

Income statement (Unit: $1,000)

(during the period from point of time t_0, to point of time t_4)

Revenue		
Income from the sales of nonmonetary assets		4,500
Expense		
Costs of nonmonetary assets, sold or used	900	
Wage & miscellaneous	2,360	
Interest	100	3,360
(Income, on conventional basis)		1,140
Less:		
1. Market-value change increment of nonmonetary assets sold or used ($\Delta W'^{C,L}$)		
$100^{C}\times\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+100^{C}\times\frac{P_2-P_1}{P_1}$	60	
$800^{L}\times\left(\frac{N_2-N_1}{N_1}-\frac{P_2-P_1}{P_1}\right)+800^{L}\times\frac{P_2-P_1}{P_1}$	480	−540
2. Money-value change loss ($\Delta K^{C,E}-\Delta G_w{}^{C,E}-\Delta G_w{}'^{C,E}$)		
a. Holding loss		
$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41	
$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95	
$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15	
b. Denominator adjustment		
$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1	
$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23	
$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82	
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94
(Income for the year)		430.06
Taxes	320	
Dividends	120	−440
(Deferred deficit)		−9.94

(4) Type (II-b) and Edwards and Bells' price-level adjusted financial statements

It might be properly mentioned that there is comparatively sufficient room to cope with the changing economic situation, in such a stage of inflation as a decline in the value of money shows a slow and constant movement.

In this case, it might be possible to get off if only the money-value of

capital stock issued, is maintained on the current money-value level.

In case there is sufficient room to cope with the changing money-value situation, it would be useful for decision-making to represent the influence of a decline in the value of money on the financial situation of an enterprise, not only in the balance sheet, but also in the income statement.

The type (II-b) and the type (II-c) are taken up as the inflationary practices that are adaptable to the above economic situation.

As one of the accounting practices which belong to the type (II-b), let us take up Edwards and Bells' approach which is demonstrated in the measurement of "real realized profit" in the income statement, and moreover, which is demonstrated in the balance sheet restated in terms of the year-end general price level.

The Edwards & Bells' price-level adjusted balance sheet (Edgar O. Edwards & Philip W. Bell, The Theory and measurement of business income, 1961, p. 248.) would be represented by the following equation:

(Edwards & Bells' price-level adjusted balance sheet)

$$G \quad +W \quad +\Delta W$$

Cash & receivables : Monetary assets account

Nonmonetary assets (on cost basis)

Unrealized market-value change increment of nonmonetary assets

: Nonmonetary assets account

$$= K^C \quad +\Delta K^C \quad +K^B \quad +\Delta K_s^B \quad +K^L$$

Capital stock (on cost basis)

Money-value change increment of capital stock

Bonds payable (on cost basis)

Unrealized market-value change increment of bonds payable

Liabilities (excl. bonds payable) account

: Capital stock account

: Bonds payable account

$$+(\Delta W - \Delta G_w) \quad +\Delta K_g^B \quad -\Delta K_s^B$$

Unrealized difference between market-value change increment and money-value change increment

Unrealized money-value change increment of bonds payable

Uurealized market-value change increment of bonds payable

: Unrealized surplus account

$$+K^E \quad +\Delta G_w \quad -\Delta K^C \quad -\Delta K_g^B$$

Realized surplus (on cost basis)

Unrealized money-value change increment of nonmonetary assets

Money-value change increment of capital stock

Money-value change increment of bonds payable

: Realized surplus account

K^B .....Bonds payable (on cost basis)

ΔK_g^B ...Money-value change increment of bonds payable

ΔK_s^B ...Market-value change increment of bonds payable
(In the Edwards & Bells' example, this increment is expressed as a negative figure, for the reason that a decline in the market-value is shown.)

In the Edwards and Bells' price-level adjusted balance sheet, fictional elements which are eliminated from realized profit or realizable profit in the income statement, are restated in terms of the year-end money-value together with the realized surplus and the unrealized surplus, and as a result, the balanc sheet which is essentially the same as the following balance sheet (II-b) would be represented.

The unrealized surplus consists of the difference between the market-value change increment of existing nonmonetary assets and their money-value change increment, $(\Delta W - \Delta G_w)$, and the money value change increment and market-value change increment of bonds payable, $\Delta K_g{}^B$ and $\Delta K_s{}^B$.

For, the market-value change increment of bonds payable which is conceived to depend upon the change in the market interest rate, if any, is expressed as a negative figure in the bonds payable account and as a positive figure in the unrealized surplus account, in case a decline in the market-value is shown.

It is treated as "realizable cost savings," in the unrealized surplus account, together with the money-value change increment of bonds payable, $\Delta K_g{}^B$.

In the case of the type (II-b), the money-value change increments of liabilities other than bonds payable and earnings, ΔK^L and ΔK^E, are entered upon the credit side of the realized surplus, while the money-value change increments of capital stock and bonds payable, ΔK^C and ΔK^B, are entered upon the capital stock account and the unrealized surplus account, respectively.

In the realized surplus account, the realized money-value change increments of nonmonetary assets and the money-value change loss are offset by the money-value change increments of liabilities other than bonds payable and earnings, with the result that the year-end closing balance of money-value change increments is found out by the subtracting the money-value change increments of capital stock and bonds payable from the total unrealized money-value change increments of nonmonetary assets, as follows:

Money-value change increments in the realized surplus account

(Sources of assets)	Assets side increments		Equities side increments	Total money-value change increments (1)+(2)+(3) (4)
	Realized money-value change increments (1)	Money-value change loss (2)	(3)	
Liabilities other than bonds payable	$-\Delta G_w{}'^L$	$-(\Delta K^L-\Delta G_w{}^L-\Delta G_w{}'^L)$	ΔK^L	$\Delta G_w{}^L$
Bonds payable	$-\Delta G_w{}'^B$	$-(\Delta K^B-\Delta G_w{}^B-\Delta G_w{}'^B)$		$-\Delta K^B+\Delta G_w{}^B$
Earnings	$-\Delta G_w{}'^E$	$-(\Delta K^E-\Delta G_w{}^E-\Delta G_w{}'^E)$	ΔK^E	$\Delta G_w{}^E$
Capital stock	$-\Delta G_w{}'^C$	$-(\Delta K^C-\Delta G_w{}^C-\Delta G_w{}'^C)$		$-\Delta K^C+\Delta G_w{}^C$

In this example,

$\Delta G_w{}^L=0$, $\Delta G_w{}'^B=0$, $\Delta K^B-\Delta G_w{}^B-\Delta G_w{}'^B=0$, $\Delta K^B=\Delta G_w{}^B$, $\Delta G_w{}'^E=0$

In the case of type (II-b), the realized money-value change increments of nonmonetary assets sold or exhausted, $\Delta G_w'$, totaling \$26,870, are eliminated from income. However, the realized money-value increment of nonmonetary assets, sources of which are regarded as liabilities, $\Delta G_w'^L$, amounting to \$23,880, is offset by the money-value change increment of liabilities, ΔK^L, which is assumed to be equal to $\Delta G_w'^L$.

