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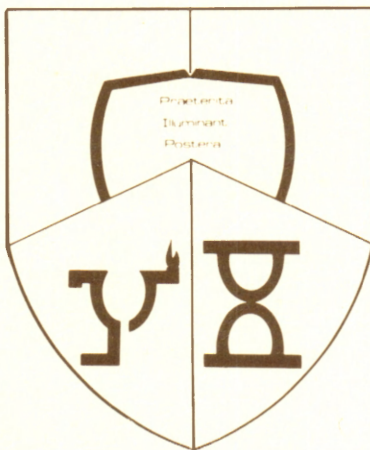

Spring 1983
Volume 10, Number 1

Research on the Evolution of
Accounting Thought and
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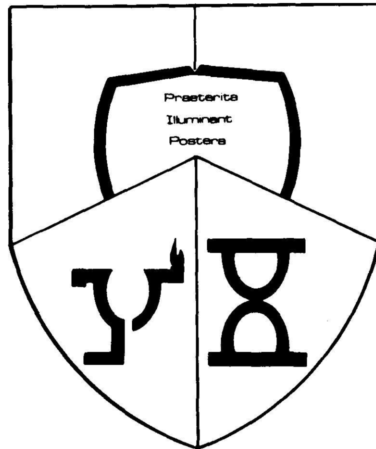

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Semiannual Publication of The Academy of Accounting Historians

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FOOTNOTES

[1]Chatfield, p. 52.
[2]Previts (1982a), p. 8.
[3]Previts (1982b), pp. 19-20.

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Chatfield, Michael. *A History of Accounting Thought.* Hinsdale, Ill.: The Dryden Press, 1974.

Previts, Gary John. "Hazy History: Fact and Folklore in Accounting." *The Accounting Historians Journal,* Vol. 9, No. 2 (Fall 1982a), pp. 7-9.

————————. "Old Wine and . . . The New Harvard Bottle." *The Accounting Historians Journal,* Vol. 9, No. 2 (Fall 1982b), pp. 19-25.

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Shizuki Saito
UNIVERSITY OF TOKYO

ASSET REVALUATION AND COST BASIS: CAPITAL REVALUATION IN CORPORATE FINANCIAL REPORTS

Abstract: The paper is a historical study of the asset revaluation movement and the subsequent establishment of the cost basis in the United States. A survey of the corporate report leads to a generalization that the asset revaluations were fundamentally the adjustments of equity capital triggered by corporate financial policies. The concept of quasi-reorganization then was developed to ensure that the capital revaluation was undertaken for the right reasons. This newly developed concept made the revaluation of equity and assets less useful from the standpoint of corporate financial management. Asset revaluation was thus replaced by the cost principle.

Introduction

The historical development of accounting principles needs to be studied on the basis of the interrelationship among the following three basic factors:

1. Accounting practices of individual corporations
2. Accounting regulations that constrain those practices
3. Environmental conditions, i.e., general economic and social circumstances and business conditions.

The traditional approach of accounting historians seems to have been like Figure 1. That is, corporate accounting practices obey, or are forced to obey, accounting regulations (arrow a), which may change in response to changing environmental conditions (arrow b). Accounting practices, however, do not always obey the regulations. In fact, they frequently disobey regulations, and such repeated infractions may lead to changes in the regulations. In addition, business and other environmental conditions often have direct and vital effects on corporate accounting practices.

The author is indebted to Professors Alfred D. Chandler, Jr. and William W. Cooper for their valuable suggestions. He has also benefited greatly from comments and suggestions by Professors Robert N. Anthony, Paul Frishkoff, Yuji Ijiri, Thomas K. McCraw, Gary J. Previts, Arthur L. Thomas and Stephen A. Zeff. Financial support by the American Council of Learned Societies is gratefully acknowledged.

Figure 2 is a revision of Figure 1, indicating the dynamic relationship among accounting practices, regulations, and environmental conditions. As illustrated in this new Figure, individual companies are constantly seeking, from among alternative accounting rules in relation to the existing regulations or norms, those that are compatible with their particular economic, social, and business conditions (arrows a and c). When these environmental conditions result in practices that repeatedly disobey a particular rule of the regulations, the rule, after seeking all of the possible ways to suppress the infractions, may be adjusted to the actual situation or replaced by another rule.[1] This adjustment or alteration of a particular rule may be accompanied by other derived changes of related rules, thereby bringing a transformation, as it were, to the entire system of accounting regulations (arrow a′).

Consequently, in light of conflicts between practices and regulations, the system of accounting rules needs to be studied in terms of its changes—rather than its static order. Before presenting a theoretical framework for the changes in an accounting system, however, this approach should be tested for its usefulness and enriched with empirical data through a fact-finding study of some critical turning points in the history of accounting. This paper, pursuing a primary historical study of the accounting practices reported by the large U. S. corporations in their annual financial statements, is devoted to a part of that preliminary work.[2]

Traditional Concepts of Asset Revaluation and Cost Basis

Among the critical turning points in the history of accounting, the so-called asset revaluation movement in the 1920s and 1930s and

Figure 1

Traditional Approach to Developing Accounting Principles

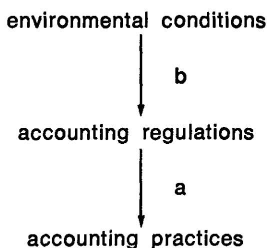
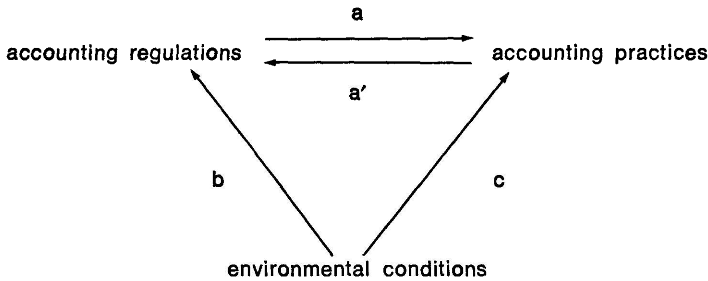


Figure 2

Proposed Approach to Developing Accounting Principles



the subsequent firm establishment of the cost basis may provide a good basis for testing and enriching the proposed approach to studying the history of accounting.[3] The remainder of this paper is a study of how the period of revaluation of fixed assets (tangible and intangible) led to the establishment of cost-based valuation. This study does not address the revaluation of current assets (e.g., inventories) or investments (e.g., securities).

It is sometimes argued that the asset revaluation movement constituted a major departure from the historical cost basis, which was already a generally accepted rule of accounting.[4] To the contrary, some argue that this practice of revaluation simply characterized the common notion of asset valuation that was prevailing among American accountants before the cost principle was established in the 1930s.[5] Whichever view is taken, it is clear that the cost basis did not become established firmly as a practical working rule—i.e., as a rule or a standard which was generally accepted and actually honored in the practice—until the asset revaluation movement came to an end in the 1930s.[6]

According to some leading accounting historians, the asset revaluation movement in the 1920s and 1930s was based on the accretion concept of income, which is said to have been prevailing in those years.[7] The fact that corporate accounts were primarily used as a basis for the granting of credit resulted in the emphasis on balance sheet accounts and the prevalence of the accretion concept of income.[8] The asset revaluation movement was simply an adjustment of the book values of assets according to their current market prices. Because the use of accounts as information for investors

did not become popular until the stock exchange boom in the 1920s and the collapse of security prices in the early 1930s, it is logically assumed that the accrual concept of income associated with the cost-allocation method could not have been prevailing until then.[9] This view, while perhaps reflecting the traditional way of thinking, is oversimplified.[10]

A series of official statements made by the American Institute of Accountants (AIA), dating from the *Uniform Accounting* of 1917 have been frequently presented as a proof to support this view.[11] Sponsored and published by the Federal Reserve Board in collaboration with the AIA, *Uniform Accounting* has been regarded as an historical document that marked the beginning of generally accepted accounting principles in the United States.[12] It emphasized the so-called balance sheet audit, which was associated implicitly with the accretion method of income determination based primarily on the standpoint of the credit grantor.[13] The basic philosophy of this document was maintained in the AIA's official pronouncement of accounting principles published in 1929, *Verification of Financial Statements.* Not until 1932 did the AIA officially advocate the investor's point of view, instead of creditor's, thereby emphasizing the importance of income accounting based on cost figures, instead of balance sheet figures based on the liquidating values of a going concern.[14] This view was made public by the AIA in its 1934 publication, *Audit of Corporate Accounts*.

While the *Uniform Accounting* of 1917 clearly emphasizes the balance sheet audit, reference to the accretion concept of income, implicit or explicit, is not made. Rather, the accrual concept of income associated with the cost allocation method can be clearly noticed even in this early version of accounting principles. In other words, historical cost valuation was not a product of the 1930s. In fact, cost-based valuation was normally practiced by the majority of large U. S. corporations, regardless of the year for which the annual reports were prepared. This certainly was true for the annual reports of *Fortune 500* corporations during the 1920s and 1930s. Revaluation of assets was more of an exception.[15] However, the exceptions were too critical in terms of their frequency and reported monetary amount to claim that cost valuation was a well-established practice before the 1930s.

Preliminary Survey of Asset Revaluation Movement

A general view of the asset revaluation movement may be obtained from the work of S. Fabricant. He studied the annual reports

of more than 200 large industrial concerns randomly selected from the file of the reports of the New York Stock Exchange for the years 1925 through 1934. Several of Fabricant's findings are particularly relevant to this discussion.

First, he found that, contrary to its characterization as a period of only write-ups,[16] the 1920s saw both write-ups and write-downs of tangible fixed assets. In the 1930s, his study indicated that both the number and monetary amount of write-downs exceeded that of write-ups.

Second, in no year during his period of study, did he find that there was a net write-up of intangible assets for the whole economy. This occurred in spite of the fact that corporations reported a large amount of revaluation for intangible assets every year from 1925 through 1934. In other words, most revaluations, in terms of dollars, of intangibles were downward. This finding led Fabricant to conclude that:

> . . . intangibles are written down when business is good, to indicate caution, as frequently as they are written down when times are bad and values appear to be tottering or to have crashed.[17]

Another important part of Fabricant's study was devoted to an analysis of the actual causes that made asset revaluation so popular among such a large number of corporations. In the corporate annual reports he studied, Fabricant found that discrepancy between book value and some sort of current value was mentioned as the basis of practically all revaluations.[18] However, Fabricant does caution that:

> Even an independent appraisal is still subject to the superior will and responsibility of the officers and directors of a corporation. Occasionally, appraisal does not lead to immediate or ultimate revaluation, or the appraisal may be modified by decision of the directors.[19]

For this and other reasons:

> Appraisals . . . are not reasons for revaluations but only methods of getting at the amount by which to revalue. They can tell us nothing in themselves of these reasons except to suggest that the fundamental factors were sufficiently strong to be sensed by the officials ordering the appraisals.[20]

According to Fabricant, more fundamental factors leading to revaluation include such environmental conditions as changes in general price levels, discovered obsolescence, and errors in earlier estimates of depreciation and depletion. Among them, obsolescence is "probably a major factor accounting for downward revaluations" although it is mentioned in only a few annual reports.[21] In periods of economic depression, the existence of idle properties resulting from obsolescence is the immediate cause of write-downs of tangible assets. Obsolescence is also revealed to some extent in times of prosperity, where most capacity is in full use. This, therefore, gives an explanation of the basic factors contributing to downward revaluations of tangible assets.[22]

These factors Fabricant points out, however, are not sufficient to explain completely the asset revaluation movement (i.e., both write-ups and write-downs). For example, changes in general price levels may fail to give a convincing explanation of the fact that both upward and downward revaluations were made of tangible fixed assets in the 1920s. Furthermore, while obsolescence is an obviously important factor accounting for downward revaluations, it does not necessarily account for upward revaluations, thereby failing to give a general picture of the asset revaluation movement. To gain a better insight into the factors leading to asset revaluations, a complete survey of all adjustments of fixed asset values reported by *Fortune 500* corporations which were in existence during the entire period of asset revaluation movement (i.e., from the early 1920s to the mid-1930s) was undertaken and is presented in the remainder of this paper.[23]

Asset Revaluations: Write-Ups of Fixed Assets

An investigation of what was actually underlying the asset revaluation movement requires identification and analysis of factors contributing to write-ups, as well as those contributing to write-downs. For the sake of convenience, write-ups and write-downs will be discussed separately. This is not meant to imply that the revaluation movement occurred in two separate stages—i.e., write-ups in the 1920s and write-downs in the 1930s. As was discussed previously, both write-ups and write-downs occurred throughout the whole period of asset revaluation.

In investigating upward revaluations, it may be of help to know how the depreciation on the appreciation increase was accounted for in corporate financial reports relative to the resulting appraisal credit. During the 1920s and 1930s, at least three different methods

of accounting for this were used.[24] These methods are categorized as follows:

1. To charge depreciation on the basis of original cost against income, and to charge the depreciation on appreciation increase against appraisal credit.
2. To charge depreciation on the appreciated basis against income and, at the same time, to increase the earned surplus by the amount of the depreciation on appreciation increase—i.e., the realized appreciation—through a charge against appraisal credit.
3. To charge depreciation on the appreciated basis against income, and to make no further surplus adjustment.

The first two methods mentioned above decrease the appraisal credit as it realizes and transfer it to the earned surplus account or to the allowance for depreciation account. In these two instances, therefore, the appraisal credit is regarded as a kind of earned surplus. In the third method, on the other hand, the appraisal credit is dealt with as a kind of capital surplus and remains unchanged until disposed of by special action, sometimes even after the appraised units are retired. Most accountants favored the first two methods, especially the first.[25] The third method, while sometimes advocated, was by no means a prevailing practice.[26] In the first method, the appreciation increase in asset values had no effect on depreciation charges, income, and earned surplus. Even when the second method was used, it never affected the balance of earned surplus.

What was, then, the practical benefit of asset revaluation? The actual cases of upward adjustment may be generally categorized as one of the following two major types (see Table 1 in Appendix for a list of actual cases):

1. Asset accounts are written up and the appraisal credit thus created is transferred to the capital account through the stock dividends.
2. Asset accounts are written up and the appraisal credit thus created is used to relieve the earned surplus of its burden—e.g., to write down the intangibles and/or other doubtful items or to restore the deficit of earned surplus.

The large majority of the upward revaluation cases are of the second type described above. A reasonable generalization, therefore, is that, in the majority of cases, upward adjustments of tangible

fixed assets typically occurred to compensate for the downward adjustments of intangible assets or other doubtful accounts.[27] In these cases, it was the book value of *net assets*—rather than individual fixed assets—that was undergoing a revaluation. In other words, the book value of net assets was allowed to remain unchanged despite the intangibles or doubtful accounts that were written down, or, at the very least, it was not written down as much as the latter items were. An increase in goodwill values, therefore, was recognized to set up a surplus against which write-downs of doubtful accounts were to be charged off.

This practice was complicated since, in many cases, it was the downward adjustment of the goodwill *account* that actually called for a compensating mark-up of goodwill *values* to be reported on the corporate balance sheet. In those cases, the goodwill account on the balance sheet had to be diminished although the actual goodwill values remain unchanged.[28] Moreover, the goodwill account in a going entity was rarely adjusted upward except for the capitalization of actual expenditures according to the standard practice of accounting.[29] In order to be recognized, therefore, goodwill values had to be allocated to individual tangible assets as the increase in their appraisal value, thereby creating a surplus to absorb the amount of doubtful or burdensome accounts to be written off. In summary, what was occurring in these cases was an upward adjustment of *intangible* goodwill values based on a revaluation of net assets (equity capital). In the book entries, however, this practice was accounted for as upward adjustments of individual *tangible* assets.

This same general explanation also applies to the other major type of write-ups mentioned above, i.e., the capitalization via stock dividends of appraisal credit resulting from the upward adjustments of tangible assets. Recognized increase in goodwill values based on a revaluation of net assets (equity capital) was allocated to the individual tangible assets as the increase in their appraisal values, and the earned surplus thus created was transferred to the capital account through the stock dividends.

Underlying what happened in the upward adjustments of fixed asset values, therefore, was a contradiction between the *economic reality* and the *accounting formality* of asset revaluation—i.e., a contradiction between the substantial nature of asset revaluation as a revaluation of equity capital and the way in which it was reported in the corporate accounts. It is likely that this contradiction resulted in a critical difficulty concerning the distinction between capital and

income (capital surplus and earned surplus). Because it was an adjustment of goodwill values associated with the revaluation of equity capital that was actually underlying the upward adjustments of individual assets, the resulting appraisal credit should have been regarded as capital surplus, not earned surplus. As capital surplus, the resulting appraisal credit could not have been used to write down the goodwill account or any other asset accounts until the remaining balance of earned surplus was exhausted.

As a matter of accounting formality, however, the adjustment of goodwill values did appear in the corporate accounts as the appraisal increases in individual tangible assets—i.e., as unrealized profits. The resulting surplus, therefore, was allowed to be dealt with as income (earned surplus) and could be immediately appropriated to any type of write-downs without having already appropriated the remaining balance of earned surplus. This particular way in which the revaluation of equity capital appeared in the corporate accounts was evidently favored by the majority of corporations from the standpoint of their financial policies.[30] As discussed in the next section, it was in the case of write-downs where the contradiction between the economic reality and the accounting formality of asset revaluation became actualized in the corporate reports so that it could no longer be overlooked.

Asset Revaluations: Write-Downs of Fixed Assets

As can be seen from the cases, the downward revaluation of intangible assets (e.g., goodwill, patents, royalty contract) was the most common type of write-down (see Table 2 in Appendix). The effect of such downward revaluations on the net value of equity capital may or may not have been canceled or eased by the compensating upward adjustments of tangible fixed assets. Cases in which write-downs were accompanied by compensating write-ups can be determined by comparing the above instances of write-downs (Table 2) with the list of appraisals that were designed to relieve the earned surplus of its burden (Table 1). Regardless of whether there were compensating upward revaluations, the reduction of intangible assets formed a part of goodwill adjustment based on the revaluation of net assets (equity capital).

Tangible fixed assets were also written down frequently. Some of these write-downs were reported along with a simultaneous reduction of intangible assets to nominal values (see Table 3 in Appendix). These reductions of intangible assets may have been triggered by the downward adjustments of intangible items. Write-downs of

intangible items had to be supplemented by a reduction of tangible assets in order to achieve a reduction in the net value of equity capital items. In essence, the downward adjustment of tangible assets formed a part of the adjustment of intangible goodwill values based on the revaluation of owners' equity. Once the intangible goodwill accounts had been reduced to nominal values, leaving practically no more remaining balance to be written down, declining goodwill values had to be allocated to tangible assets as a decrease in their individual value.

In many cases, on the other hand, tangible fixed assets were written down with no attendant adjustment of intangible assets in the same period. Such write-downs typically occurred when the corporation had little balance of goodwill account to be exhausted (see Table 4 in Appendix). Gold Dust, for example, wrote down the book values of its plant a year after it reduced its intangible assets to $1.00 in 1927. Hammermill Paper adjusted its plant property values in 1932, when it no longer carried intangible values on its balance sheets (they were eliminated in 1928).

There are also many cases where tangible fixed assets were written down with no previous history of a reduction of intangible assets as well as no current balance of intangible accounts available for a reduction of net assets. Among the latter, the U. S. Steel Corporation is a typical case.[31] Write-downs made in 1928 and 1929 by U. S. Steel are summarized in its 1929 annual report as follows:

Earnings heretofore reserved and applied in retirement of U. S. Steel Corporation Bonds through Sinking Funds specifically written off to Property Investment Account		$182,092,834.00
Earnings and Surplus appropriated to cover capital expenditures for additions, betterment and improvements, and which appropriations have been formally applied in reduction of the Property Investment Account, thus substituting tangible property values in lieu of this amount of above excess cost		$207,708,569.68
Surplus specifically applied:		
Appropriated to close of 1928:	$30,205,076.23	
And in year 1929:	88,296,020.09	$118,501,096.32
Total of Income and Surplus applied as above to December 31, 1929		$508,302,500.00

The first two items are the totals of two series of charges made against income and earned surplus for the period from 1901 to 1928. The third item is the direct charges made against earned surplus in 1928 and 1929. According to the corporation's annual report, the total amount of these write-offs was equal to "the par value of the common stock originally issued," which basically corresponded to the goodwill values recognized by the organization of the corporation.[32]

Some exceptional cases where tangible fixed assets were written down with the balance of goodwill account left unaltered are: Addressograph-Multigraph (1932), American Cyanamid (1930), Borden (1931), General Electric (1893), Hart Schaffner & Marx (1933), May Department Stores (1932), and Ward Baking (1932). In the May Department Stores case, the adjustment made was to reduce the unamortized portion of the established value of leases (in essence, an intangible item), and the unadjusted goodwill account that was carried forward was eliminated in the next year. General Electric adjusted its tangible assets in the same year that the entire amount of goodwill values on its balance sheet was acquired. In the Hart Schaffner & Marx case of 1933, the write-down of tangible assets corresponded to specific capital assets written off by subsidiary companies liquidated during the year. The Borden case of 1931 was simply a cancellation of previous appraisals. In the American Cyanamid case, it adjusted its capital assets when it acquired a large amount of goodwill in the same year. True exceptions, therefore, may be relatively small in number. In summary, the write-downs of tangible fixed assets with a balance of the goodwill account left unadjusted to be available for further reduction can be regarded as minor and exceptional cases in terms of both frequency and reported monetary values.

A reasonable generalization, based on these case studies, is that the majority of write-downs of tangible asset values were, in effect, adjustment of intangible goodwill values. A decrease in goodwill values was recognized as an elimination of intangible accounts (e.g., goodwill account) or, where there was no balance of intangible accounts, this decrease was allocated to the individual tangible assets as a decrease in their current values. In some cases, the recognition of decreasing goodwill values may have been motivated by the need to eliminate the deficit of earned surplus. Underlying the write-downs of fixed asset values, therefore, is a revaluation of intangible goodwill values based on the revaluation of equity capital

(net assets), as was the case with the write-ups of tangible assets discussed previously.[33]

Revaluation as a goodwill adjustment must have contradicted the accounting book entries, as it was often entered as a set of downward adjustments of individual tangible assets. The downward revaluation of equity capital may call for a reduction of capital or capital surplus; its accounting form of "asset" revaluation, however, enables the resulting adjustment of net assets to be charged against income or earned surplus as unrealized losses.

This contradiction between the economic reality and the accounting formality of asset revaluation and the resulting difficulty in distinguishing between capital and income apply to both upward and downward revaluations. In case of write-downs, however, this contradiction could not be ignored in the corporate accounts. Two contradicting rules for charging the reduction of asset values against owners' equity were coexisting. The reduction of asset values was charged against either earned surplus or capital surplus, and both rules were widely accepted (see Table 5 in Appendix).[34]

The coexistence of these mutually exclusive rules or norms was an eminent feature of the write-downs in contrast to the write-ups, where the resulting appraisal credit was generally dealt with as a type of earned surplus. In the case of write-downs, a charge against earned surplus was justified on the ground that it was a kind of extraordinary loss resulting from the deterioration of tangible assets which had been held during the period. Accordingly, earned surplus had to be exhausted before a charge could be made against capital surplus. On the other hand, a charge against capital surplus with the remaining balance of earned surplus left unimpaired was justified on the ground that it was simply a restatement of equity capital coming from the outside capital market, which should never be confused with the result of business operations (i.e., earned surplus).

Which approach was preferred was dependent upon whether a particular firm happened to have a significant balance of earned surplus at the point in time when the revaluation was undertaken. Write-downs were charged against earned surplus when its balance was sufficient; otherwise write-downs were charged against capital surplus before any charge was made against earned surplus. This conclusion is supported because there were relatively few cases where a charge against capital surplus was preceded by the exhaustion of earned surplus when writing down fixed asset values.[35] In most cases where capital surplus was used to reduce the asset

values, the remaining balance of earned surplus was kept unimpaired and preserved for current or future dividend payments.