In this example, the realized money-value change increment, $\Delta G_w'^E$, is regarded as zero. The money-value change loss, occurring in the portion of capital regarded as earnings, $(\Delta K^E - \Delta G_w^E - \Delta G_w'^E)$, is offset by the segment of the money-value change increment of the realized surplus, ΔK^E.

Then, the following increments are eventually entered upon the realized surplus:

(Unit: \$1,000)

$\Delta W'^L + \Delta W'^C$	$-\Delta K^C + \Delta G_w^C$	$+\Delta G_w^E$
480 60	−160 +112.5	+7.22
540	−40.28	
(Included in the surplus, on conventional basis)	(Increments, entered additionally upon the surplus)	

In this case,

$$\Delta W'^L = 800^L \times \frac{N_2 - N_1}{N_1} = 480$$

$$\Delta W'^C = 100^C \times \frac{N_2 - N_1}{N_1} = 60$$

$$\Delta K^C = 600^C \times \frac{P_4 - P_0}{P_0} = 160$$

$$\Delta G_w^C = 500^C \times \frac{P_4 - P_1}{P_1} = 112.5$$

$$\Delta G_w^E = 700^E \times \frac{P_4 - P_3}{P_3} = 7.22$$

The above total increments entered additionally upon the debit side of the surplus account, amounting to \$40,280, represent results that are yielded by the entering of the increments upon the realized surplus in the following balance sheet. The sum of the increments is found out by subtracting the realized money-value change increments of nonmonetary assets, amounting to \$26,870, and the money-value change loss, amounting to \$169,940, from the money-value change increments of liabilities and the realized surplus, totaling \$156,530.

One of the problematical point lies in the fact that the money-value change increment of existing nonmonetary assets, sources of which are regarded as liabilities other than bonds payable, ΔG_w^L, if any, is entered upon the credit side of the realized surplus, unless it is included in the unrealized surplus, as is shown in the case of bonds payable, insofar as only the money-value change

increment of capital stock is eliminated permanently from income. However, the money-value change increment of existing nonmonetary assets, ΔG_w^L, would be the segment of unrealized profit. Likewise, the money-value change increment of nonmonetary assets, sources of which are regarded as earnings, ΔG_w^E, amounting to \$7,220, in this example, would be the segment of unrealized profit. Edwards and Bells' approach yields results that are essentially the same as those yielded by the entering of such unrealized profit as the above increment, ΔG_w^E, upon the credit side of the realized surplus. It is necessary, here, to modify the definition of the "realized" surplus.

It would be difficult in practical accounting to pick up the above money-value change increments of nonmonetary assets, occurring in the portion of capital regarded as liabilities or earnings, ΔG_w^L or ΔG_w^E. If such approach is applied to this example, the following increment, ΔG_w^E, amounting to \$7,220, would be transferred from the surplus to the unrealized surplus:

(Unit: \$1,000)

$$700^E \times \frac{P_4 - P_3}{P_3} = 7.22$$

Now, let us take up the income statement. In the income statement, the realized market-value change increments of nonmonetary assets sold or exhausted, $\Delta W'^C$ and $\Delta W'^L$, totaling \$540,000, are subtracted from revenue to find out the operating profit, while the remainder left after the deduction of the money-value change increments of nonmonetary assets sold or exhausted, $\Delta G_w'^C$ and $\Delta G_w'^L$ totaling \$26,870, and the money-value change loss, ($\Delta K^{C,E} - \Delta G_w^{C,E} - \Delta G_w'^{C,E}$), totaling \$169,940, from the above market-value change increments, is represented as real realized holding gains, amounting to \$343,190.

The closing balance of the realized surplus, amounting to \$659,720, is found out by adding the money-value change increment of earnings, ΔK^E, amounting to \$132,650, and the money-value change increment of liabilities, ΔK^L, being equal, here, to $\Delta G_w'^L$, regarded as \$23,880, to the retained income of the income statement, amounting to \$503,190.

In the case of the type (II-b), the realized money-value change increment of nonmonetary assets is represented in terms of the general price level at point of time when such transaction as sales or depreciation takes place, while the unrealized money-value change increment of nonmonetary assets is represented in terms of the year-end general price level, in view of the fact that the money-value change increment which is eliminated from the market-value change increment of nonmonetary assets, should be calculated using the general price index which is common, in a point of time at which to stand, with their market-value index (that is, the individual price index).

In the case of Edwards and Bells' approach, the average-of-year money-value is applied to the restating of not only the realized money-value change increment of nonmonetary assets, but also the unrealized money-value change increment of nonmonetary assets and the money-value change loss of monetary assets.

This is the reason why the foregoing circumstances concerning the money-value change increments which would occur in the portion of capital attributed to liabilities or earnings are not clearly demonstrated.

Table (1)

Type (II-b) (Unit: $1,000)

Balance sheet as at point of time t_4

Monetary assets	100^C		Bonds payable			600
(Total monetary assets)		100	Capital stock, on conventional basis		600	
Nonmonetary assets			a. Monetary assets increments			
Original cost	500		$600^C \times \frac{P_1-P_0}{P_0}$	20.41		
$500^C \times \left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$			$100^C \times \frac{P_4-P_2}{P_2}$	18.95		
$+500^C \times \frac{P_4-P_1}{P_1}$	530					
Original cost	600		b. Nonmonetary assets increments			
$600^B \times \left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$			$100^C \times \frac{P_2-P_1}{P_1}$	2.99		
$+600^B \times \frac{P_4-P_1}{P_1}$	636		$500^C \times \frac{P_4-P_1}{P_1}$	112.5		
			c. Denominator adjustment			
Original cost	700		$100^C \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1		
$700^E \times \left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$			$100^C \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23		
$+700^E \times \frac{P_4-P_3}{P_3}$	21		$500^C \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82	160	760
(Total nonmonetary assets)		2,987	Unrealized surplus			
(Total assets)		3,087	$500^C \times \left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$	417.5		
			$600^B \times \left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)+600^B \times \frac{P_4-P_1}{P_1}$	636		
			$700^E \times \left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$	13.78		1,067.28

Realized surplus, on conventional basis				700
1. Equities side money-value change increments				
$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15			
$700^{E}\times\frac{P_4-P_3}{P_3}$	7.22			
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28			
$800^{L}\times\frac{P_2-P_1}{P_1}$	23.88	156.53		
2. Realized money-value-change increments of nonmonetary assets				
$100^{C}\times\frac{P_2-P_1}{P_1}$	2.99			
$800^{L}\times\frac{P_2-P_1}{P_1}$	23.88	−26.87		
3. Money-value change loss				
a. Holding loss				
$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41			
$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95			
$700^{E}\times\frac{P_2-P_2}{P_2}$	124.15			
b. Denominator adjustment				
$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1			
$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23			
$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82			
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94	−40.28	659.72
				3,087

Table (2)

Type (II-b) (Unit: $1,000)

Income statement

(during the period from point or time t_0, to point of time t_4)

Revenue			
Income from the sales of nonmonetary assets			4,500
Expense			
Cost of nonmonetary assets, sold or used, on coventional basis	900		
Increment ($\Delta W'^{C,L}$)			
$100^{C}\times\frac{N_2-N_1}{N_1}$	60		
$800^{L}\times\frac{N_2-N_1}{N_1}$	480	540	1,440

Wages & miscellaneous		2, 360	
Interest		100	3, 900
Current operating income (Current operating profit)			600
Real realized increments			
1. Realized market-value change increments of nonmonetary assets ($\Delta W'^{C,L}$)			
$100^{C}\times\frac{N_2-N_1}{N_1}$	60		
$800^{L}\times\frac{N_2-N_1}{N_1}$	480	540	
2. Realized money-value change increments of nonmonetary assets ($\Delta Gw'^{C,L}$)			
$100^{C}\times\frac{P_2-P_1}{P_1}$	2. 99		
$800^{L}\times\frac{P_2-P_1}{P_1}$	23. 88	−26. 87	
3. Money-value change loss ($\Delta K^{C,E}-\Delta G_w{}^{C,E}-\Delta G_w{}'^{C,E}$)			
a. Holding loss			
$600^{C}\times\frac{P_1-P_0}{P_0}$	20. 41		
$100^{C}\times\frac{P_4-P_2}{P_2}$	18. 95		
$700^{E}\times\frac{P_4-P_2}{P_2}$	124. 15		
b. Denominator adjustment			
$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0. 1		
$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1. 23		
$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3. 28		
$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1. 28	−169. 94	
Real realized increments			343. 19
Income for the year			943. 19
Taxes		320	
Dividends		120	−440
Retained income			503. 19

Table (3)

Type (II-b)

Relationship of the income statement to the balance sheet (Unit: $1,000)

Retained income	503. 19
Plus:	
Entering of money-value change increment for liabilities upon the surplus account (ΔK^{L}*)	
$800^{L}\times\frac{P_2-P_1}{P_1}$	23. 88

Accretion of money-value change increments
for earnings (ΔK^E)

$700^E \times \frac{P_3-P_2}{P_2}$	124.15	
$700^E \times \frac{P_4-P_3}{P_2}$	8.5	132.65
(Net increase in retained income)		659.72

* In this case, the portion of capital, represented by liabilities, amounting to $800,000, is assumed to flow out from an enterprise as a result of its refundment. Therefore,
$\Delta K^L = \Delta G_w{}'^L$

(5) Type (II-c) and Chambers's financial statements

In the case of the balance sheet (II-c), the difference between the market-value change increments of nonmonetary assets and their money-value change increments, whether realized or unrealized, are included in the surplus account. Namely, the increments, (ΔW-ΔG_w) and ($\Delta W'$-$\Delta G_w'$), are entered upon the surplus account.

The money-value change increments of liabilities, including bonds payable, and earnings, ΔK^L, ΔK^B, and ΔK^E, are entered upon the credit side of the surplus account, while the money-value change increment of capital stock, ΔK^C is entered upon the capital stock account.

In the surplus account, the money-value change increments deducted from the market-value change increments of nonmonetary assets and the money-value change loss are offset by the money-value change increments of such equities side items as bonds payable, other liabilities, and earnings, as follows:

Money-value change increments in the surplus account

(Sources of assets)	Assets side increments		Equities side increments	Total money-value change increments
	Money-value change increments deducted from the market-value change increments of nonmonetary assets (1)	Money-value change loss (2)	(3)	(1)+(2)+(3) (4)
Liabilities other than bonds payable	$-\Delta G_w{}^L - \Delta G_w{}'^L$	$-(\Delta K^L - \Delta G_w{}^L - \Delta G_w{}'^L)$	ΔK^L	0
Bonds payable	$-\Delta G_w{}^B - \Delta G_w{}'^B$	$-(\Delta K^B - \Delta G_w{}^B - \Delta G_w{}'^B)$	ΔK^B	0
Earnings	$-\Delta G_w{}^E - \Delta G_w{}'^E$	$-(\Delta K^E - \Delta G_w{}^E - \Delta G_w{}'^E)$	ΔK^E	0
Capital stock	$-\Delta G_w{}^C - \Delta G_w{}'^C$	$-(\Delta K^C - \Delta G_w{}^C - \Delta G_w{}'^C)$		$-\Delta K^C$

Such being the case, the closing balance of the increments entered upon the surplus account, is represented by the following items:

$$\underbrace{-\Delta K^C+\Delta W^C+\Delta W^L+\Delta W^B+\Delta W^E}_{\text{Increments entered additionally upon the surplus account}}+\underbrace{\Delta W'^L+\Delta W'^B+\Delta W'^E+\Delta W'^C}_{\text{Realized market-value increments included in the realized surplus, on conventional basis}}$$

In this example, the increments entered additionally upon the surplus account are shown as follows:

(Unit: $1,000)

$-\Delta K^C$	$+\Delta W^C$	$+\Delta W^B+\Delta W^E$	$=1,027$
-160	$+530$	$+636$	$+21$

In this case,

$$\Delta K^C = 600^C \times \frac{P_4-P_0}{P_0} = 160$$

$$\Delta W^C = 500^C \times \frac{N_4-N_1}{N_1} = 530$$

$$\Delta W^B = 600^B \times \frac{N_4-N_1}{N_1} = 636$$

$$\Delta W^E = 700^E \times \frac{N_4-N_3}{N_3} = 21$$

The above total increments, amounting to $1,027,000, are represented in the following balance sheet (Type II-c), as follows:

(Unit: $1,000)

Accretion of the money-value change increments of bonds payable, other liabilities, and earnings	291.53
Excess of market-value change increments over money-value change increments in existing nonmonetary assets	932.28
Less:	
Deduction of realized money-value change increments	−26.87
Deduction of loss on change in money-value	−169.94
(Total increments)	1,027

Meanwhile, the difference between the market-value change increments of nonmonetary assets and their money-value change increments, whether realized or unrealized, is treated as profit or loss, without regard to the source of capital to which nonmonetary assets are attributed, in the income statement.

The realized market-value change increments of nonmonetary assets, $\Delta W'$, consist of the following items:

(Unit: $1,000)

$$\Delta W'^C = 100^C \times \frac{N_2-N_1}{N_1} = 60$$

$$\Delta W'^L = 800^L \times \frac{N_2-N_1}{N_1} = 480$$

$$540$$

In the following income statement (II-c), the above market-value change increments, totaling $540,000, are included in the income which would be obtained if conventional accounting is applied, amounting to $1,140,000, and as a result, the realized money-value change increments of nonmonetary assets, $\Delta Gw'^{C}$ and $\Delta G_w'^{L}$, totaling $26,870, are subtracted from the foregoing income, deduced on conventional basis.