Quasi-Reorganization and Historical Cost Basis

The coexistence of the above-mentioned contradicting rules by which the reduction of asset values was charged against owners' equity (net assets) must have resulted in much confusion. As a consequence, one of these two rules had to be established as a generally accepted standard practice.

A charge against capital surplus, leaving the balance of earned surplus unimpaired, failed to achieve general acceptance because the underlying concept justifying this rule (i.e., capital adjustment in a going entity) was difficult to implement. Downward adjustment of capital accounts is only permissible where a going entity is being discontinued or reorganized—a situation that requires the entire balance of earned surplus to be exhausted prior to any reduction of capital surplus. Quasi-reorganization is an accounting device that can achieve the same effect while avoiding the formalities of actual reorganization. Accounting rules developed in the 1930s and 1940s by the professional accountants (AIA) and the pertinent regulatory body (SEC) confined the revaluation of equity capital to the case of quasi-reorganization, thereby diminishing the discretion of individual corporations to charge the reduction of asset values against capital surplus before exhausting the balance of earned surplus.[36]

Enforcement of this newly developed rule in effect eliminated the possibility to satisfy the common motive for asset revaluations—i.e., to reduce burdensome assets without impairing the source of dividend payments. Consequently, write-downs of asset values became less frequent, and the so-called historical cost basis, which had been theoretically advocated and actually observed with a large number of exceptions, became established as a practical working rule in corporate financial reporting. As a natural result, write-ups of fixed asset values also became less frequent. The asset revaluation movement was coming to an end, and the cost basis for asset "valuation" was firmly established, both in terms of theory and practice.

Summary and Conclusions

In this paper, a study has been made of the establishment of the cost basis through the asset revaluation movement in terms of the dynamic interrelationship among environmental conditions, account-

ing practices, and accounting rules or norms. The historical cost standard is not a product of the regulated era after the 1930s. For many years before then, it had been advocated by the authoritative and professional bodies and had been regularly observed by the majority of large U. S. corporations. As significant exceptions in terms of frequency and monetary amount, however, were the cases of adjusting asset values, which can be referred to as the asset revaluation movement of the 1920s and the 1930s. The cost basis did not become a firmly established practical working rule until this movement came to an end in the late 1930s.

These revaluations were not only made to adjust the book values of individual assets for their current prices, they were also made to adjust the book value of owners' equity (net assets) for its real value assessed by the capital market. In so far as it was primarily the equity value adjustment, the revaluation increase or decrease in the net assets should have been allocated to the intangible goodwill account, instead of to the individual tangible asset accounts. What triggered this revaluation, however, was the corporations' need to diminish the doubtful items or accumulated losses on their balance sheets without impairing the source of dividend payments (i.e., earned surplus). As intangible accounts were generally regarded as doubtful, in case of write-ups, the appraisal increase had to be allocated to tangible assets, instead of to the goodwill account. In case of write-downs, on the other hand, the total value to be written down often exceeded the balance of goodwill or other intangible accounts available for a reduction of net assets. That excess was allocated to tangible fixed assets as the downward adjustments of their book values.

Evidently, the revaluation of individual assets was a departure from the cost principle. Nonetheless, while revaluation of owners' equity could result in the adjustment of individual assets, it was not this practice for which the cost basis was expected to provide a standard. This may offer a partial explanation of why capital revaluation resulting in the revaluation of individual assets was able to be undertaken so widely as to be considered a "movement." The concept of quasi-reorganization was developed primarily to cope with this situation and to ensure that capital revaluation was undertaken for the right reasons.

Quasi-reorganization, however, no longer satisfied the practical need that originally triggered the revaluations of equity and assets—i.e., to diminish doubtful items without impairing the source of dividend payments. As a consequence, the revaluation practice be-

came less useful from the standpoint of corporate financial management and was subsequently replaced by the cost principle. It was neither the increasing intensity of rule enforcement nor the stability or instability of asset prices that was underlying the asset revaluation movement and the subsequent establishment of the cost principle; rather, it was the revaluation of equity capital triggered by corporate financial policies.

Appendix: Tables

Table 1

Upward Revaluation of Fixed Assets

(1) Asset accounts are written up and the appraisal credit thus created is transferred to the capital account through the stock dividends:
Brunswick-Balke-Collender (1920)
Continental Can (1928*)
Hammermill Paper (1928*)
Pittsburgh Steel (1924)
Standard Oil of New York (1922)

(2) Asset accounts are written up and the appraisal credit thus created is used to relieve the earned surplus of its burden—e.g., to write down the intangibles and/or other doubtful items or to restore the deficit of earned surplus:
Borden (1925)
Brunswick-Balke-Collender (1929, 1930)
Continental Can (1923, 1928*)
Goodyear Tire & Rubber (1920)
Hammermill Paper (1928*)
International Shoe (1925)
Mathieson Alkali Works (1922, 1923)
Simmons (1923)

* is a combination of both types.

Upward adjustment of intangibles reported by Flintkote (1921) was associated with an appropriation of surplus for the purpose of the redemption of preferred stock. Goodyear Tire & Rubber (1934) is an important exception where the appraisal credit was dealt with as an increase in capital surplus. There were, of course, some cases that seemed to have no particular intention of surplus adjustment, such as the appreciation undertaken by American Rolling Mill (1922), Cerro de Pasco Copper (1926), E. I. du Pont (1923), and Standard Oil of New York (1916). E. I. du Pont, for example, added 5,805 thousand dollars of appraisal credit to the Depreciation Reserve.

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Table 2

Downward Revaluation of Fixed Assets: Write-down of Intangible Assets Only

American Can (1937)
American Cyanamid (1923, 1929)
American Chain (1932)
Babcock & Wilcox (1922, 1923)
Borden (1925, 1926)
Chrysler (1932)
General Electric (1898, 1899, 1905, 1906)
Goodyear Tire & Rubber (1909, 1928)
Hammermill Paper (1928)
Hart Schaffner & Marx (1920, 1935)
International Shoe (1925)
L. C. Smith & Corona Typewriters (1936, 1937)
Ligget & Myers Tobacco (1929)
National Cash Register (1928, 1929)
Mathieson Alkali Works (1922, 1923)
Pet Milk (1938)
Proctor & Gamble (1929)
Radio Corporation of America (1925, 1927)
R. J. Reynolds Tobacco (1927)
Sears, Roebuck (1926-1929, 1934)
S. S. Kresge (1924)
Spicer Manufacturing (1928)
Union Carbide & Carbon (1925)
Universal Leaf Tobacco (1926)
Westinghouse Electric & Manufacturing (1927)
F. W. Woolworth (1922-1925)

Table 3

Downward Revaluation of Fixed Assets: Write-down of Tangible Fixed Assets Along with a Reduction of Intangible Assets to Nominal Values

American Cyanamid (1931)
Babcock & Wilcox (1934)
Beatrice Creamy (1933)
Flintkote (1932)
Gold Dust (1927)
Jewel Tea (1928)
National Tea (1932)
Pet Milk (1936)
Raynols Spring (1930)
Radio Corporation of America (1927)
St. Regis Paper (1936)
Simmons (1932)
Spicer Manufacturing (1932)
Standard Oil of New York (1934)
Standard Oil of Ohio (1931)
U. S. Rubber (1938)

Table 4

Downward Revaluation of Fixed Assets: Write-down of Tangible Assets Only—in Case of Little Balance of Intangible Asset Accounts

Brunswick-Balke-Collender (1922, 1931, 1932)
Certain-teed Products (1930)
Continental Can (1932)
Gold Dust (1928)
Hammermill Paper (1932)
J. C. Penney (1932)
Marland Oil (1930-1932)
National Tea (1935)
Oscar Mayer (1932)
Philips Dodge (1921, 1934)
Phillips Petroleum (1932)
Pittsburgh Steel (1937)
Pullman (1932)
Republic Iron & Steel (1928)
Spicer Manufacturing (1939)
Standard Oil of Ohio (1927)
Union Carbide & Carbon (1929, 1931)
United Fruit (1932)
U. S. Gypsum (1932)
U. S. Steel (1928, 1929)

Table 5

Charging the Reduction of Asset Values against Surplus

(1) Charged against earned surplus:
American Can (1937)
General Electric (1898, 1899, 1905, 1906)
Ligget & Myers Tobacco (1929)
Mathieson Alkali (1922, 1923)
May Department Stores (1932)
National Tea (1932*, 1935)
National Cash Register (1928, 1929)
Oscar Mayer (1932)
J. C. Penney (1932)
Pet Milk (1936, 1938)
Philips Dodge (1921, 1934)
Phillips Petroleum (1932)
Proctor & Gamble (1929)
Pullman (1932)
Radio Corporation of America (1925-1928)
Republic Iron & Steel (1928)
R. J. Reynolds Tobacco (1927)
Sears, Roebuck (1926-1929, 1934)
Standard Oil of Ohio (1927)
Union Carbide & Carbon (1925, 1929, 1931)
United Fruit (1932)
U. S. Gypsum (1932)
U. S. Rubber (1938**)
U. S. Steel (1928, 1929)
Ward Baking (1932)
Westinghouse Electric Manufacturing (1927)
F. W. Woolworth (1922-1925)

(2) Charged against capital surplus:
Addressograph-Multigraph (1932, 1933, 1934***)
American Cyanamid (1929, 1930, 1931)
American Chain (1932)
Babcock & Wilcox (1934)
Beatrice Creamy (1933)
Borden (1935)
Brunswick-Balke-Collender (1931, 1932)
Chrysler (1932)
Continental Can (1932)
Goodyear Tire & Rubber (1932, 1934)
Hart Schaffner & Marx (1935)
Jewel Tea (1925)
L. C. Smith & Corona Typewriters (1936, 1937)
Marland Oil (1930, 1931, 1932)
May Department Stores (1933)
National Tea (1932*)
Ohio Oil (1935)

Table 5 (Continued)

Charging the Reduction of Asset Values against Surplus

Pittsburgh Steel (1937)
Raynols Spring (1930)
Spicer Manufacturing (1932)
Standard Oil of New York (1934)
Standard Oil of Ohio (1931)
Universal Leaf Tobacco (1926)
U. S. Rubber (1938**)

* National Tea (1932) charged the reduction of assets against both capital surplus and earned surplus.

** U. S. Rubber (1938) charged the reduction of tangible fixed assets against earned surplus and the reduction of intangible assets against capital surplus.

*** Addressograph-Multigraph (1934) charged the reduction against the capital surplus, which was transferred from the earned surplus.

FOOTNOTES

[1]See Watts and Zimmerman for analysis of this aspect.

[2]See Vangermeersh for historical study of accounting practices. See also Zeff (1972), and Previts and Merino to get a general view of the history of accounting in the U.S.

[3]See Zeff (1976), and Marple to get a broader picture of asset revaluation.

[4]Schindler, Chap. II.

[5]May, pp. 28, 90ff. Dickinson, p. 80ff.

[6]Some may argue that a valid comparison cannot be made between accounting rules (i.e., norms) existing during nonregulated years and those occurring after the Securities and Exchange Commission was formed. What is important for the immediate discussion, however, is that, even in the nonregulated era, norms did exist, which exercised control over corporate accounting practices, even though such control was not legally enforced. What constitutes a norm might be an agreement among a large number of accountants, a prevailing custom expected to be honored by a fairly large number of corporations, or a kind of regulations backed up by a particular law. The function of the norm in this sense can be analyzed at least with respect to their relation to actual practices.

[7]May, pp. 28, 90ff. American Institute of Accountants (1952), p. 23ff.

[8]May, pp. 9, 24-25. Littleton (1953), p. 107ff. Littleton and Zimmerman (1962), p. 111ff. See, however, Previts and Merino, Chap. 5 for an opposing view which seems more realistic.

[9]May, Chap. IV. Littleton (1953), pp. 90-91.

[10]See Hawkins to avoid misunderstanding that may result from these oversimplified statements.

[11]May, p. 41ff. Blough.

[12]Carey, p. 132ff. Moonitz, pp. 145-146.

[13]May, pp. 43-44.

[14]May, pp. 43-44.

[15]A survey of the annual reports of *Fortune 500* corporations supports the conclusion that the cost-based valuation of fixed assets was normally practiced by the majority of large U. S. corporations in those days. Exceptional cases are classified in Appendix of this paper although a summary of data is omitted for want of space.

[16]Schindler, p. 11.

[17]Fabricant, p. 5.

[18]Fabricant, p. 6.

[19]Fabricant, p. 6. The amount itself by which the asset values are adjusted should not be taken seriously. There were cases where even tangible assets were written off to the nominal value of $1.00 while they were still useful. For example, Gold Dust (1928); May Department Stores (1932).

[20]Fabricant, p. 7.

[21]Fabricant, p. 7.

[22]Fabricant, p. 9.

[23]Selected are all the U. S. industrial concerns whose financial statements are available in the microfilm edition of the annual reports of *Fortune 500* corporations for the period from the early 1920s to the mid-1930s (from Baker Library, Graduate School of Business Administration, Harvard University). Railroads, public utilities, and financial institutions are excluded from the present survey. Companies coming into existence after the mid-1920s—i.e., those in existence only part of the

period of the asset revaluation movement—are also excluded for the sake of convenience.

[24]Schindler, p. 27. Hull. See also "A Symposium on Appreciation" and "Writing Down Fixed Assets and Stated Capital" for further discussions.

[25]Schindler, p. 27. Pinkerton, p. 46. Moss, p. 174ff.

[26]Kohler, p. 214ff.

[27]See the cases of Monongahela West Penn Public Services Co. (1929-1935) and Northern States Power Co. (1924-1925) cited in Healy as well as Titus, *et. al.* v. Piggly Wiggly Corp., 2 Tenn. App. 184 (1925) cited in "Case Studies in Business: The Accounting Disposition of an Increase in Assets Caused by Revaluation," *Harvard Business Review*, Vol. 7, No. 4, 1929. See also Dewing, Book IV, Chap. 7; Jones, Chap. IX.

[28]As to the preference for writing off the goodwill account, see Hatfield, p. 172; Montogomery (1933), p. 740; Kester, pp. 362-363; Conyngton, Bennett and Pinkerton, pp. 876-877; Ripley, pp. 192-194. See also See v. Heppenheimer *et. al.*, 69 N.J. Eq. 36; 61 Atl. 843, 850.

[29]Hatfield, Chap. IV. Couchman, p. 137.

[30]The result of the questionnaire of May 9, 1928, issued by the Committee on the Definition of Earned Surplus of the AIA may be indicative of the general attitude of accountants toward this problem. In response to Question No. 20, "Would it be sound accounting procedure for a corporation to write off goodwill or other intangible assets by charging them off against a surplus arising from the appraisal of the company's fixed properties?,"

(a) Practically all the larger firms of accountants answered in the affirmative
(b) A bare majority (52%) of the AIA members answered in the negative
(c) A large majority (76%) of the American Association of University Instructors in Accounting (subsequently reorganized into American Accounting Association) members answered in the negative.

See Kohler, p. 214ff.

[31]Trumbull, p. 599ff. Jones, Chap. IX. U. S. Steel's accounting practice may have been related to the attempted reorganization of the company, which went on for almost 10 years after the mid-1920s (see Chandler, p. 361).

[32]As to the relation between the goodwill value and the value of common stock issued at the organization of the corporation, see Montogomery (1925), p. 549.

[33]See also the case of American Locomotive Co. (1931) cited in Hosmer, and the case of Associate Gas & Electric Co. submitted to the SEC decision (11 SEC 975, 1942).

[34]See also Carter, p. 10; National Association of Cost Accountants, p. 1039; Montogomery (1934), p. 415.

[35]Among these limited number of cases are: Brunswick-Balke-Collender (1931, 1932); Continental Oil (1930, 1931, 1932); Simmons (1932); St. Regis Paper (1936). In the Simmons case of 1932 and the St. Regis case of 1936, the earned surplus account had a deficit before the asset values were reduced.

[36]American Institute of Accountants (1939). Securities and Exchange Commission. Schindler.

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THE EARLY DEBATE ON FINANCIAL AND PHYSICAL CAPITAL

Abstract: This paper evidences the contribution of leading writers in the early 1900s to the vexed problems associated with capital maintenance and periodic income determination. It reveals that the issues which were then being discussed (such as the treatment of holding gains) remain as unresolved problems for today's accountancy practitioners.

The concept of capital is central to the determination of periodic income, irrespective of whether the latter is based on the principles of economics or accounting. Without adequate and consistent definitions and computations of capital at succeeding points of time, there can be no credible income data. This has been well evidenced in the recent professional prescriptions of current cost accounting for external financial reporting purposes.[1] These pronouncements have focused attention on the need to understand the concept of capital which underlies each specific income proposal. In particular, they have identified the existence in practice of two alternative capital maintenance approaches—that is, maintenance based on capital defined in terms either of a specific monetary attribute such as the money unit or the purchasing power unit (hereafter termed *financial* capital); or a specific attribute of the reporting entity's physical asset structure such as its physical units or operating capacity (hereafter termed *physical* capital).

The distinction between the two concepts of capital (and their related maintenance functions) is not a new one. Sweeney (1933a), for example, presented one of the best analyses in this area, and his work should be required reading for interested students of capital definition and measurement. However, despite its antecedents, the distinction has provoked a debate in the late 1970s and early 1980s concerning the utility and relevance of the financial and physical approaches for purposes of external financial reporting. Indeed, a recent international symposium has been held on the sub-

This paper has benefited considerably from the comments of its reviewers.

ject.[2] Contributions to this meeting discussed the relative merits of financial capital and physical capital and, in so doing, identified significant problem areas for the producer of current cost accounting information which utilises a physical capital maintenance approach—for example, the needs of external report users, the accounting treatment of holding gains, coping with changing asset structures and technologies, accounting for price decreases as well as increases, the feasibility of using current values in financial reports, and alternatives to current cost accounting.

It should not be surprising to find these matters debated in the 1980s. After all, if current cost accounting contains these problems, it is only right and proper to discuss them with a view to the establishment of current cost accounting as a credible system of financial reporting. However, it is of some concern to find the discussion taking place *ex post* the prescription of current cost accounting. What is even more disturbing is the discovery that the same issues were identified and debated in the early 1900s. Indeed, in 1930,[3] a symposium on asset value appreciation covered much of the ground dealt with in the aforementioned one in 1981. And resolution of the issues identified at that time is no further forward despite the passage of 50 years of thought and experience.

Not only was the debate about financial capital and physical capital raised in the early 1900s, it was also fully documented in the relevant accountancy literature, and contributed to by some of the leading academics and practitioners of the day. It was largely of United States origin, considerably influenced by German thinking, and can be attributed to a major concern about the purpose and role of both appreciation and depreciation of fixed assets.[4] The lack of legal and accounting guidance in these matters in the last quarter of the nineteenth century and first quarter of the twentieth century were also catalysts for the debate. According to Brief (1976), revaluation of fixed assets was common, depreciation accounting was relatively undeveloped, the realisation principle was not fully recognised prior to World War I, and lawyers did not appear to wish to pronounce on business practices and thereby give guidance to accountants.

The interest in the United States debate petered out in the 1940s largely due to the impact of World War II; was resumed at a very modest level in the 1950s and 1960s (when relatively low rates of inflation prevailed); and burst into full prominence in the 1970s with double digit inflation. It has not diminished since despite the practical implementation of current cost accounting in several English-

speaking countries.[5] It therefore appears pertinent to go back in time to rediscover the early contributions to the debate—first, to acknowledge their significance in the development of financial reporting thought; secondly, to identify the main issues with which they were concerned and to compare them, where relevant, with the issues of today; and, thirdly, to speculate from such an analysis on the reasons why no apparent progress has been achieved in the United States and, to a lesser extent, in the United Kingdom in the resolution of the capital debate. In this way, it is hoped that lessons from the past may be learned in order to avoid lack of progress in the future.

Early Recognition of the Problem

It can be argued that the earliest accounting practitioners of the modern era recognised the need to maintain the physical asset structure of the reporting entity, and to implement methods of financial accounting which could aid this process. Brief (1976) provides a reminder that, prior to 1875, the practice of replacement accounting (that is, charging the cost of fixed asset replacement against sales revenue in arriving at periodic income) was fairly widespread, and was adopted in place of conventional depreciation policies. Income was therefore determined on a quasi-replacement cost basis with the balance sheet containing outdated and undepreciated historic costs. The replacement costs used for income purposes, however, were those occurring at the time of replacement rather than at the time of reporting. The practice was apparently limited to replaced fixed assets, and its use can be confirmed in the United States railway industry which was governed by the regulations of the Interstate Commerce Commission (which specified the use of replacement accounting).[6]

There was also evidence of revaluation of fixed assets prior to 1875, and an awareness of the danger of distributing any resulting unrealised holding gains.[7] But, gradually, a more conservative approach to accounting was adopted, and historical cost depreciation practices to maintain invested money capital were implemented.[8] Also, at about the same time, a further accounting practice was being advocated—that is, the *appropriation* of amounts from income to reserve (in excess of historical cost depreciation) in order to aid the funding of fixed asset replacements.[9]

Thus, although the conventional depreciation practices of the time may have been relatively primitive (that is, appropriations of income rather than cost allocations), there was an obvious aware-

ness by certain leading accountants of the day that adequate accounting could aid the function of *financing* the reporting entity's physical asset structure. However, a contrary view existed which, despite recognising the potential financial problem of inadequate depreciation to fund fixed asset replacement, preferred to depreciate historical costs and not to recognise value changes, either because of the danger of overvaluation when prices eventually fell after a period of rising[10] or because the entity was a going concern which was unaffected financially by the recognition of unrealised holding gains—these ultimately being realised at some future date.[11]

The latter historical cost school of thought appeared to prefer the financial capital approach of maintaining the original invested capital. The alternative approaches of replacement accounting and reserve accounting indicated a movement towards physical capital maintenance without abandoning the traditional historical cost system. In addition, a further school of thought was to develop in the early 1920s—balance sheet revaluations being encouraged (usually based on replacement costs) to provide more realistic descriptions of entity financial position, but with the income statement recommended to continue on a historical cost basis, thus not reflecting a maintenance of the revalued position.[12] In this way, realised holding gains were included in the income statement and unrealised holding gains were put to reserve. By contrast, replacement accounting and reserve accounting effectively excluded a certain proportion of realised holding gains from income, and historical cost accounting failed to recognise unrealised holding gains.

These different contributions mark a useful starting point for the debate on capital and capital maintenance—particularly in the 1920s and 1930s.[13] They reveal the first major problem facing accountants in this area—that is, the difficulty of separating the *managerial* need to fund the replacement of assets underlying invested capital from the *accounting* need to maintain that capital. This particular problem was first made explicit in the literature by Saliers (1913) but is also to be found in the work of others throughout the 1920s and 1930s—including Jackson (1921); Scott (1929); Paton (1934); and Crandell (1935). At times, it is somewhat difficult to distinguish the two functions in the recommendations of these writers, and this is perhaps best evidenced in the words of the accountants concerned.

Bauer produced the following major statement of the problem:[14]

> The question therefore arises, is the purpose of management merely to maintain investment in terms of dollars, and to show current costs and profits accordingly, or is it really

> to keep up the plant and equipment and to maintain the physical productivity of the property?

He obviously identified the managerial task of asset replacement, and linked it with the accounting process of capital maintenance. He therefore appeared to see no need to separate the two functions, and was quite clear in his accounting answer to the managerial question posed—the expected cost of replacement and not historical cost should be matched against sales revenue. He went even further than modern theorists in this respect, appearing to advocate the use of *future* rather than current replacements costs.