The unrealized difference between the market-value change increments of nonmonetary assets and their money-value change increments, $(\Delta W^{C}-\Delta G_w^{C})$, $(\Delta W^{E}-\Delta G_w^{E})$, and $(\Delta W^{B}-\Delta G_w^{B})$, totaling $932,280, would be added to the income for the year, while the money-value change loss, $(\Delta K^{C}-\Delta G_w^{C}-\Delta G_w'^{C})$ and $(\Delta K^{E}-\Delta G_w^{E}-G_w'^{E})$, totaling $169,940, is subtracted from income.

The retained income, left after the deduction of taxes and dividends, totaling $440,000, would be regarded as $1,435,470.

It should be noted, in this connection, that the money-value change increments of nonmonetary assets, sources of which are regarded as liabilities, ΔG_w^{B} and $\Delta G_w'^{L}$, totaling $158,880, are offset by the money-value change increments of bonds payable and other liabilities, ΔK^{B} and ΔK^{L}, and that the money-value change increment of nonmonetary assets, sources of which are regarded as earnings, ΔG_w^{E}, and the money-value change loss, occurring in the portion of capital regarded as earnings, $(\Delta K^{E}-\Delta G_w^{E})$, totaling $132,650, are offset by the money-value change increment of earnings, ΔK^{E}, as is shown in the table (3) of the type (II-c).

The closing balance of the surplus, amounting to $1,727,000, is found out by adding the above money-value change increments of liabilities and earnings, ΔK^{L} and ΔK^{E}, regarded as $158,880 and $132,650, respectively, to the retained income, amounting to $1,435,470, as referred to above.

If the offsetting of the money-value change increment of nonmonetary assets and the money-value change loss, by the money-value change increments of such equities item as liabilities or earnings, is disclosed in the income statement, the financial statements would be more informative for decision-making, in view of the fact that debtors' gains which occur in nonmonetary assets, the money-value change loss which is shifted on creditors' burden, and the maintenance of the purchasing power of capital stock, are demonstrated clearly.

Now, let us touch on R. J. Chambers's approach to inflationary accounting.

The resale-value adjusted balance sheet, recommended by R. J. Chambers (R. J. Chambers, Accounting, Evaluation and Economic Behaviour, 1966, pp. 233-243.), is represented by the following equation:

(Chambers's resale-value adjusted balance sheet)

G	+W	$+\Delta W$
:	:	:
Monetary assets account	Nonmonetary assets (on cost basis)	Unrealized market-value change increment of nonmonetary assets

: Nonmonetary assets account

$= K^C$	$+\Delta K^C$	$+\Delta K^L$
Capital stock (on cost basis)	Money-value change increment of capital stock	Liabilities account

Capital stock account

$+K^E$	$+\Delta W$	$-\Delta K^C$
Realized surplus (on cost basis)	Unrealized market-value change increment of nonmonetary assets	Money-value change increment of capital stock

Surplus account

The accounting practice which is demonstrated in his theory, might be properly mentioned to belong to the type (II-c). For, the difference between the market-value change increments of nonmonetary assets and their money-value change increments are treated as profit or loss at point of time when the increments accrue to the nonmonetary assets, and only the money-value change increment of capital stock is eventually entered upon the capital stock account, although the money-value change increment of the opening balance of net worth may be eliminated from income and entered temporarily upon the capital maintenance adjustment account.

As the opening balance of net worth is regarded, in this example, as capital stock issued, amounting to $600,000, the money-value change increments entered upon the capital maintenance adjustment account would be equal to the money-value change increment of capital stock, ΔK^C, with the result that the closing balance of the surplus is just the same as that which is represented in the balance sheet (Type II-c).

It should be noted, however, that the money-value change increments entered upon the capital maintenance adjustment account would not be always equal to the money-value change increment of capital stock, insofar as the money-value change increments of nonmonetary assets, deducted from their market-value change increments (that is, revaluation profits or losses in conventional accounting), are entered upon the capital maintenance adjustment account.

Especially in the case of Chambers's approach, the capital maintenance adjustment account is represented by the money-value change increments of capital stock and retained income (earnings) occurring during the period from the year-beginning to the year-end, which are to be entered upon the capital stock account and the surplus account at the year-end, respectively, on one hand, while it is used, in the income statement, to eliminate the money-value change increments of nonmonetary assets from their market-value change increments (holding gains or losses), and moreover, to eliminate the money-value change loss of monetary assets from income, on the other hand.

To make those which are entered upon the capital maintenance adjustment account, equal to the money-value change increment of capital stock eventually,

it is necessary to offset the money-value change increments of nonmonetary assets, deducted from their market-value change increments (holding gains or losses), by the money-value change increment of retained income (earnings).

If the money-value change increment which would occur in the year-beginning retained income during the period from the year-beginning to the year-end, is entered upon the credit side of the surplus, the market-value change increments of the year-beginning nonmonetary assets (holding gains or losses at the year-beginning) should be also calculated on the year-end market price level, so that the money-value change increments which would occur in the year-beginning nonmonetary assets during the period from the year-beginning to the year-end, may be entered upon the capital maintenance adjustment account.

On the above condition, the cost of the year-beginning nonmonetary assets, even if sold or exhausted within the year, should be restated on the year-end market price level, so that their money-value change increments which are entered upon the capital maintenance adjustment account, may be offset by the money-value change increment of the year-beginning retained income (earnings).

This fact means that the market-value change increments which are assumed to occur in nonmonetary assets sold or exhausted after the date of the sales or exhaustion, would be treated as holding gains or losses.

There is another problem of whether the cost of nonmonetary assets acquired during the year is restated on the year-end price level or not. In view of the fact that the cost of the year-beginning nonmonetary assets sold or exhausted (represented usually by the cost of goods or used) is restated on the year-end price level, the cost of nonmonetary assets which are acquired later than the above nonmonetary assets, should be also restated on the year-end market price level.

Attention must be directed, in this case, to the fact that the money-value change increments resulting from the restating of nonmonetary assets acquired during the period, on the year-end market price level, which are eliminated from their market-value change increments (holding gains or losses) and entered upon the capital maintenance adjustment account, would not be offset by the money-value change increment of the year-beginning retained income (earnings), now that the above market-value change increments are not included in the year-beginning retained income.

It would be difficult to find out the reason why only the above money-value change increments of nonmonetary assets are entered upon the debit side of the surplus.

There might be no solution but to assume that the money-value change increments of nonmonetary assets acquired during the year, would not occur during the period from the date of acquisition to the year-end.

Table (1)

Type (II-c)

Balance sheet as at point of time t_4 (Unit: $1,000)

Monetary assets	100	Bonds payable				600
(Total monetary assets)	100	Capital stock, or conventional basis			600	
		a. Monetary assets increments				
		$600^C \times \frac{P_1-P_0}{P_0}$	20.41			
Nonmonetary assets		$100^C \times \frac{P_4-P_2}{P_2}$	18.95			
Original cost	500	b. Nonmonetary assets increments				
$500^C \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$		$100^C \times \frac{P_2-P_1}{P_1}$	2.99			
$+500^C \times \frac{P_4-P_1}{P_1}$	530	$500^C \times \frac{P_4-P_1}{P_1}$	112.5			
Original cost	600	c. Denominator adjustment				
$600^B \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$		$100^C \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1			
$+600^B \times \frac{P_4-P_1}{P_1}$	636	$100^C \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23			
Original cost	700	$500^C \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82	160		760
$700^E \times \left(\frac{N_4-N_3}{N_3} - \frac{P_4-P_3}{P_3}\right)$						
$+700^E \times \frac{P_4-P_3}{P_3}$	21	Surplus, on conventional basis			700	
(Total nonmonetary assets)	2,987	1. Equities side money-value change increments				
(Total assets)	3,087	$700^E \times \frac{P_3-P_2}{P_2}$	124.15			
		$700^E \times \frac{P_4-P_3}{P_3}$	7.22			
		$700^E \times \frac{P_3-P_2}{P_2} \times \frac{P_4-P_3}{P_3}$	1.28			
		$800^L \times \frac{P_2-P_1}{P_1}$	23.88			
		$600^B \times \frac{P_4-P_1}{P_1}$	135	291.53		
		2. Market-value change increments less money-value change increments				
		$500^C \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$	417.5			
		$600^B \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$	501			
		$700^E \times \left(\frac{N_4-N_3}{N_3} - \frac{P_4-P_3}{P_3}\right)$	13.78	932.28		
		3. Deduction of realized money-value change increments of nonmonetary assets				

$100^{C} \times \frac{P_2-P_1}{P_1}$	2.99			
$800^{L} \times \frac{P_2-P_1}{P_1}$	23.88	−26.87		
4. Money-value change loss				
a. Holding loss				
$600^{C} \times \frac{P_1-P_0}{P_0}$	20.41			
$100^{C} \times \frac{P_4-P_2}{P_2}$	18.95			
$700^{E} \times \frac{P_3-P_2}{P_2}$	124.15			
b. Denominator adjustment				
$100^{C} \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1			
$100^{C} \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23			
$500^{C} \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82			
$700^{E} \times \frac{P_3-P_2}{P_2} \times \frac{P_4-P_3}{P_3}$	1.28	−169.94	1,027	1,727
	(Total equities)			3,087

Table (2)

Type (II-c) (Unit: $1,000)

Income statement

(during the period from point of time t_0, to point of time t_4)

Revenue			
Income from the sales of nonmonetary assets			4,500
Expense			
Cost of nonmonetary assets, sold or used	900		
Wages & miscellaneous	2,360		
Interest	100		−3,360
(Income, on conventional basis)			1,140
Market-value change increments less money-value change increments ($\Delta W^{C,B,E} - \Delta G_w^{C,B,E}$)			
$500^{C} \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$	417.5		
$600^{B} \times \left(\frac{N_4-N_1}{N_1} - \frac{P_4-P_1}{P_1}\right)$	501.		
$700^{E} \times \left(\frac{N_4-N_3}{N_3} - \frac{P_4-P_3}{P_3}\right)$	13.78		932.28
Deduction of realized money-value change increments of nonmonetary assets ($\Delta G_w'^{C,L}$)			
$100^{C} \times \frac{P_2-P_1}{P_1}$	2.99		
$800^{L} \times \frac{P_2-P_1}{P_1}$	23.88		−26.87

Money-value change loss ($\Delta K^{C,E} - \Delta G_w^{C,E} - \Delta G_w'^{C,E}$)			
a. Holding loss			
$600^C \times \frac{P_1 - P_0}{P_0}$	20.41		
$100^C \times \frac{P_4 - P_2}{P_2}$	18.95		
$700^E \times \frac{P_3 - P_2}{P_2}$	124.15		
b. Denominator adjustment			
$100^C \times \frac{P_1 - P_0}{P_0} \times \frac{P_2 - P_1}{P_1}$	0.1		
$100^C \times \frac{P_2 - P_0}{P_0} \times \frac{P_4 - P_2}{P_2}$	1.23		
$500^C \times \frac{P_1 - P_0}{P_0} \times \frac{P_4 - P_1}{P_1}$	3.82		
$700^E \times \frac{P_3 - P_2}{P_2} \times \frac{P_4 - P_3}{P_3}$	1.28		−169.94
(Income, containing unrealized holding gains & losses after money-value change increment deduction)			1,875.47
Taxes & Dividends			−440
(Retained income)			1,435.47

Table (3)

Type (II-c) (Unit: $1,000)

Relationship of the income statement to the balance sheet

Surplus				
Retained income (from the income statement)			1,435.47	
Plus:				
Accretion of money-value change increments for earnings (ΔK^E)				
$700^E \times \frac{P_3 - P_2}{P_2}$	124.15			
$700^E \times \frac{P_4 - P_3}{P_3}$	7.22			
$700^E \times \frac{P_3 - P_2}{P_2} \times \frac{P_4 - P_3}{P_3}$	1.28	132.65		
Entering of money-value change increments for liabilities upon the surplus account ($\Delta K^{L,B}$)				
$800^L \times \frac{P_2 - P_1}{P_1}$	23.88			
$600^B \times \frac{P_4 - P_1}{P_1}$	135	158.88	291.53	
(Closing balance of surplus)				1,727
Capital stock			600	
Increment			160	760
Bonds payable				600
(Total equities)				3,087

* In this case, the portion of capital, represented by liabilities, amounting to $800,000, is assumed to flow out from an enterprise as a result of its refundment. Therefore,

$$\Delta K^L = \Delta G_w{}'^L$$

** In this case, the portion of capital, represented by bonds payable, amounting to $600,000, is entirely invested in the existing nonmonetary assets. Therefore,

$$\Delta K^B = \Delta G_w{}'^B$$

(6) The maintenance of real capital and the normal stock method—Modified type (II-a)

To maintain the quantity of nonmonetary assets under the method of the type (II-a), it is necessary to acquire the substitute for the nonmonetary assets sold or exhausted, just after the point of time when sold or exhausted. Without such replenishment as the above, the method of the type (II-a) might be properly mentioned to result in the insufficient maintenance of the quantity of nonmonetary assets.

Now, let us take up the modified type (II-a).

Assume, in the above example, that the period for income measurement begins at point of time t_1, when nonmonetary assets, amounting to $2,000,000, is acquired.

If it is necessary to maintain the quantity of nonmonetary assets on the same level as those which exist at point of time t_1, the market-value change increment which would occur in nonmonetary assets, being equal in quantity to the shortage resulting from the sale or the exhaustion, should be additionally subtracted from income. It is nothing but the reserve for the maintenance of real capital.