Jackson asked the same question in a much briefer manner:[15]

> Is the purpose of the depreciation charge to maintain the capital investment or is it to replace the physical plant?

It should be noted that the question was asked solely in connection with fixed asset replacement, and this appeared to be the major preoccupation of these early accounting theorists (working capital being usually ignored). Jackson argued that historical cost was the true cost for accounting purposes (without defining the term "true"), and advocated financial capital maintenance based on historical costs. However, as the above quotation reveals, accounting and managing are completely merged in the question asked.

Rorem was much less confused but arguably no less confusing, fully recognising the alternative physical capital basis for accounting:[16]

> The purpose of writing the appreciated value into the cost of manufacturing is entirely independent of any accounting procedure for insuring the maintenance of physical capital. It is true, that physical capital must be maintained if an enterprise is to continue business operations. It is true, however, that an enterprise must be considered unprofitable unless its accounts are so handled as to deduct provision for capital maintenance as a cost of business operations. The charge for depreciation is a writing off of values which have already appeared; it is in no sense a provision for expenses which are yet to be incurred.

Rorem then argued for the use of replacement costs for depreciation purposes, criticising the alternative policy of transfers from income to reserve in addition to historical cost depreciation. He undoubtedly regarded replacement cost accounting as a means of determining the profitability of the entity (the primary aim) while

maintaining physical capital (the secondary aim). His paper clearly and logically makes the case for accounting for the physical structure of the entity, separate from the issue of financially managing asset replacements.

The then radical proposals of Rorem contrasted with the continuing support of leading accountants for historical cost accounting supplemented with income appropriations to reserve. Thomas (1916) had suggested the latter approach to preserve the financial solvency of the entity; Rastall (1920) preferred to reserve prudently to avoid overdepreciation; Jackson (1920) believed the use of historical cost depreciation reflected the "privilege" of using low cost equipment in higher cost times, but thought that additional amounts should be reserved from income; and other similar contributions come from Martin (1927), Scott (1929) and Daniels (1933). Each of these writers appeared to support a financial capital-based approach to income accounting, capital being measured in terms of aggregations of money units comprising historical costs. Some recognised the need also to provide separately for a funding of asset replacement at higher costs by reserve accounting. This approach was well described by Martin:[17]

> Such a reserve has the advantage of keeping the attention of the management and the stockholders centered on the real significance of increases in asset values. If they are to continue the business with the physical capital intact they must provide sufficient net earnings to make possible an increase in the money statement of net worth equal to the difference between original cost and replacement cost.

The above quotation is a useful way of summarising the somewhat confused state of thinking about income accounting and capital maintenance in the 1920s particularly. Financial capital recognition (for example, the money statement of net worth) was a popular approach, coupled with a growing awareness of the need to fund asset replacement and aid this by some form of accounting (for example, transfers to reserve). Managing and preserving the physical structure of the reporting entity was therefore a fairly well-known idea; accounting for its maintenance tended to be relatively crude. Also, it must be noted that the physical structure was normally interpreted in a limited way to nonmonetary fixed assets — inventory and other assets typically being ignored.

Thus, there appeared to be some confusion in the minds of writers between the financial mangement function of replacing entity

assets, and the financial accounting function of reporting on entity profitability and financial position.[18] It would therefore seem relevant to pursue further the early arguments for accounting to aid management or preserve the physical assets and capital of the entity. To do so, may provide clues as to why the writers concerned had difficulty distinguishing between asset management and capital accounting. To do so is important, for the common cry nowadays from companies is—why do we need current cost accounting when we manage effectively with regard to price changes? As the chairman of one United Kingdom company has put it:[19]

> From a management point of view we have all the information we require in our monthly accounting statements to ensure that the full effects of inflation are taken into account in arriving at management decisions and . . . the attached accounts do not provide our management with any additional useful information. . . .

The present United Kingdom current cost accounting provision[20] confuses internal and external accounting needs in its statement of aims, and provides no answer to the above statement.

Managerial Needs and Capital Maintenance

The replacement of assets appeared to be regarded at the end of the nineteenth century as essentially a matter for good management rather than formal accounting procedures.[21] According to Brief (1976), for example, the question of whether or not to provide for fixed asset depreciation was left very much in the hands of management and the internal rules and regulations of the reporting entity—courts of law gave little or no guidance and the accountancy profession was in its infancy. Thus, the accounting emphasis for income determination purposes arguably included some notion of financial capital maintenance in a great many cases, depreciation procedures being largely ignored and revaluations being fairly common.

This picture of self-regulation undoubtedly must have influenced writers in the 1920s and 1930s who were concerned to ensure that management had sufficient relevant information with which to make adequate funding arrangements for fixed asset replacements. Not unexpectedly, writings occasionally merged the separate issues of internal management information systems with external financial reporting.[22] It is therefore important to read them with care.

The use of replacement accounting and reserve accounting procedures appear to have been devices for reflecting the funding of fixed asset replacements (particularly) without interfering with the then traditional practices of accounting based on historical cost measurements and financial capital maintenance (of original invested capital). However, in the first decades of the twentieth century, a number of writers began to advocate the use of replacement costs for internal management information purposes. Paton (1918), for example, argued that managers (and shareholders) needed replacement cost data—to aid the making of management decisions (presumably including asset replacement), and to let shareholders know their rights (presumably referring to the need to disclose total income, including unrealised holding gains).

By 1920, however, Paton (1920) was arguing for the use of replacement cost accounting for management only in order to aid it in preserving physical assets and productive capacity. Canning (1929), while not recommending the use of replacement costs generally for external reporting, believed they might be useful to management for purposes of deciding which goods to buy in the future, and for determining selling prices. Scott (1929), Schmidt (1930), and Wasserman (1931) held relatively similar views on the managerial relevance of replacement costs.

Each of these contributors to the United States literature therefore appears to have had a clear idea of the utility of replacement cost accounting for management purposes, particularly as an aid to funding asset replacement. Some of them also supported its use for external financial reporting, but to a far lesser extent. Occasionally, their recommendations were unclear as to the distinction between internal and external reporting. But it can be concluded that they were reasonably of a single mind with regard to one matter—they did not believe it was essential to account formally for the maintenance of physical capital in order to preserve the physical asset structure of the reporting entity. Instead, they felt that the latter could be aided by reserve transfers of financial capital-based income; and also by an adequate determination of selling prices to be charged to customers. In addition, it should be noted that replacement cost accounting was originally devised as a system of internal management accounting—particular by Paton (1920).

The above comments contrast sharply with the ideas of the Dutch theorist, Limperg (1964). Throughout the 1920s and 1930s, he argued for the use of replacement value-based accounting to aid management in the buying and selling activities associated with its prod-

ucts. He defined replacement value as a measure of the sacrifice by the producer when selling his products or using his assets (Limperg's replacement value referred only to replaceable assets, and was the cost at the time of sale or use of what was technically necessary and economically unavoidable to replace the asset concerned). In addition, he argued for the use of replacement value to determine selling prices. However, he did appear to have a firm view regarding physical capital maintenance (without specifically defining or using the term). His definition of income was essentially a physical capital-based one—holding gains being taken to reserve, and holding losses being treated in the same way until the reserve containing aggregate holding gains was exhausted. Any holding losses thereafter were to be written off against income.

This concept of preserving what Limperg described as the "source of income" was something which he saw as being useful both for internal *and* external reporting purposes—to aid the analysis of business operations, provide sufficient funds to finance asset replacements, and to prevent over-consumption. He felt that, by such a process of capital maintenance, income could be determined "without ambiguity and with certitude"—presumably for all its users. Nevertheless, as with that of Paton in the United States, Limperg's system was devised essentially as one of management accounting—although, undoubtedly, he also felt that external interests such as investors could benefit considerably from the reporting of such management-orientated information. Continuing evidence of this belief is provided by the limited but important use of replacement valuing accounting for external reporting by certain Dutch companies.

Replacement Costs and Selling Prices

Several writers in the 1920s and 1930s made strong statements on the place of replacement costs in the managerial determination of selling prices of goods and services to customers. Paton (1922), in an all too rare paper on accounting for current assets, claimed that replacement cost was the only price relevant to management as it governed the selling price of a good or service in the long-term. Rorem (1929), too, argued that replacement cost accounting was relevant to management because it represented the minimum value established by competition and to be paid when looking forward to the eventual resale of the good or service concerned. For this reason, Rorem went on to argue for the use of replacement costs in external reports because he regarded the difference be-

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tween replacement cost and historical cost as the provision for capital maintenance which should be treated as a *cost* of business operations. Daniels (1933) also felt that the customer should be paying for the replacement cost of goods in the long-run (in this case, fixed assets), and thus concluded that the entity's pricing policy should result in income which was sufficient to replace fixed assets at higher costs.[23] He believed the function of depreciation, however, was not to provide for physical capital maintenance (recommending instead the funding of replacement by prudent reserving).

The idea of funding asset replacement by passing on increasing costs to the entity's customers, and thereby hopefully preserving its physical structure, was not universally accepted by the writers of the day. Jackson (1920) thought it unfair to ask customers to pay for anything other than the original cost of fixed assets in the case of public utilities, but thought it fair to charge replacement cost to private enterprise customers (so long as the realised difference between replacement cost and historical cost was taken to reserve). The 1930 Symposium on Appreciation[24] produced an even stronger position. It was argued that only historical costs should be passed on to the consumer because of the danger of being priced out of a competitive market, and that what was really needed in this area was good management rather than amendments to traditional accounting. Littleton (1936) argued along similar lines.

Thus, from these writings, it can be concluded that there was a recognition that management had to make decisions concerning the entity's asset structure, and that financial information was needed for this purpose. Some writers argued for using replacement costs, and others for historical costs. But it was also apparent that there was no general consensus that the use of the former data in external financial reports could provide a more informed way of describing how the physical structure of the entity had been maintained by management. In other words, there appeared to be a growing awareness in the 1920s and 1930s of the need to use replacement costs (*ex ante*) for management decisions, and the possibility of using them (*ex post*) for external reporting—in both cases, the aim being to reflect the need to maintain the physical asset structure of the entity; the first to demonstrate how to provide sufficient funds to finance replacement and the second to report on the maintenance of the capital representing the replaced and replaceable assets. The common factor in all this seemed to be the physical assets of the entity, and this brought into question the purposes of external financial reporting—what was to be reported and to whom was it to be reported?

Aims and Uses

The previous two sections have attempted to show that the early accounting theorists were concerned with asset replacement and the management of financial funds to do so. This inevitably raised the question of whether or not these matters should be the subject of a formal accounting in external financial reports. In other words, should external reports reflect such matters as the maintenance of the physical capital of the entity?

Views varied from one extreme to another. Paton (1918) stated that the physical nature of an asset was only important in terms of its influence on value. Bauer (1919) argued that external accounting should reflect the maintenance of the physical productivity of the assets. Jackson (1921) believed that maintenance of original invested costs was essential. Sweeney (1927 and 1930) complained that maintenance of physical capital did not maintain the general purchasing power of capital which gave the entity command over goods and services. And Daniels (1933) and Littleton (1936) felt that the job of accounting was to allocate past costs and not to value. Therefore, some were for financial capital maintenance (in money value or purchasing power terms) and others favoured physical capital maintenance. Few statements were made by these writers as to why these approaches should be the preferred ones from the point of view of the report users.

Daines (1929), for example, wrote of the objectives of accounting (and of current values) mainly in relation to the dividend decision. However, he also felt that users other than investors should be recognised—but made little effort to specify who these users were. Krebs (1930), too, wrote of unspecified users in relation to accounting for asset appreciation but without amplifying the matter. Littleton (1936) preferred to concentrate on uses rather than users, even arguing against the use of financial accounting data for dividends, taxation, and selling price determination.

Other writers clearly identified investors as the main external user group to which income and capital issues could be related—Paton (1920), when arguing for physical capital maintenance, sympathised with reporting on this for management decision purposes only, and not for investors (holding gains not being treated as distributable income); Schmidt (1930) made a similar argument, and defined distributable income as that remaining after maintaining business assets; and in a later paper, Schmidt (1931) identified distributable income more directly as current operating profit (that is, after full provision for the replacement cost of assets consumed). The Dutch

position, too, as expressed by Limperg (1964), despite its management accounting basis, also appeared to concentrate on the owner/investor as the main external user—replacement value arguments being related to the determination of income for consumption or dividend decisions. All in all, however, the coverage of report users and uses by writers advocating change to traditional practice was poor, and resulted in a significant gap in the financial versus physical capital debate. It was at least partly bridged by proponents of the traditional historical cost school of thought.

The Need for Historical Cost Accounting

Although the aims of financial reporting in the 1920s and 1930s may have been poorly covered in the literature, several writers were adamant in their view of the nature of the process—that is, it was an attempt to reflect what had actually happened in the reporting entity rather than to hypothesise about what might have occurred under different circumstances and transactions. Canning (1929), for example, argued strongly along these lines—that historical costs were needed to calculate income on past transactions; costs are history and nothing can be done to change them; and fictitious data should not be introduced into accounting. Gower (1919) pleaded for the maintenance of invested capital and the use of historical costs, so long as a going concern could be assumed for the reporting entity. Jackson (1920) pointed out that historical costs had actually been transacted, and that replacement costs depended on some as yet nonexistent event. Prudence was given as the main reason for historical cost usage by Mather (1928). Littleton (1928 and 1929) believed income only existed when a sale transaction took place, and that it could not therefore be recognised in the form merely of unrealised asset value changes.

Each of these writers argued against the use of replacement costs, and their main reason appeared to be the need to attempt to reflect in financial reports the income which had been realised through sale transactions. They seemed to regard asset value appreciation as purely fictitious data so long as sale or exchange had not taken place. As previously mentioned, the emphasis was on what had happened. But these arguments were made in relation to external financial reports; several of these writers were at pains to point out the utility of replacement cost accounting for purposes of internal management decisions. In addition, they pinpointed a major problem in income and capital accounting which remains a

contemporary issue—that is, whether or not holding gains are income or capital adjustments.

The Nature of Holding Gains

The early accounting theorists in the income and capital debate were fully aware of the nature and possible existence of holding gains and the problems of accounting for them. Initially termed asset appreciation, the holding gain arose as a reporting issue from the 1920s debate concerning asset values, and gained practical importance because of the possibility of distributing unrealised asset value increases as well as realised gains. However, as a result of the debate concerning the maintenance of physical capital generally, and replacement cost depreciation particularly, the holding gain question was extended to include both realised and unrealised elements. It thus reached a status in the early literature akin to that given to it today.

Paton (1918) was one of the earliest writers on holding gains. He called for their inclusion in income (whether realised or unrealised) in order to let shareholders "know their rights," while preventing balance sheets from being understated (he did not expand on these advocations). However, Paton (1920) soon changed his mind regarding the treatment of holding gains as income—he later argued that they were capital adjustments, thus supporting the physical capital approach and treating holding gains as nondistributable. He gave no reasons for this change of viewpoint.

Jackson (1920) also adopted Paton's latter stance—holding gains in his opinion being funds of the entity belonging to future investors, and thus not to be accounted for until realised. Several years went by following this contribution, until Martin (1927) wrote a paper which relied heavily on the earlier work of Paton. He agreed that holding gains should be recognised and treated as capital adjustments in order to keep managers and investors aware of the historical cost profits required to be retained in order to fund the increased cost of replacing assets.

Two years later, Rorem (1929) produced a major paper arguing for the inclusion of at least realised holding gains in income measurements, although he would have required them to be separately disclosed in the income statement. However, he was very unclear as to his views on the distributability of holding gains—he was fully aware of the need to calculate cost of sales and depreciation on a replacement cost basis in order to provide for the maintenance of

physical capital. But he also believed customers should pay for asset replacement increases through increased selling prices. He made no specific comment on distributable income.

Schmidt (1930 and 1931) was more certain in his approach—holding gains are not income; they cannot be distributed because they may not be realised. In this way, he appeared to support physical capital maintenance, although his argument for the use of replacement costs was for management purposes only in the first paper, but appeared to extend to external reports in the second.

Sweeney (1932) also supported the view that holding gains should not be treated as income, being capital adjustments. However, after making general purchasing power adjustments to the holding gain to eliminate the inflationary element, he further advocated the inclusion of real holding gains in the income statement once they had been realised (thus, presumably making them available for distributions).

The Dutch view on the treatment of holdings is evidenced in the writings of Limperg (1964) in the 1920s and 1930s. Consistently, he argued that holding gains were not income and should be taken to a nondistributable reserve. This is compatible with a physical capital maintenance approach. Holding losses were also recommended to be charged against the aforementioned reserve so long as there were gains at its credit to cover them. Thereafter, when the reserve was exhausted, Limperg suggested holding losses should reduce income, thereby implying a switch to financial capital maintenance. No particular reason seems to have been forthcoming to explain this apparent inconsistency in his accounting arguments.

In summary, it can therefore be seen that the problem of the treatment of holding gains was well recognised in the early 1900s, and usually debated within the context of writings on income and capital involving aspects of physical capital maintenance. The consensus appeared to be for the recognition of holding gains, usually not as income (generally) or distributable income (particularly). The main reason for this approach appeared to be the need to ensure the maintenance of physical capital by retaining funds to aid the replacement of assets at higher costs. However, the recognition and accounting treatment of holding gains within the context of capital maintenance raises questions concerning the changing structure of the capital to be maintained. The latter problem was recognised by the early accounting theorists, although not necessarily to the extent of providing a feasible solution.

Changing Asset Structures and Technologies

Several writers on income and capital matters indicated their awareness of the problem of maintaining capital in physical terms when the nature of the underlying asset structure was changing due to related changes in operating activities and/or technologies. Bauer (1919), for example, when discussing the specific example of accounting for the renewal cost of street cars, wrote of the difficulty of doing so when there was a constantly changing structure of physical assets. He presented this as a problem to be faced by accountants without advocating any particular solution. Martin (1927) also recognised the problem—but merely as one which caused instability in asset valuations, thus making accounting for fixed assets a somewhat more hazardous function than would be the case with a situation of stability. But, again, no solution was prescribed or recommended. Limperg (1964), too, offered no answers, merely suggesting (without definition) that the accounting should allow for "economic replacement"—implying non-identical replacement. This is confirmed by his definition of replacement value as the technically necessary and economically unavoidable cost of the asset concerned at the time of its sale or use.

Sweeney (1927) was far more forthright in his comments on the matter. Because he recognised there would be a decline in the business need for certain assets as others became more desirable resources for the reporting entity, he disagreed with accounting for physical capital and its maintenance. Instead, he (then) favoured the alternative financial capital approach of applying general price-level adjustments to historical cost data to "preserve economic power over goods and services." In other words, he presumably felt that the difficulties associated with changing asset structures were such that the reporting accountant should focus his attention on the more easily identified financial features of capital.

Rorem (1929), on the other hand, took a contrary stance—akin to the one associated with contemporary systems of current cost accounting.[25] Totally committed to the idea of reporting in replacement cost terms, he recognised the problem of technological change, and the problem of obtaining replacement costs for accounting in such circumstances. He therefore suggested that the replacement cost used to value a fixed asset should be adjusted to represent equivalent services to those obtained from the existing asset—that is, similar to the contemporary concept of the modern equivalent asset.[26]

This approach would have been wholeheartedly condemned by Canning (1929). A consistent critic of replacement cost accounting because of its reliance on "fictitious data" and "imponderables," he had this to say of asset structure changes:[27]

> Outlay cost is a real thing—a fact. So, too, will replacement cost *become* a real thing when it is incurred. But because prices of equipment fluctuate, because there are always many alternative ways of getting service, that is, many kinds of serving agents that will do a given kind of work, and because the amount and kind of service needed in an enterprise change with its selling, as well as with its buying, opportunities—because of all these extremely elusive matters it requires a good deal of positive evidence to show on which side of experienced cost per unit of service a future unit cost is likely to lie.
>
> We do not often see old establishments duplicated in new ones. Cost of reproduction new less an allowance for depreciation may be a good working rule in damage suits; it is absurd as a sole rule of going-concern valuation.

Not surprisingly, Canning preferred to account for capital in financial terms—ideally, those of present value, but practically in terms of a mixture of historical costs and net realisable values (when these could be obtained directly). He was not alone in this respect. Paton (1934) was by then arguing against the use of replacement costs, admitting that historical cost accounting could be the best basis for mainstream accounting purposes, with replacement costs only being reported as supplementary data. One of his reasons for this radical change of heart was the specialist complexity of fixed assets which meant that replacement in the same form as the original asset was impossible.

Thus, the problem of continually changing asset structures was not unknown in the 1920s and 1930s, although its discussion was limited (mainly to fixed assets), and usually avoided by advocacy of the adoption of some form of financial capital approach for reporting purposes. The support for the latter can be best evidenced by those writings which discussed the need to maintain capital in general purchasing power terms.

General Purchasing Power Accounting

Financial capital maintenance using general purchasing power techniques gained considerable support during the 1920s and 1930s.

Middleditch (1918) provided the impetus for historical cost adjusted data, but paid little direct attention to ideas of capital maintenance (he suggested losses on monetary items—including inventory as such—should be taken to reserve, and implied that purchasing power gains on liabilities should be treated as income). Paton (1918), on the other hand, argued that information ought to reflect specific price changes rather than changes in the general price level.

By 1920, however, Paton's views on general purchasing power accounting were changing.[28] Although favouring replacement cost accounting, he did recognise the difficulty of comparing data at different points of time for income purposes when the general price level was changing. Thus he argued that replacement cost figures should only be used for management purposes. The idea of general purchasing power accounting, however, was not developed further until the work of Sweeney was published in the late 1920s. Indeed, Canning (1929) stated that, although accountants would prefer such a system of accounting, they did not use it because of the lack of data available in time to make the adjustments (that is, presumably general price indices took a considerable time to prepare and publish at that time).

Nevertheless, the work of Sweeney had a considerable influence on income measurement—even if this was not immediate. He did not agree with the maintenance of physical capital in replacement cost accounting and, instead, preferred the maintenance of real capital in order to preserve the reporting entity's economic power over goods and services.[29] In this way, he would adjust historical costs for the general movement in prices, maintaining the outward form of capital (general command over goods) rather than the inner substance (physical assets).[30] By 1931, however, although still roundly condemning the use of pure historical cost and replacement cost systems, he argued at least that the latter was better than the former.[31]

In 1932, his views regarding replacement costs had changed somewhat.[32] Although his main system was based on general purchasing power, he also recommended the introduction of replacement cost changes in the balance sheet on top of the general price level-adjusted data—the total holding gains being taken to reserve until realised when the real element was transferred to income. Thus, he preferred to use a replacement cost system which, when combined with general price-level changes, effectively maintained financial capital—only allowing holding gains to be treated as in-

come when realised, and only to the extent of real price changes. This combined approach was also favoured by Schmidt (1931), although he only regarded speculative holding gains as income.

By 1933, Sweeney (1933b) regarded all realised and unrealised gains as income, advocating their separation in the income statement. These ideas were developed within the context of a combined replacement cost and general price-level system. Monetary gains and losses appeared in the income statement [a point disagreed with by Jones (1935)], but no calculation was made of liability gains or losses of purchasing power. Fixed asset depreciation was measured in general purchasing power terms, thus emphasizing the financial capital approach. A summation of his ideas appeared in two further papers.[33]

The work of Sweeney in the 1920s and 1930s did much to establish a case for adopting an accounting approach which depended on financial capital maintenance. Indeed, he revealed clearly that it was perfectly possible to do this *and* to use replacement costs—that is, financial capital maintenance and replacement cost accounting are not incompatible.[34] This last point is something which remains a matter of confusion for contemporary accountants (for example, the attempt to maintain physical capital and financial capital in the provisions of the most recent current cost accounting recommendations).[35]

Little Support for Sale Values

Sweeney's relatively lone effort in the 1920s and 1930s to promote a financial capital maintenance approach (using general price changes) indicates a possible reluctance to move away from the traditional historical cost-based model. There was also a reluctance to adopt an alternative financial capital strategy which has been consistently and vigorously advocated in more recent times[36]—that is, the use of allocation-free sale values. This reluctance was a deep-seated one, reflecting an unwillingness to account for income before it was realised and a contrary support for the eventual accounting for income as and when it is realised by the entity as a going concern.[37] Paton (1918) was against the use of sale values, believing that to do so was to anticipate income (in a way which he also believed replacement costs did not do—a point which confirms that he regarded holding gains from replacement costs as potential income at that time).