Assuming that the above nonmonetary assets consist of similar merchandises, unit cost and quantity of which are regarded as $1,000 and 2,000 pieces, respectively, the other conditions being the same, the quantity of nonmonetary assets, acquired at point of time t_3, amounting to $700,000, would be regarded as 350 pieces, in view of the fact that the market price indexes (the current replacement cost indexes) at point of time t_1 and t_3, stand at 50 and 100, respectively, as referred to before.

The above circumstances would be represented by the following table:

Transaction	Quantity	Unit cost	Current replacemet cost	Market price index N
Purchase, at point of time t_1	2,000	pieces @ $1,000.	$2,000,000	50
Sale, at point of time t_2	900	pieces @ $1,600.	$1,440,000	80
Purchase, at point of time t_3	350	pieces @ $2,000.	$ 700,000	100
Closing balance, at point of time t_4	1,450	pieces @ $2,060.	$2,987,000	103

The market-value change increment which would occur in nonmonetary assets, being equal in quantity to the shortage, is regarded as $393,000, as follows:

(Unit: $)

$$350\text{ pieces}\times 1,000\times\frac{N_3-N_2}{N_1} \quad +(900\text{ pieces}-350\text{ pieces})\times 1,000\times\frac{N_4-N_2}{N_1}$$

$$=350,000\times\frac{100-80}{50} \quad +550,000\times\frac{103-80}{50}$$

$$=140,000 \quad +253,000$$

$$=393,000$$

The above market-value change increment is treated as "Reserve for the maintenance of real capital" on the equities side.

If the normal stock method of inventories is applied, on condition that the cost of the substitute for the shortage in the normal stock, if any, is subtracted from the value of the normal stock which is fixed by the original cost at point of time t_1, results that are essentially the same as those yielded by the maintenance reserve approach, as referred to above, would be yielded. The cost of goods sold is regarded as $1,833,000, in both cases, as follows:

(Unit: $)

Cost of goods sold

Maintenance reserve approach

$$900,000+900,000\times\frac{N_2-N_1}{N_1} \quad +350,000\times\frac{N_3-N_2}{N_1}+550,000\times\frac{N_4-N_2}{N_1}$$

Cost of goods sold (on cost basis)	Realized market-value change increment	Reserve for the maintenance of real capital

$$=900,000+900,000\times\frac{80-50}{50} \quad +350,000\times\frac{100-80}{50}+550,000\times\frac{103-80}{50}$$

$$=900,000+540,000 \quad +140,000 \quad +253,000$$

$$=1,833,000$$

Normal stock method

2,000,000	+700,000	−867,000
Normal stock (Opening balance)	Purchase	Closing balance (as referred to under)

$$=1,833,000$$

The book cost of the closing balance of inventories, deduced by the normal stock method, amounting to $867,000, is equal to that which is found out by deducting the neutralized market-value change increments, totaling $933,000, from the original cost of the closing balnce, totaling $1,800,000.

Normal stock method (Unit: $)

(In case the replacement cost of the substitute for the shortage in the normal stock of inventories is absorbed as expense, assuming that nonmonetary assets existing at point of time t_1 are regarded as the normal stock)

Opening balance	2,000 pieces @1,000.	2,000,000
Closing balance		
1. Normal stock	2,000 pieces @1,000.	2,000,000

2. Shortage

Opening balance	2,000 pieces		
Closing balance	1,450 pieces		
(Shortage)	550 pieces	550 pieces @2,060.	1,133,000(−)
		Closing balance	867,000

Maintenance reserve approach

$$500{,}000^{C}+600{,}000^{B}+700{,}000^{E}-350{,}000\times\frac{N_3-N_2}{N_1}-550{,}000\times\frac{N_4-N_2}{N_1}-900{,}000\times\frac{N_2-N_1}{N_1}$$

Assets account (on cost basis) | Reserve for the maintenance of real capital | Realized market-value change increment

$$=500{,}000+600{,}000+700{,}000-140{,}000-253{,}000-540{,}000$$
$$=1{,}800{,}000-933{,}000$$
$$=867{,}000$$

(Closing balance of the normal stock method)

Under the LIFO method, the market-value change increment of the shortage in the opening balance (viz. the normal stock, if the normal stock method is applied), occurring during the period from the point of time t_2 to the point of time t_4, is not eliminated from income. Moreover, the realized market-value change increment of nonmonetary assets which are sold at point of time t_2 is eliminated from income only in case the substitute therefor is acquired, and as a result, the market-value change increment of 550 pieces of nonmonetary assets (viz. the shortage in the opening balance), occurring during the period from the point of time t_1 to the point of time t_2, is entered upon the realized surplus account.

LIFO method (Unit: $)

$$500,000+600,000+700,000-350,000\times\frac{N_3-N_2}{N_1}-(900,000-550,000)\times\frac{N_2-N_1}{N_1}$$

Assets account (on cost basis) | Reserve for the maintenance of real capital | Realized market-value change increment

$$=1,800,000-350,000\times\frac{100-80}{50}-350,000\times\frac{80-50}{50}$$
$$(140,000)\qquad(210,000)$$
$$=1,450,000$$

Closing balance

The above closing balance is essentially the same as that which is deduced by the conventional LIFO approach:

(Unit: $)

1,450 pieces	×1,000	=1,450,000
Quantity of closing inventories	Unit cost of opening inventories	Closing balance

As clarified above, the market-value change increment of 350 pieces of nonmonetary assets which would occur during the period from the point of time t_2 to the point of time t_3, if it is assumed to acquire 350 pieces of nonmonetary assets just after 900 pieces of nonmonetary assets are sold, is eliminated from income.

In British current cost accounting, recommended by "The Inflation Accounting, 1975," the market-value change increment of inventories, which is found out by deducting the average-of-year price-level adjusted cost of goods sold from the actual cost of goods sold, is entered upon the "Stock adjustment reserve account," assuming that the closing inventories are acquired at the year-end.