By 1929, however, there were signs of some support for the idea of using sale values for external financial reporting—but only in

limited circumstances. Rorem (1929) advocated the use of replacement costs but, following a "value to the business" rule akin to that seen in most contemporary systems of current cost accounting, suggested the use of net realisable value in circumstances when the latter had fallen below replacement cost. Daines (1929), on the other hand, indicated sale values might be of use in financial reports, but only to creditors interested in liquidity matters. And Canning (1929) advocated the use of sale values for reporting on assets where valuations could be applied directly to the objects concerned —for example, as in inventory for resale [as did MacNeal (1970)]. In fact, so far as these direct valuations were concerned, he indicated merit in reporting historical costs, replacement costs and sale values. His reasons for this approach were less than clear.

Limperg (1964), on the other hand, advocated the occasional use of net realisable values for reporting purposes. His valuation rule was the lower of replacement value and net realisable value, thereby reflecting the sacrifice of the owner of the assets concerned when he sold or used the latter. In addition, he argued that net realisable value, when compared with replacement value, should be the higher of the immediate liquidation value and the sale value on an orderly liquidation. Limperg therefore represented one of the few writers on accounting in the 1920s and 1930s who attempted to use sale values within a mixed value system—somewhat similar to that evidenced in present-day current cost accounting systems.[38]

The above brief commentary reflects a limited attention paid to net realisable value accounting in 1920s and 1930s, a situation not unlike that of today. It meant that the capital debate centered around historical costs, replacement costs and purchasing power units.

Dealing with Price Decreases

A further problem created by replacement cost accounting and physical capital maintenance is the treatment of price decreases. To treat them in a similar way to price increases results in increasing operating income and decreasing financial capital (due to the setting off of holding losses against reserves).[39] Arguably, this problem can be resolved by reverting to a financial capital system when prices are falling[40] but this does not cater for a situation in which some prices are rising and some falling. Brief (1970), when reviewing late nineteenth century contributions to the income and capital debate, indicated that these early writers were aware of the problem of falling prices, and this is clear from the writings of Best (1885)

and Cooper (1888)—capital losses being written off against income for dividend purposes. This awareness was also to be seen in the work of later writers.

Knight (1908), for example, advocated depreciation based on original cost because of the danger of fixed asset values falling. Rastall (1920) pointed out the danger of overstating income by underdepreciating when prices fell. And Sweeney (1930) complained that, if a physical capital maintenance approach were adopted when prices were falling, then the reporting entity's general command over goods would not be maintained (that is, its financial capital in terms of generalised purchasing power would diminish) and, if prices continued to fall, would reduce capital towards zero. This would be no problem so long as the reporting entity continued to invest in and replace assets subject to price decreases. But, as Sweeney indicated, it creates a problem when the entity wishes to diversify into assets subject to different price movements. On the other hand, Daniels (1933) took a pragmatic stance by suggesting that historical cost depreciation policies should be applied in order to allow for both replacement cost increases and decreases. McCowen (1937) felt that a physical capital system, using replacement costs, should be applied irrespective of prices increasing or decreasing—replacement cost accounting reflecting, in his view, how much the reporting entity's selling prices must be adjusted upwards or downwards. Schmidt (1931) also took this approach of consistently accounting for replacement costs, recommending that operating income be distributable (that is, before deduction of holding losses) on the grounds that the entity did not need such income in order to maintain its operations.[41]

Thus, the 1920s and 1930s witnessed three alternative treatments for falling prices: (1) either revert from a physical capital to a financial capital approach; (2) continue to use original costs as a financial capital basis; or (3) consistently apply physical capital accounting irrespective of the direction of price movements. As the problem has not been specifically covered in the United Kingdom current cost accounting provisions,[42] it can be reasonably stated that the early writings were sensitive to a problem which remains today.

Summary and Conclusions

There are many more topics which were debated in the 1920s and 1930s, and which could be analysed in this paper. For example, Sweeney (1931) recommended that all expenses deducted in arriving at income should be in replacement cost terms if such account-

ing was adopted; several writers[43] commented on the problem of using current or future replacement costs for assets yet to be replaced; and the feasibility of finding suitable replacement costs was commented on by at least one writer.[44] Space prevents such issues being discussed further, but the following general conclusions can be drawn from the previous sections: first, the early writers were fully aware of the distinction between financial and physical capital and capital maintenance (some favouring one or the other); secondly, much of the discussion centered around the possible use of replacement costs as an alternative to historical cost accounting, although general purchasing power accounting and net realisable value accounting were discussed also; thirdly, there was a confusion in the minds of early writers about the role of external financial reporting, many of the proposals inadequately distinguishing external reporting from internal reporting and asset management; fourthly, the previous point may have arisen because of the relative brevity and lack of detail in external financial reports of the time; fifthly, replacement cost accounting was viewed not merely as a means of maintaining physical capital but also as a means of adequately determining selling prices in times of changing input prices; sixthly, a considerable amount of the debate in the 1920s and 1930s concerned the aims and uses of financial reports; seventhly, the need for historical cost accounting was debated rather than swept aside; and, finally, some of the problems of replacement cost accounting were not only revealed but analysed in detail—for example, holding gains, changing asset structures and technologies, and price decreases.

It would be wrong to suggest that the early writers on income and capital cited in this paper either adequately recognised and analysed the problems or presented credible solutions. Certainly, there appeared to be little general acceptance by professional accountants and accountancy bodies of the ideas proposed. However, it is disturbing to find the same problems being, at best, debated and, at worst, ignored today in the various alternatives to historical cost accounting. Accountants thus appear to perpetuate problems rather than resolve them, and it is interesting to hypothesise some reasons for this, using the foregoing commentary as a basis:

1. The issue of income and capital measurement is a complex one, involving many problems, and reflecting numerous schools of thought. If a particular system is to be recommended to accountancy practitioners, it is essential that there is an adequate and prior discussion of all relevant matters. The present-day debate over cur-

rent cost accounting has been fragmented, hasty, and lacking in sustained debate involving all interested parties (including users and preparers).

2. The early contributions to the debate reveal, in the complexities of the various arguments, the need to present the major viewpoint in full in order that accountants, businessmen and others are fully apprised of all the issues involved. Current cost accounting proposals have failed to do this, concentrating solely on a limited argument to support them.

3. The reasons for the benefits of a particular reporting system must be fully explained and understood if it is to succeed. The early writers tended to concentrate more on technical matters and less on aims and purposes, and thus major confusions arose over the recommendations. Current cost accounting has suffered a similar fate today.

4. Changing circumstances can alter viewpoints and stances, and the early writers (particularly Paton) were prepared to adapt. This is difficult to handle in a complex area but systems such as current cost accounting must be allowed to change as circumstances dictate. Changing views must never be used as reasons for not changing or for unnecessary doubt regarding the credibility of the system concerned.

5. Finally, given all the problems of attempting to account and report on physical capital, it is of concern to see no attempt made in the early 1900s (or today) to discuss whether or not these problems outweigh the benefits to be gained from an accounting system based on the maintenance of physical capital. The difficulties of defining physical capital, and its changing nature over time, make it a concept with considerable practical problems regarding implementation. The early debate, and the present unrest with it in countries such as the United Kingdom, indicate it may remain a matter of conceptual rather than practical significance.

FOOTNOTES

[1]For example, Accounting Standards Committee, 1980a. Australian Society of Accountants and The Institute of Chartered Accountants in Australia, 1976, 1978. Financial Accounting Standards Board, 1979.

[2]Lemke and Sterling, 1982.

[3]Symposium, 1930.

[4]There was also at the same time a considerable Dutch contribution based on the work of Limperg, 1964. However, because of its inaccessibility, and isolation from the English-speaking literature, it is difficult to integrate it in this paper beyond making relevant mention of Limperg's theory at particular points. The sources for these comments have been Mey, 1966 and Burgert, 1972.

[5]It is interesting to note that the accounting theory of Limperg, 1964, which was developed in the 1920s and 1930s, influenced his students sufficiently to go beyond the debating stage, and to implement a system of accounting containing several features of present-day current cost practice—see, for example, Goudeket, 1960, and Burgert, 1972.

[6]Stockwell, 1909.

[7]Brief, 1976.

[8]Brief, 1976.

[9]Dickinson, 1904. Cole, 1908. Sells, 1908.

[10]Knight, 1908.

[11]Gower, 1919.

[12]Paton, 1920, 1922. Rastall, 1920. Moss, 1923.

[13]By contrast the Dutch debate commenced at about the same time for a somewhat different reason. Limperg, 1964, was concerned about changes in thinking about the economic approach to valuation (particularly regarding business decisions based on marginal utility), and preferred an accounting system for management based on the producer. Thus, economic arguments to aid management accounting practice were the basis for the Dutch debate, rather than the more pragmatic accounting issue of how best to account for fixed assets in practice.

[14]Bauer, 1919, p. 414.

[15]Jackson, 1921, p. 83.

[16]Rorem, 1929, pp. 172-173.

[17]Martin, 1927, p. 123.

[18]This was not the case with Limperg, 1964. His writings make it quite clear that he saw his system of accounting based on replacement values (using a valuation rule of the lower of replacement value and net realisable value) as being primarily for management accounting purposes but also of considerable use for financial accounting. He did not appear to regard it as essential to separate the two functions.

[19]Wedgewood, 1981, p. 3.

[20]Accounting Standards Committee, 1980a.

[21]Litherland, 1951.

[22]This is specially true of the work of Limperg, 1964.

[23]It should be noted that these views are compatible with those of Limperg, 1964, who believed that, on average, the use of replacement costs to determine selling prices would generate sufficient cash to fund asset replacements.

[24]Symposium, 1930.

[25]Accounting Standards Committee, 1980a.

[26]Accounting Standards Committee, 1980b.

[27]Canning, 1929, pp. 254-255.

[28]Paton, 1920.

[29]Sweeney, 1927.

[30]Sweeney, 1930.

[31]Sweeney, 1931.

[32]Sweeney, 1932.

[33]Sweeney, 1934, 1935.

[34]But his was a lone view—arguably one of the leading replacement cost advocates of the time, Limperg, 1964, made no attempt to account for general price-level changes.

[35]Accounting Standards Committee, 1980a.

[36]Chambers, 1966. Sterling, 1970.

[37]Guthrie, 1883. Best, 1885.

[38]For example, Accounting Standards Committee, 1980a.

[39]See Sterling, 1982.

[40]See Lee, 1980. Attention should also be paid to the work of Limperg, 1964, in this respect. He recommended holding losses should be written off against income when they exceeded aggregate holding gains taken to reserve.

[41]Note should be taken, however, of the aforementioned objection of Sweeney.

[42]Accounting Standards Committee, 1980a.

[43]Bauer, 1919. Scott, 1929. Paton, 1932. Crandell, 1935.

[44]Rorem, 1929.

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SEARCHING FOR ACCOUNTING PARADIGMS

Abstract: The paper seeks to explore the origins of the paradigm on which modern accounting rests. It suggests that explanations which look to the relative concentration and dilution of the central political power may be relevant to discussing paradigms which were available in the past and may be available in the future.

The historical experience affords useful insights into current problems in three significant ways. First, it reveals the uniqueness which characterizes man's efforts to solve the difficulties with which he is confronted. This uniqueness is a synthesis of complex behavioral elements uneasily constrained by closely reasoned judgment. Second, it illustrates the ephemeral nature of those human problems which stem from the insecurity attaching to life, from the shortages created by human needs and from the mismanagement often evidenced in human affairs. Third, it identifies the accumulation of knowledge as the significant factor by which successive generations may be differentiated.

The historical experience is significant because it offers paradigms which are not only useful, but which enshrine fundamental convictions held by mankind. In this sense, it has particular importance in enlarging the perception of the current crisis in accounting. This crisis is not simply a prosaic inability to deal with a host of purely technical problems, such as inflation and valuation, but more fundamentally relates to the absence of a stable definition of accounting and a supportive theory of accounting.

The purpose of this paper is to explore the historical experience from which modern accounting has emerged, and to identify the central elements of the paradigm on which it is founded. It will be suggested that this analysis may be helpful in removing some misconceptions in the debate about current accounting developments.

Paradigm and Crisis

An analysis of the historical process by which the extant accounting paradigm has been forged reveals neither constancy of belief

nor linearity of development.[1] Such continuity and association of ideas as may be established lie in a wider framework found in the history of ideas in which accounting has its true origin.[2] A historical analysis reveals the manner in which successive generations identified the nature of their problems and solved them with such instruments as they possessed. In this respect, it affords a balanced judgment of their relative ingenuity and a rich store of experience. It is noteworthy that, though handicapped by more imperfect tools of analysis, some earlier generations than our own developed apparently more profound perceptions. Thus, whereas the Romans had an imperfect concept of capital, and had no rigorous means of distinguishing capital and revenue, they were aware already of the need to incorporate some cost of capital in the definition of current expenditure.[3] This insight is not reflected in modern financial accounting theory.

The emphasis which accounting historians have placed on the supposed importance of double-entry bookkeeping, and the pedagogic authority of its methodology which is enshrined in textbooks, have endowed the extant paradigm with rigidity and limited usefulness. However, the organic growth of accounting for social and economic control, which predated the phenomenon of double-entry bookkeeping, had important lessons which have been concealed and remain to be appreciated. Significant components of an accounting paradigm which intuitively would seem appropriate to the economic, social and political problems of this age may be found in the paradigms which predated double-entry bookkeeping. Specifically, one may allude to the incorporation of non-financial measurements in the accounting process. Civilizations existing prior to the invention of money operated accounting control systems. Early Roman estate accounts held both monetary and non-monetary data, thereby meeting the informational needs of a dual economy.[4] More significantly, the earlier paradigms emphasized control rather than profit.

The inflation accounting problem is only symptomatic of the emerging need for a redefinition of the purpose of accounting and a resulting paradigm substitution. Though the accounting debate has not expressed this objective formally, it has evinced for several years an interest in a range of questions which implicitly erode the basis of the existing paradigm. Such questions have ranged from, *inter alia,* added-value accounting to human resource accounting, from accounting for social costs to accounting for social goals, from the extension of accounting responsibility to groups other than in-

vestors and non-monetary measurements, to cost-benefit analysis. Significant and ominous to the durability of the existing paradigm and which looms on the immediate horizon is the prospect of quite revolutionary changes in the socio-economic environment reflecting the pressures engendered by the search for a new political paradigm in Western European countries. In the short-term, many instances exist of a political priority being given to employment rather than profit, as unemployment control policies become more stringent and more direct. In the long-run, the consequent enlargement of state ownership manifestly may erode the significance of profitability accounting. Not unexpectedly, Marxist teaching appears to exert an unwelcomed influence in the current turmoil, and adds an uneasy tension to the accounting crisis.

If the current paradigm is indeed in a state of crisis, and if an accounting revolution is presently being structured, an analysis of the historical experience may assist in enriching the imagination during a period of transition. Thus, while historicism itself has no satisfactory predictive ability,[5] it provides numerous illustrations of options which have been available.

Generalized Hypotheses About the Historical Process

It seems appropriate to formulate generalized observations of the historical process in terms of significant changes in the structure of society. Such changes may be revolutionary and catastrophic, or they may be evolutionary and lead to gradual paradigm substitution. In this analysis, the political structure of any given time determines the objectives of accounting, and where several objectives may be deemed to exist, it ranks such objectives in some order of priority. Several hypotheses may be developed from this fundamental assumption.

First, strong forms of centralized power reduce the significance of individual rights, and require accounting control systems which meet the informational needs of the centralized political power.

Second, the dilution of centralized political power results in the extension of individual rights, the most significant being rights over economic resources. Where the dilution is only partial, as under feudal systems, the political authority vested in subordinate lords manifestly results in the appropriation of economic resources to the enjoyment of these individuals. The devolution of political power generally has a tendency to encourage the appropriation of economic resources to the enjoyment of individuals in whom that power

is vested, whether or not that appropriation is effected by legal or corrupt means.

The dilution of centralized political power results in the appearance of several accounting systems functioning side by side and designed to achieve different objectives. These may be classified into two general groups.

First, several accounting systems may exist for the benefit of the central political power operating in a weak form. Some examples of such systems are as follows:

(a) taxation accounting under which limited taxing powers enforce the submission of accounting statements in the form of income tax returns for the purpose of assessing the contributions to be made to the central political power;
(b) government accounting systems operating to manage funds vesting in the central political power; and
(c) specific accounting systems functioning for particular purposes. The range of such systems will reflect the extent of the central power's residual authority. It will usually include systems designed for the control of selected commercial and industrial operations undertaken by the central political power. In addition, such systems generally deal with the management of the money supply, foreign trade and foreign exchange.

Second, several accounting systems may exist for the benefit of individuals or groups of individuals. These are typified by extant financial and management accounting systems having a variety of purposes.

The third hypothesis which may be made is that external or internal threats to the stability of societies exhibiting weak forms of centralized political power will have centripetal effects which may be temporary or permanent. The threat of war may lead to a reassertion of the central political power's control over economic resources, expressed in the mobilization of men and resources, rationing systems, requisitions of property and such abrogation of individual rights as may be deemed necessary. The accounting systems implied by these conditions are intended to control directly the resource allocation process, both as regards the manner of use and the location of use. Internal threats engendered by economic or social crises may have both temporary and permanent effects. Typically, they combine either to strengthen the central political

power's authority, or to lead to the subversion and replacement of that power by an alternative one, which historically has proceeded to use draconian measures. This third hypothesis implies a corresponding reduction or elimination of individual rights and the redundancy of the accounting systems with which they are identified.

These three hypotheses will be found useful in the analysis of the historical process for a number of reasons. First, they assist in the categorization of different civilizations according to the form of centralized political power which they exhibit. Therefore, they assist in identifying the accounting paradigms with which these civilizations may be associated. Second, they will show that relative states of knowledge do not necessarily imply different paradigms. The objectives of accounting systems may be associated directly with political power structures and the political paradigms on which they are established. Third, they leave open the accounting numbers and methods which are deemed appropriate to these objectives.

Historical Analysis

The historical process lends itself to an analysis based on these three hypotheses, providing that sufficiently broad sweeps of time are allowed to render such an analysis meaningful. It is evident that the tendencies assumed by these hypotheses relate to the very long-term, and that the paradigms with which they are associated are long-lasting and deeply embedded in cultural patterns. Accordingly, long-lasting paradigms and protracted transition stages, during which paradigm substitution occurs, more typically represent the historical experience than the swift and convulsive changes usually desired by radical reformers.

For the purpose of identifying paradigms which are relevant to an understanding of the current accounting crisis, it is suggested that the following four periods of history offer the most interesting speculations:

(a) the world of antiquity which predates the invention of money;
(b) the Roman world which exhibits interesting problems of structure and control, vestigial developments of capitalism and substantial legal and accounting developments;
(c) the Middle Ages, which may be regarded as a period of transition, reflecting the many stresses associated with paradigm substitution, and in particular the con-

flicts between religion and capitalism, church and state and the development of a restrictive accounting paradigm in the form of double-entry bookkeeping; and

(d) the Western European world of the post-war years, and in particular the last two decades, in respect of which the topicality of speculations ensures the greatest interest but possibly the least substance. The effect of restricting the time-span considered of necessity must heighten the difficulty of identifying the trend of change.

The broad generalization which will be attempted in this analysis is that the internal threat posed to the stability of Western European countries, which is appearing under the guise of a search for a new political paradigm, has initiated a permanent shift of authority to the central political power and a different emphasis in accounting. In this sense, it will be argued that there appears to be a return to earlier forms of central political power and that the third hypothesis is relevant to an appreciation of the nature of paradigm change.

The World of Antiquity

The earliest speculations with which Western scholars appear to be familiar relate to the civilizations known to have existed in the area lying between the Tigris and Euphrates, known as Mesopotamia, where accounting records dating back to 5000-4500 B.C. have been found.[6] In this area jostled the several civilizations mentioned in the Bible, namely, the Assyrian, Chaldaean-Babylonian and Sumerian nations of the Old Testament. These civilizations are recorded as exhibiting the strong forms of centralized political power needed in the face of constant external threats. They also had cities and temples and, seemingly, quite well-developed forms of commercial activities involving real property, inventories, loans, leases, etc.

Homeric sources are of special interest, though they relate to the Mycenean civilization which flourished in the Eastern Mediterranean. Again the classification of knowledge has restricted research to classical scholars, archeologists and ancient historians. Yet central aspects of this research rely on accounting records, and shed light on accounting paradigms.

In Crete, and particularly in Knossos, there flourished the earlier Minoan civilization exhibiting a more sophisticated culture. Excavations at Knossos, in the 1960s, produced a fascinating array of ac-

counting objects. The key to understanding the hieroglyphic language in which accounting data was recorded on the objects which have been excavated was provided by Ventris,[7] who deciphered the Linear B script. It is known that the Minoans operated a palace or temple economy, which was centrally controlled and used accounting control systems for its purposes. The centralized control of all supplies, and dispositions of a military and political nature were recorded by scribes. Money did not exist, but the need to develop accounting data for control purposes was evidently a paramount need of the central political authority. According to Renfrew,[8] the appearance of language in this civilization and the use to which it was put would support the hypothesis that accounting may be the mother of literacy. The absence of money did not impede the development of complex and effective accounting control systems, nor did it prevent the evolution of means of making quite intricate forms of mathematical computations.

This analysis suggests that monetary measurement to which the modern accounting paradigm is restricted was of a much later origin and is not necessarily central to the purpose of accounting. On the contrary, it suggests that the notion of control is the fundamental paradigm, and the measurements which are most suitable to its purposes are a function of perceived objectives. Under the conditions of external military threat, which appear to explain significant aspects of Minoan accounting records, measurements of quantities, descriptions and locations of men and supplies were more relevant to the central political power's needs than ever could be monetary measurement. Interestingly, this was also true during World War II, when considerations relevant to the management of the money economy were subordinated to the requirement of a siege economy and its military objectives. It may be hypothesized that manpower management policies in Western Europe in the next decades will imply different accounting paradigms, both at macro- and micro-levels. The abortive development of human resource accounting in the 1960s and 1970s reveals the degree to which the extant accounting paradigm frustrates the ability of the accounting process to deal with problems which cannot be encompassed within an ambit defined by monetary measurement.

The Mycenean and Minoan experiences indicate that the paradigm which is relevant to the purposes of a strong form of central political power is addressed to the notion of control, and in that sense, language, description and analysis fulfill its needs better than purely money measurements.

The Roman World

The Roman world is interesting in terms of the second hypothesis on which this analysis rests, and the accounting paradigms which asserted themselves during this period. The dilution of the central political power, the extension of empire and the degree of autonomy which its several regions enjoyed under proconsular rule, the objectives of war and its financing and financial aspects, the power enjoyed by municipalities and large landowners, the early manifestations of capitalist production both public and private and the administrative network established to arrive at a workable compromise between public and private affairs and its supporting framework, are all significant to this analysis of accounting paradigms in this period.