Under this method, it is assumed that inventory assets are always circulating within a year, with the result that the closing inventories are shown at the year-end replacement cost or the replacement cost at point of time near to the year-end. To apply this method to the above example, here, it is necessary to assume that 2,000 pieces of nonmonetary assets are sold at point of time t_2, while 1,450 pieces of nonmonetary assets are purchased at point of time t_3, the other conditions being the same. If the market-value change increment resulting from the restating of the closing balance at the year-end replacement cost is entered upon the "Stock revaluation reserve," the market-value change increment which is entered upon the "Stock adjustment reserve" would be calculated by the "averaging method," as follows:

(Unit: $)

Averaging method

Closing inventories	$2,900,000\times\frac{76.5^*}{100}$ $2,000\times1,450$ pieces	$=2,218,500$
Opening inventories	$2,000,000\times\frac{76.5^*}{50}$	$=3,060,000$
Unadjusted	2,900,000 less 2,000,000	$=900,000$
Adjusted	2,218,500 less 3,060,000	$=841,500(-)$
	(Stock adjustment reserve)	1,741,500

* Average-of-year market price index $\frac{1}{2}(50+103)=76.5$

The above result is essentially the same as that which is produced by the following approach:

(Unit: $)

$$2,000 \text{ pieces}\times(2,000-1,000)-(2,000 \text{ pieces}-1,450 \text{ pieces})\times(2,000-1,530)^*$$

Quantity of opening inventories	Market price at point of time t_3	Market price at point of time t_1	Quantity of opening inventories	Quantity of closing inventories	Market price at point of time t_3	Average-of-year market price
(2,000,000)			550 pieces$\times$(2,000—1,530)			
			(258,500)			

$=1,741,500$

$\vdots$

(Stock adjustment reserve)

* Average-of-year market price $\frac{1}{2}(1,000+2,060)=1,530$

The above calculation is also represented by using the market price indexes, as follows:

(Unit: $)

$$2,000,000\times\frac{100-50}{50}-(2,000,000-1,450,000)\times\frac{100-76.5}{50}$$

$\vdots$ (258,500)

$2,000,000$

$$=2,000,000\times\frac{N_3-N_1}{N_1}-550,000\times\frac{N_3-(\text{Average-of-year index})}{N_1}$$

$$=1,450,000\times\frac{N_3-N_1}{N_1}$$

(1,450,000)

$\vdots$

Market-value change increments of goods sold, the substitute for which are acquired at point of time t_3

$$+550,000\times\frac{(\text{Average-of-year index})-N_1}{N_1}$$

(291,500)

$\vdots$

Market-value change increment of goods sold, the substitute for which is not acquired

It should be noted, here, that the market-value change increment of 1,450 pieces of nonmonetary assets which would occur during the period from the point of time t_2 to the point of time t_3, if it is assumed to acquire 1,450 pieces of nonmonetary assets just after 2,000 pieces of nonmonetary assets are sold, is eliminated from income. This kind of market-value change increment is treated in the same way as the realized market-value change increment of goods sold.

In this respect, the above averaging method has something in common with the maintenance reserve approach, the normal stock method, and the LIFO method, which would be properly mentioned to belong to the modified type (II-a).

The realized market-value change increment of nonmonetary assets is subtracted from the cost of the closing balance under the normal stock method and the LIFO method, while entered upon the stock adjustment account under the above averaging method. In these cases, the market-value change increment is subtracted from income when realized without being recognized as the unrealized market-value change increment previously.

Now, let us make a comparison between them, taking up the problem of how to deal with the sale of 900 pieces of nonmonetary assets and the purchase

of 350 pieces of nonmonetary assets.

The market-value change increment of 350 pieces of nonmonetary assets purchased, occurring during the period from the point of time t_1 to the point of time t_3 $\left(\text{viz. } 350{,}000\times\frac{N_3-N_1}{N_1}\right)$, is subtracted from income under any of these method.

If the market-value change increment of the shortage in the normal stock is disregarded, results that are essentially the same as those yielded by the LIFO method, would be yielded under the normal stock method, assuming that the opening balance is regarded as the normal stock.

In case the closing balance is less, in quantity, than the opening balance under the averaging method, the market-value change increment resulting from the difference between the average-of-year index and the year-beginning index would be additionally subtracted from income in comparison with the LIFO method.

Meanwhile, in case the closing balance is more, in quantity, than the opening balance, the market-value change increment resulting from the difference between the index which stands at point of time t_3 and the average-of-year index would be additionally subtracted from income.

Modified type (II-a)

Balance sheet as at point of time t_4 (Unit: $1,000)

Monetary assets	100	Bonds payable		600
		Capital stock		600
(Total monetary assets)	100			
Monetary assets		Money-value change adjustment account		
Original cost	500	a. Holding loss		
$500^C\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$		$600^C\times\frac{P_1-P_0}{P_0}$	20.41	
$+500^C\times\frac{P_4-P_1}{P_1}$	530	$100^C\times\frac{P_4-P_2}{P_2}$	18.95	
		$700^E\times\frac{P_3-P_2}{P_2}$	124.15	
Original cost	600	b. Denominator adjustment		
$600^B\times\left(\frac{N_4-N_1}{N_1}-\frac{P_4-P_1}{P_1}\right)$		$100^C\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1	
$+600^B\times\frac{P_4-P_1}{P_1}$	636	$100^C\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23	
		$500^C\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82	
Original cost	700	$700^E\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	169.94
$700^E\times\left(\frac{N_4-N_3}{N_3}-\frac{P_4-P_3}{P_3}\right)$		Reserve for the maintenance of real capital		

$+700^{E}\times\frac{P_4-P_3}{P_3}$	21	$350^{E}\times\frac{N_3-N_2}{N_1}$	140	
		$(900^{C,L}-350^{E})\times\frac{N_4-N_2}{N_1}$	253	393
(Total nonmonetary assets)	2,987	Market-value change adjustment account		
(Total assets)	3,087	$100^{C}\times\frac{N_2-N_1}{N_1}$	60	
		$800^{L}\times\frac{N_2-N_1}{N_1}$	480	
		$500^{C}\times\frac{N_4-N_1}{N_1}$	530	
		$600^{B}\times\frac{N_4-N_1}{N_1}$	636	
		$700^{E}\times\frac{N_4-N_3}{N_3}\left(=350^{E}\times\frac{N_4-N_3^{*}}{N_1}\right)$	21	1,727
		Surplus, on conventional basis		700
		1. Market-value change increments deduction		
		$100^{C}\times\frac{N_2-N_1}{N_1}$	60	
		$800^{L}\times\frac{N_2-N_1}{N_1}$	480	−540
		2. Money-value change increments		
		a. Holding loss		
		$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41	
		$100^{C}\times\frac{P_4-P_2^{**}}{P_2}$	18.95	
		$700^{E}\times\frac{P_3-P_2^{**}}{P_2}$	124.15	
		b. Denominator adjustment		
		$100^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_2-P_1}{P_1}$	0.1	
		$100^{C}\times\frac{P_2-P_0}{P_0}\times\frac{P_4-P_2}{P_2}$	1.23	
		$500^{C}\times\frac{P_1-P_0}{P_0}\times\frac{P_4-P_1}{P_1}$	3.82	
		$700^{E}\times\frac{P_3-P_2}{P_2}\times\frac{P_4-P_3}{P_3}$	1.28	−169.94
		3. Cost for the maintenance of real capital		
		$350^{E}\times\frac{N_3-N_2^{**}}{N_1}$	140	
		$(900^{C,L}-350^{E})\times\frac{N_4-N_2^{**}}{N_1}$	253	−393 −402.94***
		(Total equities)		3,087

* Market price indexes, N_1 and N_3, are regarded as 50 and 100, respectively. Then, $N_3=2N_1$

Therefore,

$$700^{E}\times\frac{N_4-N_3}{N_3}=700^{E}\times\frac{N_4-N_3}{2N_1}=350^{E}\times\frac{N_4-N_3}{N_1}$$