Contrary to the belief which ascribes the genesis of modern accounting to the invention of double-entry bookkeeping during the Renaissance, the most significant and relevant paradigms are to be found in the manner with which the Romans dealt with their affairs. This thesis has been advanced in an earlier paper[9] and illustrated therein by numerous examples of Roman ingenuity in devising accounting means for control purposes. It is suggested that there is a general similarity between the hypothesized conditions of political control prevalent in Roman times and in contemporary Western European society. Essentially, the Romans were concerned with the problems of administrative control. They laid such emphasis on the production of administrative information that complaints about the "red tape" syndrome are recorded in the writings of Cicero. In particular, great care was given to the management of financial matters and property rights, where notions of control and audit appear much more important than efficiency of asset use. The Romans were both careful and profligate as regards the use of funds, if profligacy is measured by standards of good housekeeping. As a result, they experienced financial problems akin to today's, namely, maladministration of public affairs, inflation, financial scandals, etc. It is also true that they were mortified by maladministration and made it a point of honor that the Roman citizen should be an example of probity in the management of public and family property entrusted to him. In these several respects, the parallel between Rome and today is too close for comfort. Equally, this parallel provides the most relevant experience for an appreciation of today's problems. Hence it would be difficult to identify conditions which may be said to be entirely representative of this period. Such illustrations as

may be selected should relate, therefore, to conditions which are replicated to a degree in modern times.

The dilution of central political power gave rise to a significant private sector, the dimensions of which, at any given time, cannot be evaluated. At the same time the public sector, consisting of the activities of Rome itself, the regions of the empire and the municipalities, exerted a cohesive influence on the entire economy. Wealthy Roman families provided the public figures which administered its affairs, and at the same time controlled the wealth vested in the private sector.

It may be assumed that the objectives of the central political power were determined, as they are now, by the political process. The policies which they engendered doubtless were based on political value judgments rather than accurate and objective perceptions of any anticipated economic benefit and obvious wealth-creating purpose. The public sector control problem in Roman times arguably may have been no different than today's, namely, how to impose expenditure criteria and limits on alternative programs in the light of value judgments susceptible to political vagaries. Excessive expenditure on public feasts and entertainment have their parallel in contemporary public expenditure which is equally whimsical and profligate, and only defensible in terms of almost similar value judgments. Since the realities which place strict limits on personal expenditure do not exert the same influence on public expenditure, it is hardly surprising that the accounting paradigm most relevant to public sector expenditure control is one which emphasizes the control of cash and cash balances. Further, since the expenditure does not necessarily lead to future net cash flows which act to reduce the tax burden, nor can be directly associated with any perceptible increase in the taxpayer's well-being, it follows that the significance of capital accounting is diminished. This reasoning may well explain the logic of Roman public sector accounting, and its emphasis on the accountability of the public persons who held political office. The notion of personal rather than party audit and accountability of public figures has been substantially eroded in the current political paradigm.

The transition to a money economy was not completed during the Roman period. Even in the public sector, accounting methods relied on both money and other measurements and descriptions. In the private sector, an extensive pattern of trade across the Mediterranean and into Roman Europe was supported by a system of production which was not wholly market-oriented. Hence, monetary

and non-monetary measurements featured in the dual accounting systems which were prevalent, and such accounting records allowed only an imperfect view of profitability and capital.

As regards the private sector, the accounting emphasis was placed on the control of assets and the notion of audit and accountability was reflected in legal concepts and, particularly, in family law and custom. For this purpose, the Romans required monetary and non-monetary data and descriptions. Although the writings of such persons as Cicero, Varro, Cato and Columella indicated an interest in good management and housekeeping and the economic aspect of estate management, the Romans had little understanding of economic realities, and their accounting methods took very little account of the economic facts underlying the data recorded.

The Middle Ages

The Renaissance which took root in Italy and spread its influence throughout Western Europe gave the Middle Ages a particular significance, both in terms of the second hypothesis and the accounting paradigms established in this period.

The Renaissance was also critical to the subsequent development of Western European civilization, by virtue of the intellectual and cultural leap forward which it inspired and which has culminated in the Scientific Revolution of recent decades. The diffusion and ultimate disintegration of the central political power which marked the existence and disappearance of the Roman empire was gradually reversed by a trend towards centralism in which church and princes played a crucial role.

Western Europe emerged into the Middle Ages endowed with a semi-primitive tribalism manifested in the form of feudalism, which may be suitably described as a political system erected against external threat and maintained by an elaborate pyramid of rights and obligations. Chivalry and religious fervor veiled the overriding concern with property rights in all their forms. The feudal pyramid gave the sovereign political power influence over all resources, though that influence was conditional upon the observance of the conventions of the system. Nevertheless it marked the beginning of a gradual shift of political power towards the center, which took different guises.

First, the rights of individuals were gradually subordinated to those of an immediate overlord. In turn, his rights were conditional upon the favor of a series of superior lords and ultimately the sovereign. Second, petty kingdoms were submerged as nations grew and

their boundaries were consolidated. Third, the church exerted a centripetal influence in matters of state, law and property by the influence it exercised over men's minds. Fourth, the militarism which favored Rome's rise to empire and riches also supported the concentration of wealth which occurred in the early Middle Ages.

The accounting paradigm which provided the data required by the feudal system reflected the paramount concern with control. Dues and entitlements were recorded in all forms of estate accounts, and the descriptions found therein contained the requisite variety of detail. The freed slave, who had performed the office of scribe in Roman times, was replaced by a powerful functionary who, in the office of steward, enjoyed the power, responsibilities and emoluments of the latter-day bureaucrat. Rolls and estate accounts not only provided the data base for control, but also evidence at law. Hence, the accounting process served both a political and a legal purpose. This duality of purpose which manifested itself only briefly in the heyday of Roman accounting about 200 B.C., reasserted itself, and remains today a central feature of the accounting process.[10] It is noteworthy that it was the breach of recorded and established rights recognized in actions for tort which ultimately gave rise to the law of contract, which is the fundamental base of accounting transactions.

The formal association of accounting with law during this period was not limited to the recognition and record of legal rights. An interesting extension of this association during the Middle Ages was the emergence in England of the Royal Courts of Justice from the offices responsible for the accounting and administrative functions of the central political power. Thus the Exchequer of Pleas had the authority to deal with disputes arising out of the conduct of royal accounting. It subsequently became a separate court of law, and as the Court of Exchequer survived until 1873 when it was merged into the Supreme Court of Judicature.

As the Crown was identified as the ultimate source of justice, other departments of state endowed with administrative functions also acquired judicial functions. The Lord Chancellor, who at this time was always an ecclesiastical person, acted both as the Sovereign's Chief Secretary and as his Confessor. Appeals to the Sovereign as the Fountain of Justice were referred to the Lord Chancellor as "Keeper of the King's Conscience." This means of overcoming inadequacies in the Common Law proved to be one of the most significant developments in English law at that time.

The accounting paradigm which this association reflects is highly relevant to an understanding of current trends in accounting, but hitherto has received no recognition. Namely, it is a matter of consensus that the central political power in the exercise of its responsibilities should behave in accordance with notions of natural justice, however defined, and should treat its subjects in an equitable manner. Accordingly, the influence of the central political power has long been identified with both legal and social justice, as well as control. It is noteworthy that the accounting process is now seen as involved not only in the area of control, but also with social justice in a number of ways. The idea of corporate social responsibility is merely one facet of a complex of ideas. Access to information by interested parties and the equitable distribution of benefits are other facets. The sentiment which associates social justice with the central political power is deeply entrenched in the human mind, and is manifested in its strongest form in the religious instinct. The standards of expectation and conduct are correspondingly higher, and the degree of accountability more wide-ranging than in the private sector.

The expansion of trade, which subsequently occurred under the umbrella of a protective feudal system, continued after that system underwent its transition to the sovereign system in the latter stages of the Middle Ages. This trade was regulated in a number of ways.

First, the markets and fairs, which were at once national and international centers of trade, operated under the rules of the law merchant. This law was enforced by courts which sat for this purpose. Hence, the process of accounting remained closely linked with the operation of legal rules.

Second, with the growth of towns and the expansion of trade and industry, there appeared the vestigial forms of the modern social system. Craft and merchant guilds regulated the manner and conditions of work, the levels of skills and the price of labor. Discrimination against the Jews restricted their social role to that of merchants and financiers.

Third, the shift to a money economy was completed. Nevertheless, its imperfections were already apparent. Interference with the value of the coinage by the central political power, as well as early practitioners of the art of financial fraud, gave that medium of exchange an uncertain value. Inflation occurred on several occasions and required draconian measures. During this time, several currencies circulated simultaneously and international trade was financed by precious metals and coinage. The extension of credit

gave rise to early forms of banking, and the needs of the central political power for finance beyond its revenues resulted in a state debt, and to the establishment of the Bank of England in 1694. That bank has since supervised the expansion of this debt to irredeemable proportions, without curing the endemic problems associated with the management of a money economy.

Fourth, it was in the hands of traders or middlemen, rather than manufacturers, that substantial wealth and power accumulated. The initial concentration of this wealth in the hands of Italian merchants gave rise to early forms of multinational companies controlled from their headquarters in Italy, and requiring more rigorous forms of accounting. It is in the development of the Italian method of double-entry bookkeeping that the most significant accounting paradigm is seen. Nevertheless, it was a paradigm very limited to a particular sphere of accounting responsibility and to that section of trade influenced by the Italians. As Yamey has pointed out,[11] the claim that this method of accounting was critical to the expansion of trade, because it afforded a systematic and rational means of profit calculation, is denied by the successful development of the wool trade in England, which did not enjoy the benefit of this method. Indeed, although double-entry bookkeeping did spread into Europe and was used successfully by the Dutch, as The Netherlands grew to financial and military prominence in the 17th century, it did not seriously take hold in England until after the sinews of English commercial wealth and power had already been established.

It is clear, therefore, that much of the total range of accounting for control is contained in earlier paradigms. An extension of the range of research is required if the problems of today are to be more thoroughly and sympathetically understood.

The Modern Age: Western Europe Post-World War II

The relative concentration and dilution of the central political power provides an illuminating hypothesis on which to develop an analysis of accounting history. In particular, it identifies paradigms which relate the development of accounting models to significant and long-term shifts in the political power distribution.

In applying this analysis to successive and significant historical periods, it has been suggested that the concentration of political power may be associated with periods of external or internal threat. It is this concentration which has helped to provide the required

solutions and maintained the continuance of established civilizations. It has been suggested also that control is the pre-eminent concern of any exercise of power, and that accounting is best understood as having evolved from this paradigm.

At the risk of an excessive simplification of today's problems, it is suggested that several trends are of critical importance in relating the development of accounting with shifts in the structure of political power. First, the trend towards centralism is continuing during this part of the cycle which began with the Renaissance. Second, it is an article of faith that the central political power should act directly to provide a framework within which problems can be solved. It is implicit in that faith, and in the political dogma in which all politicians justify themselves, that the best prospects lie in applying the authority of the central political power to the problems which are perceived. Third, the Modern Age is characterized by a growth of knowledge accumulating in a geometrical proportion, resulting in control problems of ever-increasing complexity. Fourth, the objectives of the central political power are not completely circumscribed by economic considerations, but are also social and cultural, and reflected in a philosophy which is liberal to the extent that it limits its encroachment on basic human freedoms. Accordingly, the data relevant to the development of policy and control extend beyond purely monetary measurements. At the same time, the money economy is still pre-eminent and its problems remain intractable of solution. Fifth, the external and internal threats to the integrity of Western European civilization appear ominous, and uncertainty exists as to the manner in which responses should be constructed. It has been suggested earlier that the internal threats may be regarded as being most serious to the maintenance of a Western civilization based on liberal democratic traditions.

Current Accounting Paradigm: Hypotheses and Analysis

The substantial argument advanced in this paper is that the crisis of modern accounting is generalized to its central meaning and purpose, and that the underlying cause of this crisis is attributable to the tendency towards centralism in the distribution of political power, and its consequential effects on the current accounting paradigm. In particular, the relevance of this paradigm to the conditions assumed under states of relative dilution of the central political power and the nature of individual interests thereby created, would seem to restrict the applicability of this paradigm to such conditions.

Accordingly, the crisis of modern accounting may be seen as one involving the search for a definition of accounting which permits the formulation of paradigms which are relevant to conditions assumed under states of relative concentration of the central political power. This search offers a number of options, many of which are foreclosed by existing classifications of knowledge. Clearly, the stipulation that the relevant accounting paradigm should be concerned with the problem of control brings its associated definition of accounting into conflict with other branches of knowledge, for example that I.Q. testing could be regarded as a form of accounting. Supporting this view is the assertion that the influence of economics has closed some of the important options open to accounting.[12]

The resolution of the problem of placing limits on that class of knowledge which may be defined as accounting is a precondition of a useful discussion of the problems of identifying accounting paradigms relevant to the control requirements assumed under the third general hypothesis stipulated earlier. The historical experience provides useful insights in this respect simply because the relevant facts relating to the accounting problem at any given time have not implied any preconceptions about what those facts would be at any subsequent time. What does emerge from the historical experience is that since the invention of money, accounting appears to have been more closely associated with the control of facts of a monetary nature and having financial implications, than with other sets of facts. The appearance of money and the role which it acquired have given accounting a historical association with a clearly defined set of problems, and with phenomena arising from concepts and rules associated with the role of money. Although accounting has implications which may be described as political or variously as legal, economic, social and behavioral, it is difficult to imagine that these implications could be understood within an accounting context unless they were expressed in monetary terms. In effect, this amounts to saying that other types of measurements, unless related in some significant manner to monetary facts, manifestly only have meaning when related to facts which are the concern of other fields of knowledge than accounting. Nevertheless, it remains true that the restriction of the relevant field of knowledge to monetary facts is inconvenient because it limits the accounting process to partial descriptions and explanations.

It remains to consider whether the crisis in current accounting lies in the failure to appreciate the significance of the trend towards the centralization of political power.

The political tendency throughout Western Europe is towards centralization of effective powers of planning and control over economic activity. The economic role of the central political power has resulted in a great diminution of the importance of the private sector, which is the focus of accounting interest. Moreover, the activities administered by state corporations are much more affected by political value judgments than traditional economic principles. Accordingly, traditional accounting methods directed at profitability and capital accounting would seem less appropriate to the problems of public sector economic activities.

There has been a great concentration of welfare functions in the hands of the central political power. This has resulted in the creation of many agencies committed to massive expenditure programs with objectives very different from those represented in the literature of accounting. This area of activity results directly from the belief that the central political power has a responsibility for redressing social injustices, as well as the legal injustices mentioned earlier.

The philosophy underlying the management of private wealth and business accounting is directed to profitability. Essentially, profitability may be represented as reflecting the relationship which exists between holders of business assets and the community at large. Accountants believe that profitability is a measurement of business efficiency. There is a widespread view, however, that profitability is a socially misconceived concept of efficiency, and that some other criterion of efficiency is required to manifest the optimal use of resources. The historical experience of the 19th century, in particular, has imprinted in the popular mind a direct connection between profitability and disproportionate personal wealth of the few on the one hand, and the exploitation and abject and widespread poverty of the many on the other.

The view that profitability reflects social injustice has led to a growing regulation of private sector enterprise. For example, in addition to direct taxation, there is now a widespread framework of laws governing employment conditions, pricing agreements, dividend distributions, trade union negotiations and company law reform.

The increasing concentration of the central political power has resulted in bureaucratic control and the employment of large numbers of bureaucrats. There is growing evidence of substantial discretionary managerial behavior in the ranks of bureaucrats, and of a lack of control over their activities. This is due, in part, to the

failure to devise appropriate control procedures, but is also attributable to the inability to impose upon the bureaucracy an appropriate level of audit and accountability.

By taking an olympian view of the historical process, and thereby making generous provision for speculation, it has been suggested that an analysis based upon hypotheses relating to different states of concentration and dilution of the central political power explains significant changes in the direction of accounting interest. The historical experience reveals the many options which have been available from time to time, the sympathetic adjustments which accounting has made towards changing conditions and the manner in which knowledge has been assimilated into its thought and methods.

FOOTNOTES

[1]Littleton and Zimmerman.
[2]Glautier, "The Idea of Accounting: A Historical Perspective."
[3]Mickwitz.
[4]Grier.
[5]Kuhn. Popper (1957).
[6]Keister.
[7]Ventris. Chadwick and Ventris.
[8]Professor A. C. Renfrew encouraged the author of this paper to examine the accounting implications of known facts with a view to establishing the accounting schema which had been developed. The hypothesis suggested by Professor Renfrew is now attributed to him at his request made at that time. Professor Renfrew is Disney Professor of Archeology, Cambridge University, England.
[9]Glautier, "Roman Accounting: The Influence of Socio-Economic Factors on the Development of Accounting Concepts."
[10]Glautier, "Roman Accounting."
[11]Yamey.
[12]Bryer and Pettigrew.

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A HISTORICAL PERSPECTIVE ON THE AUDITOR'S ROLE: THE EARLY EXPERIENCE OF THE AMERICAN RAILROADS

Abstract: The paper explores the origins of the auditing profession in the United States. It is suggested that the development of the audit function in this country can be traced to reporting by internal and shareholder auditors in the American railroads during the middle of the nineteenth century. Evidence is presented that a recognition of the need for audit independence existed, and that the provision of advisory services and reports on internal control by American auditors have been an inherent part of the auditor's role from that time.

Introduction

In recent years the structure of the auditing profession in the United States has been subjected to much scrutiny by governmental agencies and the general public. This attention has been intensified with the passage of the Foreign Corrupt Practices Act of 1977, which contains requirements for a system of internal accounting controls in most publicly held companies, and establishes responsibility for the adequacy of such controls with management and corporate directors. As a result, increased attention is being devoted to the role of corporate internal auditors and directors' audit committees in assuring that accounting controls are adequate and functioning as intended.

The objective of this article is to examine these roles during their initial development in the United States. The origins of the corporate auditing function in America will be traced among the nineteenth century railroads. Evidence of an early recognition of the need for audit independence will be cited, and the use of auditors and audit committees for evaluating, advising, and reporting on internal control will be described. It will be seen that pressures to extend the auditors' role have existed since the development of the corporate form of business organization in the United States.

Development of the Audit Function in the United States

The practice of auditing in the United States developed in response to two dominant influences associated with changing economic conditions. The first of these was the development of companies with geographically dispersed operations, which resulted from the westward movement of commerce on the continent. A second was the separation of business ownership from its management, which occurred with the development of the corporation. Each of these influences was evident in the railroad companies of the nineteenth century.

The Dispersion of Financial Operations

In the United States after the year 1800, the westward migration from the cities of the East Coast created an interest in improving transportation. The first companies engaged in this industry were the canals, turnpikes, and shipping concerns, all of which operated over major distances but whose financial transactions were normally centralized in one location. It was not until the rapid railroad expansion began in the 1840s that companies began to conduct financial transactions at widely dispersed geographic locations. This development required the appointment of internal auditors to monitor the processing of these transactions.

Most frequently audit duties were assigned collaterally to employees whose primary job functions were in bookkeeping. The Baltimore and Ohio Railroad in 1847 employed a chief clerk whose responsibilities included compiling and auditing receipts and reports from agents and conductors.[1] The Pennsylvania Railroad appointed in 1852 a middle manager with the title "controller and auditor," to whom reported two "assistant auditors."[2] The practice of assigning to accountants collateral duties in auditing continued for the rest of the nineteenth century and was adopted by later railroads in the Midwest and South. For example, the Illinois Central and the Hannibal and St. Joseph railways utilized weekly and monthly earnings reports signed by auditors in the 1870s and 1880s. This practice, intended to discover and prevent errors and frauds by railway agents, marked the creation of the modern internal audit function.

The Separation of Ownership From Management

A second influence on the evolution of auditing in the United States was the separation of the management of companies from

their ownership. As corporations were created, the need developed for reporting to stockholders on the performance of management. The railroads, as the first major enterprises in the United States to rely primarily on outside capital, were also among the first to encounter the need for reporting to the sources of that capital. Examinations by parties independent of management were frequently used to validate management's reports during the nineteenth century. It has been reported that the New York, Ontario and Western Railway was audited by public accountants in 1883, along with numerous other roads in the 1890s.[3] Yet the origins of the practice in the United States can be further traced to shareholder audits performed during the middle of the century.

One of the earliest examples of reporting on the custodianship of management occurred with the Philadelphia and Reading Railroad. The line had opened in 1839 and its managers issued annual reports beginning in 1843. However, many creditors and stockholders were apparently dissatisfied with the disclosure provided in these reports. In 1845, they appointed a committee of investigation, consisting of one director and three other shareholders, which was charged with determining answers to fifteen specific questions.

The committee responded with a forty-seven page report, concluding with a statement that they found nothing which was intended to "withhold, disguise or conceal the facts."[4] The investigation was possibly in response to an 1845 publication which had been critical of the road's accounting and disclosure practices.[5] This committee was created in America at the same time as the passage of the first of the Companies Acts in Britain, which required the formation of audit committees by certain companies in that country.[6]

The specific charge of the committee of investigation was published in its report and has been reproduced in Exhibit 1. This charge is significant because it illustrates the kind of information desired by stockholders in annual reports, at a time when very little precedent and no legal reporting requirements had been established. This early audit committee was requested to achieve certain objectives which later became associated with the independent audit. These included an examination of the amounts and classifications of revenues and expenses, a determination that liabilities were not understated in annual reports, and the disclosure of accruable expenses arising from liabilities incurred with business associates. The stockholders also requested certain kinds of information not currently provided in audit reports, perhaps foreshadowing

a further expansion of the present-day auditor's role. For example, the committee was asked to provide an appraisal of the condition of the railroad's fixed assets and to verify the accuracy of interim (weekly and monthly) financial reports being released in the newspapers of the time. Additionally, the committee was asked to disclose managements' budgeted receipts and expenditures, to compare them with actual results, and to provide financial forecasts. These stock and bondholders apparently felt that the kinds of financial information which is useful to management is also useful to external parties in evaluating the performance of management.

A similar form of reporting was carried out beginning in 1848 by David A. Neal, a wealthy Boston shipping magnate and railroad financier. At the request of the Philadelphia and Reading's stockholders, he conducted an extended investigation of the financial affairs of the company, and his conclusions were included in the annual reports of 1848, 1849, and 1850. Neal was not an accountant, and instead presented his findings "as a stockholder to my fellow stockholders." The reports marked an early appreciation of the need for external reporting to absentee owners on the custodianship of management.

Early American Audit Practitioners

As has been discussed, the auditor's role in the United States was evident as early as the 1840s. It will be useful to examine the evolution of the audit function until the late nineteenth century, the period of time normally considered to be the genesis of American auditing.

During the 1840s in both the United States and in Great Britain, much of the early auditing appears to have been performed by audit committees. The work of a committee appointed by the stockholders of the Philadelphia and Reading Railroad has already been described. In 1846, the Hartford and New Haven Railway followed the practice of having semiannual examinations of its secretary's and treasurer's books by a committee of two. An early auditor's opinion, rendered in handwriting by this committee and later included in an annual report, has been replicated in Exhibit 2. Similar opinions were recorded on the Hartford and New Haven's ledger accounts with other companies. The annual reports of the Western Railroad contained references to a "Committee on Accounts" beginning in 1851, and those of the Boston and Worcester beginning in 1855. The Board of Directors of the Western Air Line Railroad created an auditing committee of three, including the corporate secretary, in 1856. The committee was charged with auditing all vouchers before

they were paid by the treasurer. This committee was further required "to keep a record book in which shall be entered the number of each account, the name of the person, the character of the account, an entry against the name stating whether the account is allowed or rejected, the amount, with a margin left for the receptor's signature." The New York and New Haven Railroad was utilizing an audit committee in 1862, and the Illinois Central in 1875. McKee has concluded that the use of an audit committee was an accepted business custom by the year 1870.[7]

Many of the early audit committees in the United States appear to have been utilized to investigate frauds within their companies. By the middle of the nineteenth century, independent accountants and bookkeepers were in practice in most major cities, and frequently they were engaged to aid audit committees in their investigations.[8]

One such situation occurred in 1850 when the Committee on Accounts of the Western Railroad received evidence of defalcation at its Springfield terminal. The committee found the accounts of its agent in such disarray that it was compelled to seek the assistance of a competent independent accountant.[9] The subsequent investigation revealed a cash shortage of some $68,000, and the accountant's work was so well regarded that in 1851 the Directors appointed an auditor as an employee of the company. The auditor's duties were "among other things, to make frequent personal examinations of the books and accounts of every agent at every station upon the Road, and to require said agents to enforce the rule of cash payments for all work done by the Corporation."[10] This is one of the first instances of the use of an internal auditor in preventing fraud and insuring compliance with managerial policies.