** Money-value change increments, $100^{C}\times\frac{P_4-P_2}{P_2}(=18.95)$ and $350^{E}\times\frac{P_3-P_2}{P_2}(=62.08)$, which are treated as holding loss, would be doubly subtructed from income, in view of the fact that the cost for the maintenance of real capital are represented by the following items:

$$350^{E}\times\frac{N_3-N_2}{N_1}=350^{E}\times\frac{P_3-P_2}{P_2}+\left[350^{E}\times\left(\frac{N_3-N_2}{N_2}-\frac{P_3-P_2}{P_2}\right)+350^{E}\times\frac{N_2-N_1}{N_1}\times\frac{N_3-N_2}{N_2}\right]$$

$$(900^{C,L}-350^{E})\times\frac{N_4-N_2}{N_1}=100^{C}\times\frac{P_4-P_2}{P_2}+\left[100^{C}\times\left(\frac{N_4-N_2}{N_2}-\frac{P_4-P_2}{P_2}\right)\right.$$
$$\left.+100^{C}\times\frac{N_2-N_1}{N_1}\times\frac{N_4-N_2}{N_2}+(800^{L}-350^{E})\times\frac{N_4-N_2}{N_1}\right]$$

*** Deferred deficit

Modified type (II-a)

Income statement (Unit: $1,000)

(during the period from point of time t_1 to point of time t_4)

Revenue		
Income from the sales of nonmonetary assets		4,500
Expenses		
Cost of nonmonetary assets, sold or used	900	
Wages & miscellaneous	2,360	
Interest	100	3,360
(Income, on conventional basis)		1,140
Less:		
1. Deduction of market-value change increments ($\Delta W^{C,L}$ and the money-value change increment of the shortage)		
$100^{C}\times\frac{N_2-N_1}{N_1}$	60	
$800^{L}\times\frac{N_2-N_1}{N_1}$	480	540
$350^{E}\times\frac{N_3-N_2}{N_1}$	140	
$(900^{C,L}-350^{E})\times\frac{N_4-N_2}{N_1}$	253	393	−933
2. Money-value change loss ($\Delta K^{C,E}-\Delta G_w^{C,E}-\Delta G_w'^{C,E}$)		
a. Holding loss		
$600^{C}\times\frac{P_1-P_0}{P_0}$	20.41	
$100^{C}\times\frac{P_4-P_2}{P_2}$	18.95	
$700^{E}\times\frac{P_3-P_2}{P_2}$	124.15	

b. Denominator adjustment		
$100^{C} \times \frac{P_1-P_0}{P_0} \times \frac{P_2-P_1}{P_1}$	0.1	
$100^{C} \times \frac{P_2-P_0}{P_0} \times \frac{P_4-P_2}{P_2}$	1.23	
$500^{C} \times \frac{P_1-P_0}{P_0} \times \frac{P_4-P_1}{P_1}$	3.82	
$700^{E} \times \frac{P_3-P_2}{P_2} \times \frac{P_4-P_3}{P_3}$	1.28	−169.94
	(Income for the year)	37.06
Taxes	320	
Dividends	120	−440
	(Deferred deficit)	−402.94

Conclusion

In considering the generalized structure of inflationary accounting, we take up the problem of what kind of realized money-value change increment or market-value change increment of nonmonetary assets is subtracted from income for the year, in the income statement.

Secondly, attention should be directed to the problem of how to deal with the money-value change loss of monetary assets and the denominator adjustment increment resulting from the restating of the money-value change loss (in the case of monetary assets) or the realized money-value change increment (in the case of nonmonetary assets), both of which would have occurred during the period prior to the point of time of acquisition of the existing monetary or nonmonetary assets, on the current general price level, in the income statement. Importance is attached, here, to the problem of the overlap between the realized money-value change increment of nonmonetary assets, which is subtracted from income, and the money-value change loss of monetary assets.

Thirdly, we take up the problem of where and what kind of equities side increment is recorded in case the realized money-value change or market-value change increment of nonmonetary assets and the money-value change loss are eliminated from income in the income statement, and the unrealized money-value change or market-value change increment of nonmonetary assets is included in the nonmonetary assets account of the year-end balance sheet. If such equities account as the capital stock account or the value-change adjustment account contains the increments, equal in amount to the sum of the realized and unrealized money-value or market-value change increment of nonmonetary assets and the money-value change loss, there is no difference, in dealing with the money-value change or market-value change increment, between the income statement and the year-end balance sheet. If only the money-value change increment of capital stock are entered upon the capital stock account, as shown in the type (I-b) and the type (II-b), only those which correspond to the money-

value change increment of nonmonetary assets and the money-value change loss (including the denominator adjustment increment), occurring in the portion of capital regarded as capital stock, are eliminated permanently from income. There is some difference, in dealing with the money-value change or market-value change increment, between the income statement and the year-end balance sheet. It is necessary to disclose the relationship of the money-value change increment or loss which is eliminated from income for the year in the income statement, to the money-value change increment or loss which is subtracted from the surplus in the year-end balance sheet. It might be properly mentioned that the reporting of operating results or financial conditions on the current price level is taken up, in the case of the type (I-b) or type (II-b), rather than the eliminating of the money-value change or market-value change increment of nonmonetary assets or the money-value change loss, permanently or temporarily, from income.

It seems to be questionable, however, that the unrealized money-value change increment of nonmonetary assets, occurring in the portion of capital regarded as liabilities or earnings, is treated previously as the component of realized surplus, insofar as it is regarded as the segment of unrealized profit. It should be discriminated from the other components of the realized surplus which would be shown if conventional accounting is applied, so that it may be eliminated from earnings allotted for dividends or taxable income. It is advisable in practical accounting, to pick up wholly the unrealized money-value change increments of nonmonetary assets, inclusive of the increment of nonmonetary assets occurring in the portion of capital regarded as capital stock, ΔG_w, and to discriminate them, together with the equities side increment of capital stock, ΔK^o, which is recorded as a negative figure in the surplus account if the unrealized increments of nonmonetary assets are wholly picked up, from the other components of the surplus which would be shown in conventional accounting.

Fourthly, we take up the problem of the maintenance of the quantity of nonmonetary assets.

To maintain the quantity of nonmonetary assets under the method of the type (II-a), it is necessary to acquire the substitute for nonmonetary assets sold, exhausted, or depreciated, just after the point of time when sold, exhausted, or depreciated.

In the case of the modified type (II-a), a certain quantity of nonmonetary assets, such as the normal stock, the opening inventories and so on, would be maintained. Attention should be directed, here, to the overlap between the eliminating of the assumed market-value change increment of nonmonetary assets sold or exhausted, occurring during the period from the point of time of sale or exhaustion to the point of time of replenishment, from income, and the eliminating of holding loss of monetary assets from income, if the money-value change loss of monetary assets is recognized in this case.