In similar circumstances a committee of the Philadelphia and Reading Railroad in 1853 secured the services of a "competent accountant" to investigate frauds committed on the weight of coal handled by the line. This investigation resulted in the development of internal control measures to prevent future such frauds, but an internal auditor was not employed on a permanent basis.[11]

A major financial scandal erupted concerning the New York and New Haven Railroad in 1854.[12] Upon the discovery that its president had issued about two million dollars in unauthorized stock, an auditor was appointed at the stockholders' meeting in 1855. After determining the magnitude of the loss, this accountant consolidated the three sets of books which had been used to conceal the fraud and made a number of other correcting entries.[13] An auditor was then

employed to verify the treasurer's account balances on an annual basis until 1870.

Thus, it appears that the use of accountants with duties exclusively in auditing was adopted by some companies in order to augment the work of their audit committees. Frequently, these auditors were utilized not only in the investigation of frauds and the verification of account balances, but also in reporting on the company's financial status to stockholders. Many railroads chose to publish statements from their auditors in their annual reports.[14] The Western Railroad followed this practice starting in 1852, and the Boston and Worcester in 1856. These early audit reports sometimes enumerated audit steps employed, and described internal control procedures recommended or implemented during the year. The function of the Western's auditor in 1852 was to examine the books of the road's agents; that of the Committee on Accounts was to examine the books of the treasurer.[15] In the Boston and Worcester, both of these duties were performed by the auditor, while the Committee on Accounts merely satisfied itself with the adequacy of the auditor's work.[16]

By the 1870s many railroads were issuing annual reports which contained statistical tabulations from the major operating divisions of the company.[17] Frequently, the financial portions of these reports were prepared and signed by an auditor of the company. But as has previously been mentioned, normally these employees had primary duties in bookkeeping and only collateral ones in auditing. However, there is evidence to indicate that these nineteenth century companies did recognize the need for audit independence and sometimes implemented measures to attain it.

Development of the Independence Concept

The concept of audit independence can be traced to the beginnings of Western civilization. For example, an independent accounting by public officials was required by the ancient greeks and in medieval England.[18] The use of audits by monasteries, priories, and manors had created a group of professional auditors in England by the beginning of the seventeenth century.[19] In eighteenth century Germany independent bookkeepers were utilized to investigate cases of bankruptcy, primarily for the discovery of fraudulent acts.[20] However, an independent reporting on the custodianship of business management first became widely practiced with the creation of the corporation in the United States and the limited company in Great Britain.

The British Influence on Independence

In Britain, the Companies Acts of 1845 and 1862 required the semiannual audit of accounts for certain companies by an audit committee. Because this committee acted in behalf of the stockholders, the 1845 law required that it be composed of shareholders who were not officers in the company. The British audit was primarily concerned with issues of company solvency and managerial integrity, and the prevailing view at the time was that auditors should have a vested interest in the welfare of the company.[21]

The Companies Act of 1862 relaxed this requirement, allowing the appointment of auditors who were not stockholders. A later British statute, the Friendly Societies Act of 1875, stipulated that "the Annual Returns shall be certified by some person not an officer of the society (otherwise than as Auditor thereof), carrying on publicly the business of an accountant, and if not so certified shall be deemed not to have been made." Other later acts also allowed the use of "public auditors" who were not stockholders. Pixley has suggested that this trend toward the use of independent, rather than shareholder, auditors resulted from a recognition of the need for greater accounting expertise than a shareholder typically could provide.[22]

Apparently, the need for audit independence was acknowledged but not widely accepted in Great Britain as late as 1880. Brief has described a recognition of the lack of English audit independence which appeared in the pages of *The Accountant* in 1883.[23] Pixley discussed this point in detail when he lamented:[24]

> To insist on each Director holding a minimum stock in a company is undoubtedly a wise provision, but to make it a *sine qua non* for an Auditor to be a Shareholder is certainly a mistake. . . .
>
> [A shareholder auditor] knows that in the event of his refusing to sign the accounts as they are presented to him, and they are consequently altered to show an honest statement of the Company's affairs, the market price of the shares will fall and his own property be thus depreciated. If, on the other hand, he certifies the accounts as placed before him, the market price of the shares may be kept up or even rise. . . . He knows that in the event of the failure of the company he will not be severely blamed, he will at once plead that he did his best, and that the shareholders knew he was not a professional auditor.

Although the Companies Acts provided for an audit of accounts of certain companies in Britain, it was not until the Amendment Act of 1900 that the accounts of all limited companies were required to be audited. And even this statute did not require the use of an independent auditor.[25]

This early British concern for audit independence undoubtedly influenced the corporate auditor's role in the United States. Much of the capital which financed the early railroad expansion in this country was obtained from Great Britain, and British stockholders and creditors had the need for an independent reporting on the effectiveness of America's railroad managers.

Audit Independence in the United States

The early forms of audit practice in the United States have been described, and it has been stated that this evolution occurred in response to factors related to the economic growth of the nation. Accompanying the increased use of auditors in American corporations was a recognition of the need for independence in the audit function. This is apparent from the attempts of many companies to provide the appearance of independence in external reporting, and to provide a measure of independence for auditors reporting to management.

An early example of external reporting on the custodianship of management, described previously, occurred with a committee formed by the stockholders of the Philadelphia and Reading Railroad in 1845. The committee was purported to be appointed independent of management; none of the committee was an officer in the company although one was a director. The conclusions of David A. Neal in 1848-50 on the Philadelphia and Reading were likewise presented as being independently obtained, although they possibly were not. The final report in 1850 concluded with a request that the Road's bondholders, many of whom were British, accept a reissue of long-term debt. This suggestion was no doubt influenced by Neal's personal interests as a stockholder.

The widespread appointment of internal auditors among the railroads in the mid-nineteenth century has been discussed. These were created by the Baltimore and Ohio, the Pennsylvania, the Western, and the Boston and Worcester railroads, among others, in order to provide an independent verification of the receipts of cash by station agents. In the latter two roads, the auditors also verified the propriety of cash disbursements by the company treasurers and

reported to stockholders on the results of their operations. In the Boston and Worcester, where the auditor worked under the supervision of the Committee on Accounts, an additional degree of independence was attained.

Some of these auditors indeed may have been independent accountants rather than full-time employees of the company. Regarding the investigation of the New York and New Haven fraud of 1854, the Road's new president stated in an annual report that, "a careful and impartial examination of the false from the genuine stock was made by skillful and disinterested accountants."[26] Following the discovery of frauds relating to the weight of coal hauled by the line in 1853, the Philadelphia and Reading "immediately took measures to secure the services of a competent accountant, to make the required investigation, and engaged for the purpose, Mr. J. H. Evans, who was strongly recommended by Messrs. S. and W. Welsh, and other highly respectable merchants."[27] Managers of the period seemed to feel that independence was necessary for the satisfactory investigation of such internal frauds.

Although independence in appearance was considered important in reports on management by the 1840s, independence in fact probably did not appear until some thirty years later. The Chicago, Burlington, and Quincy Railroad normally provided summaries of financial information in its annual reports during the 1870s which were signed by its auditor. However, in 1877 an external audit was performed covering the first twenty-seven years of the road's operations. The resulting "Special Accountant's Report" contained twenty-nine pages, suggested a method of depreciation based on "train-miles," and traced the sources of the balances in the accounts. It was signed by an "Expert in Accounts," an early example of a report to stockholders by an independent accountant.[28]

Previous research in the history of auditing in the United States has emphasized the British influence in its development. Some writers have concluded that the first independent audits in this country were patterned after the British audit and were performed largely by visiting British auditors.[29] Others have suggested that American audit practice borrowed from the British but developed in response to industrial mergers during the last two decades of the nineteenth century.[30] From this research it can be concluded that the concept of audit independence existed in the United States during a period some forty years earlier, when the great American railroad expansion began.

Auditor Involvement in Internal Control

It has been previously reported that many of the early independent accountants in the United States were also teachers of bookkeeping by the Italian method. It was natural therefore, that many of these practitioners also provided advice to clients regarding the opening and closing of books, and improvements in bookkeeping methods.[31] Pixley stated that an auditor should "be able to suggest a better method, the adoption of which might not only save expense but also ensure greater accuracy in recording the transactions of the Company."[32] But there is evidence that the early American auditors and accountants extended advice to their clients not only on bookkeeping methods, but also on improvements in operating procedures and on internal controls.

Initially, these advisory services were provided in response to those frauds that the auditors were engaged to investigate. The Western Railroad's Committee on Accounts, investigating a cash shortage at its Springfield terminal in 1850, found that station agents were not being required to promptly submit cash receipts or to provide documentation in support of expenditures. The Committee recommended the appointment of a new bookkeeper at the terminal, and as was previously discussed, the appointment of an internal auditor to discourage such occurrences in the future. The committee also recommended that cash bonds were required from every cashier employed by the Road.[33] By 1857, the internal auditor was regularly reconciling bank balances and verifying all stock issues. In explaining an increase in receivables, the auditor commented:[34]

> The system by which the freight business is managed, appears to be quite satisfactory. Each station is made accountable for all that goes to it, and this accountability is watched and checked by one who has nothing to do with collecting the freight money, and who reports all delays in collections, to the proper authority.

Thus, the auditor expressed an early recognition of the need for segregation of duties. In the report issued in 1857, the same auditor described having implemented a voucher system to authorize payment for expenditures, and commented on control weaknesses observed in providing free passes to passengers and in collections from a connecting railroad.[35]

Upon discovery of frauds on the weight of coal in 1853, an audit committee of the Philadelphia and Reading Railroad promptly made adjustments to internal procedures in order to prevent reoccur-

rences. In 1854, the auditor investigating the stock fraud in the New York and New Haven Railroad, consolidated the treasurer's accounts with those of the engineer and the superintendent in order to provide greater control over stock issues. Thus, these early auditors felt a responsibility not only to determine the effects of frauds which had been discovered, but also to report the existence of control weaknesses that might lead to new frauds, and to implement changes in systems and procedures to prevent them.

It can be seen that from the birth of the corporate audit function in America, a major portion of the auditor's role has been devoted to obtaining evaluations of internal accounting control and making recommendations for improvements. Sometimes the results of these evaluations were published in annual reports to stockholders and creditors. And during the nineteenth century these steps were taken, not as a result of pressure from some governmental agency or legislative body, but as a result of the economic benefits to be derived from them.

Conclusion

In the United States, the auditor's role can be traced to the 1840s where it developed in response to changes in the economic structure of the country and was probably influenced by an already established auditing profession in Great Britain. Because auditing in the United States evolved in response to economic factors, it placed its emphasis on an accurate reporting of the results of operations and on the safeguarding of corporate assets. Evidence has been presented that by the middle of the nineteenth century, auditors were involved in reporting to stockholders on the accuracy of management's financial data, in reporting on strengths and weaknesses in internal control, and in providing advice to management on needed improvements in controls and procedures. American businesses recognized that if the auditor is to be effective in these roles, then some degree of audit independence would be necessary.

From the experience of these early practitioners, it can be concluded that the auditor's role extends beyond that of merely reporting on the accuracy of account balances. Auditors today, as in the nineteenth century railroad companies, should be experts on accounting methods, advisors to management on internal accounting controls, and independent reporters to external parties on their observations during audit examinations. This role for the auditor was developed for sound economic reasons which appear to be as valid today as they were over a century ago.

Exhibit 1

Instructions to an Early Audit Committee From Bondholders and Stockholders

Specification of matters to be inquired into and reported upon by a Committee appointed by the Bondholders and Stockholders of the Reading Rail Road Company to investigate the affairs of that Company.

I. To ascertain from the books and vouchers of the Company whether all sums of money received during the year ending the 30th November, 1844, have been satisfactorily accounted for; whether the sums of money expended have been carried to the proper accounts; and whether the annual statement published by the Managers of the expenditures of that year, and the statement contained in the circular of March 10th last, correctly represent all the expenditures chargeable to both these accounts, and particularly whether the items of the cost of transportation of coal as stated and classified in that report and in the circular are correctly stated.

II. If all such expenditures have not been charged to the regular accounts then to state what sums of money have not been properly accounted for, what items are incorrectly charged to either of such accounts, and what has been the actual cost of transportation particularly of coal during that year, the accounts being correctly made up and the expenditures charged to the right accounts, according to the views of the Committee, stating the amount of business and classifying the items, of the cost of transportation in the manner adopted in the annual report and circular.

III. To make the same examination of the account since the 30th of November, 1844, as far as the same have been made up, and if they are found to be correct in all the particulars specified above, to report what has been the cost of transportation of coal per ton during the period, covered by these accounts, and if they are not found to be correct, then to state what has been the cost of transportation of coal during that period, the accounts being correctly made up and the expenditures charged to the right accounts, according to the views of the Committee.

IV. To examine particularly the whole Bond account of the Company, and the vouchers for the same, with the view to report on the following inquiries.

1st. Whether or not the Annual Report of the Managers for the year ending the 30th of November, 1844, correctly stated the amount and character of the Bonds which had been issued up to that time?

Exhibit 1 (Continued)

Instructions to an Early Audit Committee
From Bondholders and Stockholders

2nd. Whether any other or more correct statement of such Bonds had been prepared for the Stockholders, which statement was suppressed with a view to deceive the Stockholders or the public, and particularly parties then in negotiation with the Company?

3rd. Whether any Bonds had then been negotiated on which the discount, or loss suffered, ought to have been and was not charged?

4th. Whether the losses on Bonds negotiated during the year ending the 30th of November, 1844, are correctly stated in the circular of the 10th of March?

5th. Whether during that year any new issue of Bonds was made in exchange for Bonds cancelled, and what was the character respectively of such Bonds so exchanged?

6th. What amount of Bonds have been paid since the 30th of November, 1844, and what the amount negotiated or in any way finally issued by sale or in payment of liabilities since that time, and at what rate have they been so negotiated?

7th. What is the amount of Bonds outstanding which have been absolutely negotiated by the Company?

8th. What is the total amount of the losses, commissions and charges on the whole amount of Bonds absolutely negotiated?

9th. What is the amount of Bonds now outstanding as collateral security, for the liabilities of the Company, stating the amount and character of those liabilities?

V. To ascertain whether the weekly and monthly statements of the gross receipts of the Company during the current year, as reported by the Transportation Clerk, and published in the newspapers, are true statements of such receipts; or whether any portion of the receipts so stated have been returned, or are agreed to be returned, by the Company, to the parties by whom they are paid, in such a way as to produce deception; or whether these statements represent, fairly and correctly, the actual gross receipts?

VI. What is dumpage? What was the amount of this charge of dumpage, in the year ending the 30th of November, 1844? What has it been since that time? What has it averaged per ton during those periods respectively?

VII. Have the rents of the wharves at Richmond been included in the weekly and monthly statements of the receipts published by the

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Exhibit 1 (Continued)

Instructions to an Early Audit Committee
From Bondholders and Stockholders

Transportation Clerk since the 30th of November, 1844; and if not, what will be the amount of the same?

VIII. What amount of money has been expended during the current year, or has been agreed to be paid, as bonuses to boatmen or to owners of boats, to induce them to run from Richmond; and if any, should such bonuses have been deducted from the weekly or monthly statements above referred to; or are they of such a nature as to be more properly chargeable as a part of the expenditures of the Company. If any such bonuses have been paid, to what account have they been carried?

IX. The condition of the roadway bridges and track, generally, of the road; are they kept in such good, proper order and repair, as on well-managed roads generally, and the state of the several kinds of rail in use on the road, and their adequacy to sustain for the future the heavy trade now on the road?

X. The condition of the machinery on the road, particularly that used in the transportation of coal; whether it is kept in such good working order and repair as on well-managed railroads generally?

XI. The condition, state of repair and efficiency, of the wharves, machine shops, water station depots, founderies, &c., of the Company.

XII. To state what is the total amount of the liabilities of the Company at the present time, as nearly as the same can be made out; what has been the total increase of the liabilities since the 30th of November last, and for what purpose this increase of liabilities has been incurred, specifying particularly what outlays for construction, and what additions to the Company's property, have been made during the period.

XIII. What estimates were made by the managers, of the amounts of the business receipts and expenses of the current year; what have been the actual results, thus far, and what will be the probable result of the operation for the entire year, stating, so far as is necessary, the grounds for any estimate which may be made of these results.

XIV. What will be the probable amount of the liabilities of the Company, after the payment of the coupons falling due on the first of January next, taking into view the receipts and expenditures of the month of December next, as far as the same can be estimated;

Exhibit 1 (Continued)

Instructions to an Early Audit Committee
From Bondholders and Stockholders

and what further additions will it be necessary to make in the investments of the Company, to accommodate the probable increase of the coal trade for 1846, with the grounds for such estimate.

XV. To investigate and report upon such other matters as may be brought to the notice of the Committee, in relation to the condition and management of the Company's affairs and property, in such manner as they may deem proper and useful to the stock and bondholders.

Source: Eleutherian Mills Historical Library, Greenville, Wilmington, Delaware.

Exhibit 2

Report of an Early Audit Committee

To the Stockholders of the Hartford &
New Haven Rail Road Company —

The undersigned, appointed by the stockholders at their last annual meeting to audit the accounts of the company, would respectfully report,

That we have made the usual semi-annual examination of the books and accounts of the Secretary and Treasurer and the vouchers for the same, which have been freely exhibited to us.

We have found the accounts correct, and the books continue to be kept in a manner to merit our entire approval.

All of which is respectfully submitted

C. Bosnell } Auditing
M. A. Tuttle } Com.

Hartford September 10th 1850.

Source: Archives of the New York, New Haven and Hartford Railroad, Baker Library, Harvard University.

FOOTNOTES

[1]Chandler, *The Visible Hand,* p. 100.
[2]Chandler, *The Visible Hand,* p. 105.
[3]Carey, p. 26. Edwards, p. 48.
[4]Philadelphia and Reading Railroad, *Report of a Committee of Investigation.*
[5]Ellet.
[6]Edwards, p. 7. Littleton, p. 289. Pollins, p. 338.
[7]McKee.
[8]Edwards, p. 46. Holmes.
[9]Salsbury, p. 268.
[10]Western Railroad, *Annual Report of the Directors,* 1852, p. 6.
[11]Philadelphia and Reading Railroad Company, *Report of a Committee to Investigate the Frauds on the Weight of Coal.*
[12]Stover, p. 35.
[13]New York and New Haven Railroad Company, *Report of the Board of Directors to the Stockholder,* 1855, p. 21.
[14]Previts and Merino, p. 58. Holmes.
[15]Western Railroad, *Annual Report of the Directors,* 1852, p. 6.
[16]Boston and Worcester Railroad, *Report of the Directors,* 1857, p. 22.
[17]Boockholdt, p. 20.
[18]Brown, p. 155. Littleton, p. 260.
[19]Woolf, p. 155.
[20]Gassmann.
[21]Chatfield, p. 114.
[22]Pixley, p. 161.
[23]Brief, p. 289.
[24]Pixley, p. 152.
[25]Brown, p. 318.
[26]New York and New Haven Railroad Company, *Report of the Board of Directors to the Stockholders,* 1857, p. 7.
[27]Philadelphia and Reading Railroad Company, *Report of a Committee Appointed to Investigate the Frauds on the Weight of Coal.*
[28]Chicago, Burlington, and Quincy Railroad, *Report of the Directors, 1877.*
[29]Anyon. Moyer.
[30]Merino. Previts and Merino.
[31]Edwards, p. 45.
[32]Pixley, p. 153.
[33]Western Railroad, *Annual Report of the Directors,* 1851.
[34]Boston and Worcester Railroad, *Report ot the Directors,* 1856, p. 26.
[35]Previts and Merino, p. 60.

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THE DEVELOPMENT OF THE CONCEPT OF CORPORATION FROM EARLIEST ROMAN TIMES TO A.D. 476

Abstract: The idea of the "modern" business corporation is usually traced to England during the late fifteenth and early sixteenth centuries. However, many corporate attributes can be found in the Stoic's scientific theory of corpora. This theory permeated both Roman law and science and manifested itself in many of the Roman Empire's business and non-business entities. A historical and geographical linkage is suggested between the concept's development in Rome and its eventual appearance in England.

Introduction

This paper traces the concept of corporation back to its earliest known roots as found in Roman science and jurisprudence. A concise description of the history of the Roman empire and of the development of Roman law is given to provide the historical framework for the concept's development. An assessment is made of the concept's progress and spread up to the year attributed by historians to be the fall of the Western Roman Empire, 476 A.D. The conclusion of this paper, which serves as the starting point of a second paper, illustrates the various manners in which the remnants of Roman law survived the fall of the Western empire and were incorporated into several Germanic and Saxon codifications; a subsequent paper will detail the further development of the corporate concept in England up to the year 1500 A.D.

Periods in the History of Rome

It is common for present-day Roman historians to divide Roman history into three parts corresponding to the forms of government that prevailed at the time. Thus, many authors speak of Roman history as divided into the Monarchy, the Republic, and the Empire (see Appendix).

No precise beginning date for the founding of Rome has yet been determined; Roman historians of the fourth century B.C. invented a

mythical figure called Romulus, as the city's founder. Romulus, son of the god Mars, was credited with establishing the city on the Palatine hill in 573 B.C. From 573 to 509 B.C. Rome was ruled by seven kings (or six if one dismisses Romulus as a fictional character). The monarchy was politically divided into the "kingship, a council, an assembly of the people, and the units into which the citizens were grouped for the better performance of their obligations and the exercise of their rights."[1] The kingship was not hereditary nor was his power absolute. The council, called the Senate, was principally advisory in nature and the Roman people were divided into thirty groups called curiae, ten of which constituted a tribe. The kingship was not a stable position and its influence as a political force waned as that of the nobility rose.

The period of the Roman Republic extends from 509 B.C. down to 31 B.C. with the battle of Actium in which C. Julius Caesar Octavianus was the victor. Mommsen has divided the Republic into four smaller periods.[2] The first of these periods runs from 509 B.C. to 265 B.C. during which time the city of Rome solidified its political and military power and unified the whole Italian peninsula. The second period, from 265 to 168 B.C., sees Rome battling non-Italian powers not only in Italy but abroad. Roman victories during this time lead to the acquisition of Sicily, the greater part of Spain, the Punic possessions in North Africa, and Macedonia. The third period, from 167 B.C. to 79 B.C. witnesses the breakdown of the republican form of government and fierce political upheaval leading, at times, to civil war. The last period, from 78 B.C. to 31 B.C. sees the replacement of the republican form of government with that of a military monarchy.

The third period in Roman history is the Empire itself; this period is often divided into two parts: the first part, from 31 B.C. to 284 A.D. is usually called the Principate, designating the Emperor's power as supreme but masked under republican trappings; the final part, from 284 to 476 A.D., is called the Dominate and sees the Emperor as both supreme and divine and making no pretense towards republican forms of government. It is important to remember that this study is concerned mostly with that part of the Empire referred to as the Western Roman Empire. It is during Diocletian's reign from 284 to 305 A.D. that the Empire is divided into two parts for administrative purposes: the Western Roman Empire was continuously besieged by barbarian invaders and its last Emperor, Romulus Augustus, was deposed in 476 A.D.; the Eastern Empire was to thrive for another thousand years until the Turks captured Constantinople in 1453 A.D.

The Evolution of Roman Law

The antecedents of Roman law are not known with certainty. Some historians conjecture that the antecedents of Roman law may be described as Estruscan imports. More cautious historians such as Wolff attribute the development of Roman legal doctrines as being entirely original to the Romans; Etruscan, Greek, and other alien influences "pertained to detail only and were assimilated without affecting the spirit and structure of the system as a whole."[3] Jolowicz refers to the time period from 753 B.C., the founding of the city of Rome, up until 451-450 B.C. as "the period of conjecture."[4] It is conjectured that the early kings established regal laws during the monarchy period. Roman tradition has it that one Sextus Papirus collected these laws in a book known as the Ius Papirianum; however, if such laws ever existed they are presently lost to us.

The first known Roman legislation is called the Twelve Tables (XII); Roman historians attribute the formulation of these tables to the attempt by Roman nobles to once and for all solve the long-time struggle that existed between Rome's two classes, the patricians and plebians. A group of ten men, called a decemviri, and composed of both patricians and plebians was given extraordinary powers to issue a set of written laws setting forth the rights and obligations of the two classes. The original text of the Twelve Tables is lost but enough references in later works have been found to insure that they did exist. The provisions of the Tables "concern procedure in court actions and enforcement, the law of family, of wills, succession, property, contracts, and torts, . . . sacral law, public law, and criminal law. . . ."[5] For more than a millenium the Twelve Tables remained as Rome's only attempt at codification.

As comprehensive as the Twelve Tables were, they did not contain all that was Roman law at their time. The Tables were void of any legal definitions yet they used many terms, the definition of which were understood. That is to say, even before the issuance of the Twelve Tables, there was an unwritten body of law "rooted in the collective conscience of the Roman people and sanctioned by ancestral usage, common recognition, or legislative fiat of the political community."[6] In later times, this traditional body of law would be termed the ius civile; its influence on daily Roman life was strong up until the Empire's Dominate period. Its influence lessened during this period as more and more legislative powers passed to the Emperor.

During Rome's Empire period a third source of law emerged in response to the growing necessity of affording legal protection to

those aliens absorbed into the state. The Twelve Tables and the ius civile were conceived as being inapplicable to persons who were not Roman citizens by birth. As the Empire expanded, the need for a body of law protecting such persons became obvious. This body of law is referred to as the ius honorarium and it was both formulated and administered by Rome's provincial magistrates. From Diocletian onward (284-305 A.D.) direct imperium legislation came into use. The Dominate Emperors were the masters of both the law and the Empire and consequently many time-honored legal rules were overruled or ignored by their edicts.

It was not until the ascension of Justinian to the throne (527-565 A.D.) that all of the above-mentioned sources of law were codified into one body of law. The codification which bears his name is most complete and probably his greatest and most enduring success. For seven years, from 528 to 534 A.D., compilers worked on the code. It was meant to be an authoritative statement of the whole of Roman law. "It was to replace and did replace all former statements of law."[7] Justinian's Code, called the Corpus Iuris, is the pinnacle of Roman jurisprudence. It is, thus, in the historical and legal context just mentioned that the concept of corporation emerged.

The Corporate Concept

The concept of corporation, as that term is used presently in America and England, is employed in a much narrower sense than it enjoyed in Roman jurisprudence. This constriction in the term's meaning and use seems to have occurred in the mid-to-late eighteenth century; as the corporate form of business became more and more prevalent in both England and America, the juridical development of the term embodied many of the constraints which national governments wished to place on such forms of business organization. Not only was the Roman concept of corporation much broader than today's but it also was an idea originally posited in the absence of those forms of business organization commonly referred to as corporations. In fact the concept of corpora, from which corporation developed, is originally one of Roman natural science instead of jurisprudence.

The general theory of corpora is rooted in the Stoic philosophy concerning nature. The general theory asserts that all objects which appear as separate things possessed an inner spirit, called a species or spiritus, which made that object into a separate body, or corpus. Although the spiritus was that cohesive force which gave the material object its identity, it was also thought capable of being

independent of the material, or substratum, that composed the object. The substratum could change and not alter the individuality of the object "provided the change happens successively and does not transform the object into a thing of another kind."[8] Thus, new planks added to a ship's deck did not change the species of the ship although the material comprising its deck does so change.

Corpora were divided into three classes. The first class consisted of homogeneous bodies such as a person, stone, tree or statue. The constituent parts of these homogeneous bodies were so inextricably bound together, so unified, that no separate right of ownership could exist concerning the component parts. One example given by Olivecrona, as cited from the Roman jurist Paulus, is that of a statue's arm. "The absorption of the arm affixed to the statue was even so complete that, if the arm had previously belonged to somebody else than the owner of the statue, his right was extinguished through the ferruminatio and did not revive if the arm was later on detached from the statue."[9] Likewise, if a tree, owned by someone, is purposely planted in foreign soil and takes root there, the ownership right of this person is extinguished because the tree's spiritus was absorbed by the spiritus of the soil to create a new object with a new spiritus.[10]

The objects contained in the second class of corpora are different from the first class since they are composed of parts that are not so unified as to be inseparable. A building, for instance, is composed of parts such as windows and doors which have not joined or melted together as completely as did the arm to the statue or the tree to the foreign soil. A person could own the building but it would not have its own spiritus. Its identity would be the summation of identities and spirituses of the component parts. Juridically important was the fact that should any of these parts be detached from the building, the right of ownership of a previous owner is revived since the spiritus of the detached part was not changed even when it was bound up in the larger object. "In other words, objects that are made part of a greater whole (a corpus) without being joined to it in such a way that they are absorbed into its unity potentially retain their own species."[11]

Corpora of the third class consist of parts that are physically independent of one another such as sheep in a flock or men in a legion; they are held together by bonds of unity and have names and spirituses of their own. "The reason why groups of persons or things were regarded as corpora was, of course, the natural inclination to conceive them as separate entities remaining identical, while

the parts composing them were changing. . . . The peculiarity of corpora of the third class is that the parts retain their own species though forming parts of the whole."[12] Juridically speaking, the third class of corpora implies that, unlike the second class, individual ownership rights can be exercised without having to demolish, disassemble or break down the object into its component parts. The species of the parts is not dormant while the whole exists.

It must be remembered that the general theory of corpora as enumerated above did not originate as a legal theory; it was rooted in Stoic natural science and assumed to be correct. Its proof was objective and did not depend on jurist's arguments. As a theory it was meant to pertain to all corpora. Corpora of the first class were tangible with but one spiritus; corpora of the second class were tangible but had no separate spiritus, their identity being defined by the spirituses of the components. Corpora of the third class were intangible unities composed of tangible objects. Both the intangible and tangible entities possessed separate spirituses.[13]

One final point should be briefly mentioned at this time. An important point, and one which later concerned many eighteenth and nineteenth century jurists, was the relationship between the scientific theory of corpora to the power and authority of the state. To the Roman philosopher all three classes of corpora were primordial. Consequently, the question arises whether or not corpora of the third kind were subject to creation by the state as artificial persons. If all three classes of corpora were inherent in nature, i.e., natural, the state could control but not create them. However, if the state could create such entities, part of the theory would be unnatural, i.e., not found in nature. To Roman philosophers and scientists corpora of the third class were not meant to be fictitious persons or simply entities with state endowed artificial personalities.

The Actual Development of Corpora of the Third Kind

It can be argued that even if the general theory of corpora is a scientific and rational one, its implementation in a Roman world frought with political uncertainty is but an ideal. Corpora of the third kind can exist naturally and unfettered in a world where the largest associative tendencies of a people are towards clans and families. In the expansionist world of the Roman Empire the ability to tolerate associative tendencies which placed such corpora above the state was limited. Jurists "will admit frankly that in reality associations are not created by the state, but they will refuse to consider this a sufficient objection to the legal view of them as having only a

fictitious personality granted to them by the state."[14] The author's research points to the paradox that even though the corpora theory was widely known among Roman philosophers and jurists the actual propensity in Roman law was to intermittently treat corpora of the third kind as unrestricted or restricted entities.

Much fruitful effort could be spent tracing the worldly manifestations of the third kind of corpora; concepts such as family, clan, tribe, town, state, church, etc., are all good examples. The direction of this paper, however, is to ascertain the extent to which such corpora were manifested in what today would be recognized as primarily business entities.

There is evidence of industrial development in Rome as early as the Monarchy period. Boak asserts that eight early guilds, those of the flute players, gold workers, smiths, dyers, shoemakers, leather workers, bronze workers, and potters, were organized during this period (753-510 B.C.).[15] The character of these guilds was purely social even though the bond between each member was due to a common trade or craft. He adds, however, that for approximately two and a half centuries after the establishment of the Republic (510-260 B.C.) "the encouragement given to trade and commerce under the later monarchy was replaced by an indifference"[16] to such development and a marked reversion to agrarian concerns.

The period from 264-133 B.C. was one of great military victories and territorial expansion for the Roman republic. By 133 B.C. lands added to the republic included Sicily, Sardinia, Corsica, Epirus (Albania), northern Italy up to the Alps, Spain, Greece, and Egypt. It was a period of constant struggle which saw among other movements the rise of the business class. "Its rise was stimulated by the Roman practice of depending as much as possible upon individual initiative for the conduct of public business. . . . By the middle of the second century B.C., contracts were let for the construction of public works of various sorts, the operation of the Spanish and reopened Macedonian mines, the collections of rentals from public lands in Italy and of harbor dues in Italy, Sicily, and Spain."[17] Persons who undertook such contracts were called publicans (publicani). Great financial means were not necessary since publicans were allowed to form joint stock companies with limited liability; there is no evidence to indicate that the Roman use of the term "joint stock" meant anything more than the pooling of the physical resources necessary to fulfill the contract requirements.

Guilds were but one form of corpora that existed at this time. Other organizations, including the guilds, were referred to as col-

leges; they were all social in nature and founded around a common tie such as a common profession or trade, a common worship, or the widespread common desire to receive a decent burial. The colleges were organized along the same lines as the municipalities with their own patrons, president, and treasury. In 64 B.C. all colleges throughout Rome were abolished because of public disorders occasioned by a new form of college, the political club. Six years later complete freedom of association was restored only to be revoked again by Julius Caesar who allowed only professional and religious colleges to remain in existence. Augustus, who followed Caesar, passed a law which required that new colleges must secure a Senate decree in order to form and stated that membership in an unauthorized college was a treasonable offense. Under Marcus Aurelius the colleges were recognized as juristic persons with the power to manumit slaves and receive legacies.

During the second century A.D. the economy of the Empire began to decline. By this time the publicans had extended their range of services to the point where they were provisioning most of the army and constructing many of the public works such as aqueducts, theaters, coliseums, etc. It became one of the government's vested interests to insure that the functioning of the professional colleges was not impaired in any way. "Gradually the idea developed that these services were public duties (munera) to which the several colleges were obligated, and under Severus Alexander the initiative in organizing new professional guilds passed onto the hands of the state. . . . The colleges from this time onward operated under governmental supervision and really formed a part of the machinery of the administration."[18]

The Late Empire (285-565 A.D.)

The Empire's dependence on the colleges to perform public duties became even more pronounced during the late empire period. Those colleges that were associations of businessmen, tradesmen, and craftsmen were now called corporations (corpora), and their members were referred to as corporati. "The idea that such duties constituted an obligation had developed gradually during the Late Principate and was accepted as axiomatic under the Autocracy. . . . The first step taken by the state to insure the performance of these services was to make this duty a charge which rested permanently upon the property of the members of the corporations, no matter into whose possession it passed."[19] Despite this limitation, finding a sufficient number of willing corporati became increasingly more

difficult as the Empire continued to deteriorate. Consequently, the state made membership in these associations an hereditary obligation. The professional corporations were the only ones to survive during the late Empire; the religious and funerary associations lapsed with the acceptance and spread of Christianity as the official religion of Rome.

The Decline and its Aftermath

During Diocletian's reign (284-305 A.D.) an administrative division partitioned the Empire into the Western and Eastern halves. How rapid and smooth this division occurred is hard to assess; however, it was not until 395 A.D. that Emperor Constantine moved his residence to Constantinople and established that city as the Eastern Empire's capital. By this time the end of the Western Empire was imminent. Barbarian invasions could no longer be checked and Rome itself was sacked in 455 A.D.

Justinian's Code, compiled and published between 528 and 534 A.D., was a product of the eastern empire. The partitioning of the Empire brought about the separate development of legal systems. The tribes and clans that invaded the Western Empire are often times characterized by historians as barbaric in nature. This statement may be true if one is comparing the degree of civilization of these invaders to that of the Romans; however, it cannot be pressed further without misstatement. It must be remembered that many of the Germanic and Saxon tribes responsible for the disintegration of the Empire were members of that Empire. Roman citizenship was extended to most of the people conquered by the Empire. The Germanic kings who took over the Western Empire attempted to restore or continue the Roman law that had existed. The Lex Romana Visigothorum (Roman Law of the Visigoths) was issued by the West Gothic King, Alaric II in 506; the Lex Romana Burgundionum (Roman Law of the Burgundians) was issued by King Gundobad before 506 A.D.; and the Edictum Theodorici, had been fashioned by Theodoric The Great, the leader of the eastern Goths in northern Italy. All three of these works codified Roman law but their subsequent development was influenced almost totally by the traditions and customs and needs of the Germanic and Saxon clans which lived by them.

With the decline of the western Empire came the decay of manufacture. The state factories (corporations) for military clothing and weapons ceased. The corporations lost their place in society and references to them in medieval law are few. As craftsmen reverted

to local attachments they lost much of their freedom of movement and became beholden to landed proprietors or bishops or monasteries. Although alive in the eastern empire the corporate concept, as practiced by Rome, died in the West.

APPENDIX

A Table of Significant Dates in Roman History*

	Date	Event
		Monarchy Period
B.C.	573	Founding of Rome by Romulus.
	509	End of the early monarchy.
		Republic Period
	451	The Decemvirate. Codification of the Law.
	264	First Punic War.
	218	Second Punic War.
	215	First Macedonian War.
	200	Second Macedonian War.
	171	Third Macedonian War.
	149	Third Punic War. Fourth Macedonian War.
	60	Coalition of Pompey, Caesar, and Crassus.
	58	Subjugation of Gaul.
	55	Caesar's invasions of Britain.
	44	Assassination of Caesar.
	31	Battle of Actium.
		The Empire
	27	
	14 to	Reign of Caesar Augustus.
A.D.	43	Invasion and annexation of Southern Britain.
	70	Destruction of Jerusalem.
	117-138	Reign of Hadrian.
	161-180	Reign of Marcus Aurelius.
	193-211	Reign of Septimius Severus.
	284-305	Reign of Diocletian.
	330	Constantinople the imperial residence.
	376	Visigoths cross the Danube.
	395	Division of the Empire.
	406	Barbarian invasion of Gaul. Roman garrison leaves Britain.
	409	Vandals, Alans, and Sueves invade Spain.
	455	Vandals sack Rome.
	476	Last Western Emperor deposed.
	506	Roman Law of the Visigoths.
	534	Franks overthrow the Burgundian Kingdom.
	529-534	Publication of the Corpus Iuris Civilis.
	565	Death of Justinian.

*Adapted from Boak's *A History of Rome to 565 A.D.*, pp. 525-533.

FOOTNOTES

[1]Boak, p. 40.
[2]Jolowicz, p. 1.
[3]Wolff, p. 49.
[4]Jolowicz, p. 4.
[5]Wolff, p. 59.
[6]Wolff, p. 62.
[7]Wolff, p. 164.
[8]Olivecrona, pp. 18-19.
[9]Olivecrona, p. 22.
[10]Olivecrona, pp. 22-23.
[11]Olivecrona, p. 24.
[12]Olivecrona, pp. 25-27.
[13]If one abstracts to the present day the three kinds of corpora, one can discern how corpora of the first, second, and third classes, respectively, can be compared to our present notions of proprietorship, partnership, and corporation. The comparison is less abstract if one strips away the legal connotations of these terms and reduces them to more basic concepts.
[14]Hallis, p. xxx.
[15]Boak, p. 42.
[16]Boak, p. 91.
[17]Boak, p. 158.
[18]Boak, pp. 369-370.
[19]Boak, p. 465.

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A DESCRIPTION OF A BALTIMORE MERCHANT'S JOURNAL

Abstract: The paper briefly describes the entries recorded in the journal of a Baltimore merchant during the latter 18th and early 19th centuries—twenty-seven years. Topics covered include entries in dual currency, composition of journal entries, method of posting, handling of contra accounts, and unusual transactions. An analysis of these journal entries provides insight into the rules of book-keeping and the economic and domestic lives of the citizens during this period in time.

This paper describes the entries recorded in the journal of a Baltimore merchant.[1] The first entry, dated October 12, 1795, debited the Cash Account for $363.35 (£ 136.5.2)[2] and credited the Account Estate of J. Stansberry. The final entry is dated July 1, 1822, nearly twenty-seven years later. The period included the years of the War of 1812 (in which the citizens of Baltimore, Maryland distinguished themselves), the event which gave birth to the present national anthem by Francis Scott Key. However, there are no allusions in the entries of the journal reflecting this event.

Construction of the Journal

Physically, the journal was leather bound, 13 x 8 inches plus binding, and 1¼ inches thick. As shown by a label in the back cover, the journal was

MADE AND SOLD,
by
JOSEPH TOWNSEND,
opposite the Centre Market-House,
BALTIMORE:
Who carries on the Book-Binding Business, in its Several Branches, in a neat and expeditious Manner.[3]

Note: While the words book-keeper and book-keeping might also be spelled as one word, the author has used the hyphenated spellings of these words to maintain harmony with the historical nature of this paper. The same view applies to capitalized nouns and other spellings.

There was a total of 209 pages of journal entries; 190 pages numbered by the book-keeper(s), and 19 pages unnumbered. The journal also contained 78 pages of religious writings, many of which are quotations from Clarke's Commentaries.[4] A large number of pages had been cut out; whether this implies the removal of financial information or the use of the pages for other purposes is unknown; however, the latter is more probable.

Description of the Page Form

Each journal page was headed "Baltimore" (in various styles of script) with a date for the first entry on that page. On pages 150 through 157 (November 8, 1798 to December 1, 1798) of the journal, there was fancy lettering at the top. The journal was ruled as shown below:

margin	for folio	space for entries	used for U.S. dollars	used for £.s.d.[5]	margin

Dual Currency

Aside from the era in which the journal was kept, the striking feature was that this merchant kept his accounts in dual currencies, English pounds sterling and United States dollars. This is particularly interesting because of the professional attention devoted to conversion and accounting for exchange fluctuations in today's financial statements. This practice of recording dual currencies continued until January 30, 1799, thereafter the journal entries were written almost entirely in pounds sterling, with an occasional recording of dual amounts.

The use of dual currency was somewhat surprising, but not exceptionally so, for one must realize that the Constitutional Convention of 1787 had given Congress the power "to coin Money, regulate the Value thereof."[6] On April 2, 1792, Congress passed a bill establishing the monetary units and in 1793 the first United States Mint was established in Philadelphia, Pennsylvania. During the preceding colonial era, coins of various European countries circulated rather freely, both here and abroad, as can be ascertained by reference to old book-keeping texts which frequently contained tables of conversion. This merchant's practice was in keeping with the times.

Just a little knowledge of the history of the United States will lead one to recall the early settlements by several countries, whose peo-

ple brought with them the customs of the old lands. As the population expanded and the settlers of the various countries intermingled, they were inculcated with the commercial practices of bygone days, influenced by the more recent establishment of a central government. The older residents had been educated to the English system of pounds, shillings, and pence; especially the imposition of taxes in these terms. Thus, it is easy to understand why this merchant utilized the monetary system with which he was most familiar.

The rate of exchange which this merchant used was $2.667 per English pound sterling (£).[7] This author is not aware of an official rate of exchange during this period; however, in the 1799 directory for the City of Baltimore, the "rate of coins for estimating duties"[8] quoted the pound sterling as $4.44. The 1802 directory[9] gave tables showing the value of dollars in the currencies of the different states. There were four groups, one of which was composed of "N. Jer. Penn. Del. & Maryl."[10] As printed, $5.00 was equal to £ 1.17.6;[11] $10.00 equal to £ 3.15.0; or $1.00 equal to £ 0.7.5. A table reducing pence and shillings to cents, a practical method for expediting uniform conversions, was also made available in the 1802 directory.

Composition of Entries

As noted earlier, on January 30, 1799, the book-keeper discontinued the recording of accounts in dual currencies, except for a few entries which were related to prior transactions. This probably was done to maintain monetary harmony between buyer and seller. It is believed that more than one person kept the journal. The headings of the pages sometimes indicate different handwriting and word construction; in addition, character formation was different on many pages. Most of the account titles are in clear, large, flowing characters, whereas the explanations are cramped, irregular, and restricted. It is interesting to note that during this period, schools and tutors advertised their skills in developing excellent penmanship. There are, moreover, some indications of changes in book-keepers, such as the cessation of using dots or "pricks" beside the page numbers to indicate postings to accounts, and the adoption of a check mark which is frequently seen in use today, viz. (ч). Another practice which might indicate a change of book-keepers was the omission of account page numbers for posting references beside the accounts "Cash" and "Merchandize" which began on page 122, and mentioned later herein. About the end of December 1798, the book-keeper began to abbreviate the word "Merchandize."[12] Other deviations occurred, such as the 1801 and 1802 entries being re-

corded in English currency only whereas the 1803 entries were recorded in dual currency. In 1804, one entry was in dual currency and one in U.S. dollars. In 1805, three entries were recorded in dual currency while all other entries were in U. S. dollars, and in 1806, and subsequent years, all entries were recorded in U. S. dollars.

Journal entries were separated from each other by double-ruled lines (e.g., ═══════ ═══════) extending across the page, broken only in the middle for inclusion of a date when necessary. This practice was supplanted by a single line in April 1803, but the double line was renewed in February 1805; hereafter a single line was used to the end of the journal, except for the money columns, in which case the double line was used.

Book-Keeper

The entries *may* be the work of one person even though as discussed earlier there is reason to expect there were changes in book-keepers. The identity of the book-keeper(s) has not been definitely established; however, some[13] think it was Lavallin Barry, whose name appears frequently in the journal entries. It is difficult to recognize as the proprietor (Barry) the same individual (Barry) as a customer, which he was, especially in view of the use of "house expenses" account. Furthermore, a "memorandum" on the fly-leaf signed by L. Barry is in handwriting distinctly different from the journal entries.

Posting Procedure

When posting simple entries to the ledger, the book-keeper used the following procedure, or form, in the folio column for the debit and credit account numbers: 8/2, 2/1. When posting compound entries, the ledger page number for the debit(s) was entered first, and the ledger page number for the credit(s) was recorded in the folio column in front of the customer or creditor account. In December 1797, the position was changed to $\frac{55}{64}\left(\frac{\text{debit}}{\text{credit}}\right)$. In April 1798, the use of numbers was abandoned for "Merchandize," "Cash," and certain other accounts. Possibly, this was due to familiarity with these accounts, but not necessarily so, because other accounts were used frequently and numbered. It is suspected that the two accounts were continued to other pages without interruption when the prior page in the ledger was full.

As evidence that the journal entries had been posted to the ledger, the book-keepers used dots or "pricks" beside the page numbers of the accounts, beginning with the first entry. However, these ceased on June 15, 1801. On February 16, 1798, a book-keeper used a check mark, currently in use today, viz. (ꟼ), intermingled with dots to indicate journal entries had been posted; this continued through March 19, 1800. An ordinary check mark (√) for postings began on June 15, 1801, and apparently signified postings to all accounts comprising the entry; and this system continued to the final entry on July 1, 1822.

On April 5, 1798,[14] posting checks were omitted for "Merchandize," "Cash" and some other accounts not involving persons. As an example, the following is shown:

17th April, 1798

(NO page numbers)	House Expenses Dr. to Sundries		
	Cash	57.26	21.9.5
	Merchandize	1.13	0.8.6
		58.39	21.17.11

[15]

Number of Entries

As a demonstration of the scope of activity, a tabulation was made of the number of journal entries recorded for each year (indicated below in parentheses); total journal entries numbered 1,423.

1795 (91)	1796 (364)	1797 (353)	1798 (377)	1799 (81)	1800 (24)
1801 (3)	1802 (0)	1803 (5)	1804 (2)	1805 (15)	1806 (8)
1807 (9)	1808 (9)	1809 (6)	1810 (19)	1811 (4)	1812 (12)
1813 (8)	1814 (5)	1815 (5)	1816 (2)	1817 (3)	1818 (2)
1819 (2)	1820 (5)	1821 (3)	1822 (6)		

As discussed below, the first five years indicate heavy usage, thus reflecting much activity.

Treatment of Cash Sales

For many months, regular entries were made in the following manner:

Cash Dr. to

Merchandize

Received from Sundries

These entries were discontinued after June 9, 1798. It is suggested that the proprietor possibly maintained a cash sales book or journal from which postings, although not journalized in this book, were made to the ledger. Perhaps the volume of business had something to do with the change in practice. This suggestion is not without merit, if the book-keepers followed the instructions of earlier writers on accounts who recommended the use of day books, memo books, and letter books. Throughout the years, there are occasional references to "sundries as per day book" which surely indicates adherence to the old recommended practice of recording transactions as they happened, to be journalized later to proper accounts. In 1801, a couple of references were made to "Sundry Account in memo Book." In November 1795, an entry is explained as "1 chest tea as per day book." Another entry in October states "for sundries as per Invoice Book."

Ledger Reconstructed

It seems that trading activities ceased in 1800 except for the first two entries in 1801. In the absence of the ledger of the proprietor, a general ledger was reconstructed by the author; to ascertain if possible the financial position. The foregoing entries resulted in the establishment of 99 Accounts Receivable, 31 Accounts Payable, and 7 other accounts for Profit and Loss and Balance Sheet, to which were posted 3,397 debits and credits

A trial balance of such accounts as were named in the journal was prepared and disclosed that the merchant had some overdue accounts—perhaps bad debts—because of the unpaid balances at December 31, 1800. Some of the purchases dated back to December 1795, and others through 1796, 1797, 1798, and April 1799. Thirty-one accounts appeared to be overdue, but this could not be determined with certainty without knowing the specific terms of sale.

Entries in Later Years

Except for the first two entries recorded in 1801, the remaining entries revolve around transactions between Charles Jessop and

Lavallin Barry, who appeared to be paying bills for Jessop, as indicated by explanations in the journal entries. About August 17, 1805, the writing is smaller, neater, and clearer in the entries. On August 17, 1805, Barry was debited with $1,200.00 for rent "from 1st Jan'y 1799 till 31st Dec. 1804 being 6 years @ $200.00 per annum"; Jessop was credited. Barry was debited (and Jessop credited) with annual rent of $200.00 for years ending 1805 through 1821. The next to the last entry in the journal is a debit to Barry's Estate and a credit to Jessop for "6 mo. Rent of House ending 30 June inst.—$100.00."

From the tone of the entries, Barry manifestly was making numerous disbursements for the benefit of Jessop and was charging these against the credits for rent. For the period 1801-1803, the amounts were English pounds. In 1804 the writer used U. S. dollars, with occasional set-ins of equivalent pounds.

Charges Account[16]

"Charges" opened in November 1795, was the account which compares with later use of general or miscellaneous expenses. Debits of $6.05 were made in 1795, $11.40 in 1796, $22.51½ in 1797, and $10.48 in 1798. There were no similar entries in 1799 or 1800. Included was $2.43 paid Joseph Townsend for a book, presumably the journal under examination; and $.50 for blank books on other occasions. While not specifically identified as to the nature of licenses procured in three instances, it is believed they were granted to purvey alcoholic beverages or spirits. This conclusion is supported by the annual repetition and the presence in the 1800 directory for the City of Baltimore where such a license cost $5.00.[17] The largest debit was for newspapers, $11.87½ in 1797. Other items were "rapping" paper, a measure, ink powder, a "writing disk," and drayage.

House Expenses[18]

In the house expense account, there were 169 entries of which 159 were debits and ten were credits. For a long-time, it was the custom for business to be conducted from a residence or adjacent building, a practice that may sometimes be observed today. The nature of the items charged to "House" expenses is interesting. Foodstuffs embraced 17 items plus salt petre (the preservative), beverages (4 items), dry goods (14 items), furniture (6 items), with which we will include a stove and pipe, and 6 window panes, (fire)

wood—hauling and sawing (3 items), and numerous entries each for sundries, marketing, and other expenses. There was one payment to the butcher and one for a hog. The cow food for the *house* seems unrealistic. While it was not indicated what cow food was, it was assumed to be grain and fodder for feeding cattle, horses, etc. There were entries for the hireling, P. Baker for hire, "for hire of Luce," and for stage (form of transportation) hire.

The credits are especially interesting. They result from sums totaling $537.50 received from boarding Messrs. Hutchens and Johnson. Our merchant recognized the need for offsetting expenses and income, a 20th century concept, but would not have been able by this method to determine a profit/loss from boarding principally because he would not know how much they ate of each food or what proportion of fuel was consumed for their comfort.

Profit and Loss Account[19]

Nine entries were made affecting a Profit and Loss account, eight of which were debits totaling $191.79. Seven of these were for interest charges on notes payable, and one was an allowance of 75 cents, apparently for freight on a merchandize purchase. The ninth item was a credit for $30.00 for "this sum found," no other facts given. It may be supposed that the proprietor had recorded the find in the event that a customer would seek to recover the loss in the future.

Interest was calculated at six percent although not so stated in all cases. Calculations were made by the author on the basis of principal and time periods which produced excellent confirmations of the amounts recorded. The first entry was for the interest on a note discounted at the Office of Discount and Deposit located at Gay and Second Sts. ("Cash received for my note of this date $200.00; 10/31/1796.") Paid 1/2/1797. In all other cases, the interest was calculated and added to the vendor's account and included in the face amount of the note payable, which covered the balance then due.

Absence of the companion ledger does not permit follow-up on the Profit & Loss account for the enterprise.

Notes Payable[20]

It is clear that this merchant understood the advantages of credit deferred through the use of notes payable. The rate of six per cent per annum was confirmed by calculations and was presumably less

than his profit ratio. At the same time, he recognized that his creditors were entitled to some return for the use of their funds, or perhaps he was persuaded by them.

He resorted to notes to creditors on twenty-two occasions. The first note to a creditor was given October 12, 1795, less than a month after the journal entries began. The shortest term was seven days in October 1796 and the longest was six months in August 1797.

He also discounted a note for $200.00 with the Office of Discount and Deposit on October 31, 1796, which was endorsed by Rutter and Etting, two of his creditors.

The largest note was for $1,694.43 which was issued 12th March, 1798, to cover unpaid purchases extending from 16th October, 1795, to 31st December, 1796. Interest of $135.82 on the unpaid account was included in the face of the note. No term was mentioned in the entry but "with interest at 6% until paid for." At the end of the journal period, the unpaid notes totaled $1,829.49.

Taxes

One of the interesting aspects of the entries after 1800 centers around taxes. Commencing in 1801, taxes were paid to several persons who were elected or appointed as collectors for the city and county. These taxes were identified as U. S. tax, city tax, pump tax, paving bills, road tax, county tax, and court tax. In 1819, W. Hamilton was listed as a City collector but why he was paid a county tax is not clear to this author.

The frequency of these tax items may confirm the earlier premise by the author that Barry was paying these and other bills for Charles Jessop (who may have been an absentee landlord).

Unusual Transactions

The following extracts from the many entries reviewed are considered to be unusual for a merchant, other than those referred to elsewhere.

There were at least eleven entries involving personal loans; four entries related to Toney who it seems was a slave and was hired out; two entries recording receipts of legacies from estates; two entries relating to a cask of brandy and a barrel of whiskey; two entries naming Jack who may have been a slave; one pertaining to a negro girl for $73.33, which may have been the going price to

acquire a slave; and the final entry assigning two "negroes Peggy and Kezia" in discharge of a debt of $400.00.

Merchandise Sold

From among the hundreds of journal entries, the following items of merchandise have been selected to partially reflect some of the transactions which affected the domestic life of the City. Many of the items are listed in the original spelling as deciphered, but all are indicative of the goods offered by what came to be known as the general store. However, most of these words, which may appear odd to us, were typical construction in that era. We must allow also for the lack of education of many people during the period.

barcalona - barcelona - a handkerchief (1795)[21]
brand and shorts - mixture of brand and coarse part of meal (1765)
brown Holland - unbleached linen fabric
button mools - moulds - a disk of wood to be covered
cassamer - cassimere - (another form of cashmere)
cravatt - cravat
check - a fabric - checkered
fustain - fustian - coarse cloth of cotton and flax (1537)
green bage, green base, - green baize - coarse woollen stuff having a long nap (1578)
kirsey - kersey - coarse narrow cloth
nankeen, nanking - cotton cloth (1755)
Osnabugs - Osnaburg - a kind of coarse linen made in Osnabruck
sattenete - satinete - imitation of satin (1703)
sprigs - could be small hardware
ticklingburg - ticklenburgs - coarse mixed linen fabric (1696)
tweld - tweel - twill - woven fabric (1779)
wheal farm - wale form - used in basket making.

Conclusion

This journal is an interesting book because it follows closely the rules of book-keeping, records the socio-economic relations of the era, and displays adeptness at keeping accounts in dual currencies; a matter which has caused considerable discussion in the accountancy profession in recent years. The book-keeper must have received his guidance from a textbook published abroad because Bentley's *Works on Accounting by American Authors* does not list

any book-keeping publication prior to 1796, a date subsequent to the use of this journal.

FOOTNOTES

[1]The journal referred to in this paper is unidentified and hereafter referred to as "journal." The journal is located in the library of The Baltimore County Historical Society, Inc.

[2]This is the arithmetical designation for 136 pounds, 5 shillings, and 2 pence. The £ stands for Livre derived from the French la Livre. Throughout this paper the three columns will agree with the entries.

[3]Reproduced exactly as it appeared on the label, including capital letters for nouns which was the custom. For another example of the capitalization of nouns, see footnote 6.

[4]Journal, unnumbered pages, Clark's Commentaries (purchased 3-28-1812, 11-30-1813, 1-28-1814) and other sources.

[5]See footnote 2.

[6]*Formation of the Union,* Sec. 8, Art. 1, p. 993. *Information Please Almanac, Atlas and Yearbook,* p. 521. *Official Associated Press Almanac,* p. 185. *World Almanac, & Book of Facts,* p. 278.

[7]See footnote 2.

[8]*Baltimore Directory,* 1799, p. 105.

[9]*Baltimore Directory,* 1802, pp. 68, 69.

[10]*Baltimore Directory,* 1802, as printed therein, pp. 68, 69.

[11]See footnote 2.

[12]Journal, pp. 158, 160.

[13]Personnel at the Baltimore County Historical Society, Inc.

[14]Journal, p. 122.

[15]As used by book-keeper, on left and right, space in middle for date.

[16]Journal, ledger account pages, 5, 58.

[17]*New Baltimore Directory and Annual Register,* 1800/1, p. 17.

[18]Journal, ledger account pages, 9, 34, 61.

[19]Journal, ledger account page 38.

[20]Journal, ledger account page 20.

[21]All glosses, *Oxford Universal Dictionary.*

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THE ECONOMIC ACTIVITY OF A GRAIN MILL LOCATED IN BALD EAGLE VALLEY, PENNSYLVANIA 1868 TO 1872

Abstract: In 1831, a grain mill was constructed along Bald Eagle Creek in Unionville, Pennsylvania. The author examines accounting records of this mill from 1868 to 1872 while under the proprietorship of William D. Smith. The economic activities and accounting procedures revealed in this study provide insight into the economic events as perceived and recorded by this proprietorship in immediate post-Civil War times.

Ownership of the Mill 1864-1981

For 128 years (1831-1959) a grain mill along Bald Eagle Creek in Unionville, Pennsylvania performed a vital service to members of the surrounding agricultural community. This paper examines the accounting records of this mill from 1868 to 1872 while under the proprietorship of William D. Smith. A history of the ownership of the mill is presented to enrich the historical perspective of the reader. The deed search was not extended beyond 1864 due to the complexity of property divisions and unavailability of information. The surnames "Smith" and "Buck" appear often in the discussion of ownership. William D. Smith's first wife (name unknown) gave birth to Mary Smith who married Daniel Buck. This is the sole relationship that the author was able to establish between the two families.

Names frequently appearing in the ownership transfers are William D. Smith and his second wife, Sarah; their son Francis W. and grandson Clair M.; additionally, Christian Buck and his children Joseph, Daniel, Harriet, and Katharine.

Grantees[1]

The mill property consisted of ten acres of land upon which the mill and the owner's house were located. On April 20, 1863, Sheriff Richard Conley conducted a sale of the mill property to settle a claim against the deceased owner, Jephaniah Underwood, who died

intestate. The property was sold for $6,000 to satisfy a $5,293 debt. Subsequent selling prices are not disclosed as property divisions would render a comparison of such prices meaningless.

Joseph Underwood owned the property from April 20, 1864, to May 1, 1867. When he sold the property to William D. Smith, he reserved the right to mine iron ore on the property. Smith would receive $60 "for each and every acre necessarily and permanently occupied."

William D. Smith owned the property from May 1, 1867, until the land was conveyed to Christian Buck by Sarah Smith *et. al,* in October 1892. William D. Smith died intestate. The property was then conveyed to the four children of Christian Buck upon his death in November 1909. In March 1914, Daniel Buck purchased the interests of his brother and sisters.

On September 7, 1923, Francis W. Smith acquired the mill from Daniel Buck for $1. As previously noted, a brothers-in-law relationship existed between these two parties through the marriage of Daniel Buck and Mary Smith.

The mill was conveyed by Francis W. Smith to his children in August 1946; his children are represented on the deed by "Clair M. Smith." Clair M. Smith still lives only miles from the mill site and shared his recollections of the mill with the author in 1981.

In December 1976, Gene and Roselyn Brandt bought and currently occupy the property.

Overview of the Milling Operation[2]

William D. Smith acquired his milling expertise from his father and brothers who were millers engaged in a similar operation in Clearfield County, Pennsylvania.

The mill was built along a race about one-half mile below a dam in Bald Eagle Creek. Two sixteen-horsepower metal turbine water wheels normally provided power. When the water level was too low to turn the wheels, usually in the summer or when the race was frozen, the mill was powered by a steam engine using a coal-fed boiler.

Farmers brought various grains to be ground, with the miller keeping a portion of the grain as remuneration for the grinding services provided. The miller kept one-tenth (1/10) of all grains ground, except ears of corn, of which one-eight (1/8) was retained as compensation. The miller would then sell his portion for cash or barter. The amount of the miller's compensation was determined by market forces, i.e., competition with other millers in the region.

The mill was not a seasonal operation but provided activity throughout the year to the preclusion of other economic activities such as farming. However, the owners kept a limited number of stock animals for domestic consumption.

Clair Smith estimated that there had been about five other milling operations in Bald Eagle Valley and two in Bellefonte, though he did not view the business environment as particularly competitive. He could not recall the existence of trade associations or granges, but he remembered that his father had subscribed to the "American Miller," a monthly trade publication that operated under several titles from 1873 to 1968.

The Accounting System

To a contemporary observer of accounting procedures, the most unorthodox characteristic of this system is the use of the single entry method of accounting. The accounting records consist of a "daybook" and an accounts receivable subsidiary ledger (A/R-sub). (The records were purchased at an auction by William J. Schrader, a member of the Department of Accounting and Management Information Systems at The Pennsylvania State University and are available for inspection at the University.)

The daybook is the book of original entry, i.e., a chronological record of transactions, consisting of 575 pages with dimensions 7″ x 16½″. The transactions comprising the daybook relate almost exclusively to credit sales and the receipt of cash associated with these credit sales. Entries in the daybook are posted to the A/R-sub, an 8″ x 13½″, 360-page tome, prefaced with a customer index to facilitate the location of the desired customer accounts.

The system appears to have been designed primarily to determine balances of accounts receivable, since cash receipts for cash sales to "cash-only" customers (if needed there were "cash-only" customers) and cash disbursements are conspicuously absent.

The following is a typical credit sale entered in the daybook:

(A)	(B)	(C)	(D)
70	Benjamin Rich to 370 lbs. chop at 3	Dr.	11.10

(A) This reference number indicates the page in the A/R-sub where the entry is posted.

(B) The customer's name and the nature of the transaction is described. Benjamin Rich purchased 370 pounds of chop grain at 3 cents per pound.
(C) The A/R-sub account for Benjamin Rich is debited "Dr."
(D) The extension or the total dollar value of the transaction, i.e., $11.10 (the amount posted to the A/R-sub).

Accounts Receivable Subsidiary Accounts

An examination of the account of a major customer, Henry W. Hoover, provides a comprehensive study of the transactions included in the A/R-sub accounts and includes the following items:

Debits to the Hoover Account

The first entry (Debit of $65.30, on 3/30/1868) records the purchase of Hoover's account by William D. Smith from the previous mill owner (the ledger notes, "by assumption," and is dated on the first day of operations, May 30, 1868).

The majority of debits result from the purchase of various grains from the mill by Hoover. However, Hoover's account is debited several times for purchases made by other customers. Example: Wm. Idings purchased ½ barrel of flour for $7 and the charge was made to Henry W. Hoover's account. One might surmise from this transaction that Hoover was indebted to Idings and was reducing his balance to Idings by $7, or was lending Idings $7, or perhaps Idings worked for Hoover.

A similar transaction is noted: Henry W. Hoover instructed the bookkeeper to debit his account for $10.80 and to credit Harvey Hoover's account $10.80. Again, it appears that Henry W. Hoover was settling a debt owed to another customer of the mill. However, in this instance it was accomplished by a transfer of balances on the books of the mill, which was a creditor, common to both parties.

Credits to the Hoover Account

Hoover reduced his balance by the use of both monetary and non-monetary assets. The monetary assets included cash, checks, and notes. The checks were drawn on the First National Bank of Bellefonte.[3]

A note for $120.68 credited to Hoover's account deserves some discussion. The author's interpretation of this transaction dated December 31, 1868, is presented in the following scenario: Prior to December 31, 1868, Henry W. Hoover accepted a note from "Rey-

nolds and Co." On December 31, 1868, Hoover endorsed the note, and delivered it to the miller for credit. The miller then credited Hoover's account for the present value of the note. The miller may have taken the note to be discounted at the "Bellefonte Bank" or received cash payment from Reynolds and Co. at maturity. Since a complete cash receipts record is not available, the author could not determine exactly, the disposition of the note. A discount rate was not ascertainable due to lack of both a maturity value and the dates of issue and maturity.

Nonmonetary assets such as bushels of wheat and rye were given by Hoover to reduce the balance. He also performed the labor of "hoeing" to reduce the balance. An examination of other customer accounts revealed that a myriad of services and assets were exchanged for credit. The following is a sample of such services and assets:

Assets and Services Exchanged for Credit	*Amount of Credit*
1 bbl cider	$10.00
By two turkeys	3.00
By boarding	10.40
(By boarding 52 meals)	
By 10½ lbs. of mutton	1.37½*
By 350 ft. rails	4.37½
By one day's work	1.75
By 1 pair boots	9.00
By 3 jugs	7.50
By cow pasture	1.00

*Note the use of the "½ cent."

In preparing the preceding schedule, the author detected a significant differential in the value of labor relative to the value of certain commodities when compared to current relationships. After a review of the accounts and the preceding schedule, a laborer's wage was estimated to be $1.75 per day; this rate is assumed in the following table:

Commodity	*Days of Labor Required for Purchases*
1 pair of boots ($9.00)	5.1
1 barrel of cider ($10.00)	5.7
1 turkey ($1.50)	.85

If these values are representative of the values existing in 1868, the contrast with today's values is pronounced. However, the above table is constructed with *prima facie* evidence only and has not been researched; it is presented as a point of interest.

Payroll Accounting

Since cash disbursements were not entered in the daybook, the magnitude of employee activity is obscured; however, there is evidence of cash advances to part-time employees (again, credit transactions). In such an instance, the employee's A/R-sub account was debited for the amount received, with the corresponding notation "to cash." As the employee labored, his account was credited with the notation "for work."

Banking Functions

In addition to the conventional services provided by the mill, some equally important but not so obvious services were provided; namely, financial services. The following services previously mentioned deserve repetition in a different context.

The mill routinely transferred balances from one customer's account to another thereby simultaneously facilitating the credit function and the exchange process. Banks currently provide these services in the form of consumer credit vehicles (e.g., VISA, Mastercharge, unsecured loans) and checking accounts. Cash advances (loans) were frequently made to employees who repaid the loans in labor. Abundant evidence suggests that notes were a common form of payment and were discounted routinely.

Concluding Remarks

As research on this paper progressed, the author viewed with increasing appreciation, the magnitude and intimacy of economic dependency within the local community. The extended use and acceptance of barter as a means of exchange attests to the dependency. The study of these antiquated records and the related economic activity leaves the author a bit envious of those rather simple and humanistic times which have all but vanished in the contemporary world of business.

FOOTNOTES

[1]The deed search was conducted at the Centre County Court House located in Bellefonte, Pennsylvania.

[2]Based on conversation with Clair M. Smith, employee of the mill from 1915 to 1925 and grandson of William D. Smith.

[3]On January 1, 1960, the First National Bank of Bellefonte and the Bellefonte Trust Company merged under the amended Charter of the Bellefonte Trust Company as the First Bellefonte Bank and Trust Company. On January 1, 1966, the Altoona Central Bank and the First Bellefonte Bank and Trust Company merged to form what is currently, the Mid-State Bank and Trust Company.

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BOOK REVIEWS

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Committee on Commemoration of One Hundred Years of Modern Accounting, Japan Accounting Association, *One Hundred Years of Modern Accounting* (Tokyo: Nihon-Kaikei-Kenkyu-Yakkai, 1978, pp. 414, price not available).

Reviewed by
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The Western bookkeeping system was introduced into Japan in 1873 when two historic books were published. One is Gin-Ko-Boki-Sei-Ho (Japanese version of *Comprehensive Bookkeeping for Banks*) by A. A. Shand (1844-1930), which was published by the Ministry of Finance of Japan for the use of the First National Bank. The other is Cho-Ai-No-Ho (*Bookkeeping*) by Yukichi Fukuzawa (1834-1901), which is a Japanese version and adaptation of *Common School Bookkeeping* by H. B. Bryant and H. D. Stratton (1871).

Time rolls on and a century has passed. In 1973, the Japan Accounting Association (JAA) celebrated the centenary of Japan's modern accounting system, and planned a commemorative publication under the cordial auspices of the business communities. In 1978, JAA carried through the plan and published this book entitled *One Hundred Years of Modern Accounting*.

This book consists of two parts. The first part includes seven articles written by leading professors, which trace the growth of Japan's accounting education and profession during 1873-1945. The second part is devoted to an extensive bibliography of bookkeeping, accounting (financial accounting), cost accounting, auditing, financial analysis, and accounting rules and regulations during the same period.

The seven articles are as follows: "One Hundred Years of Japan's Accounting System," by Professor Kiyoshi Kurosawa; "Accounting Education—Past and Present," by Professor Rintaro Aoki; "Japan's

Original Accounting System and Western Bookkeeping," by Professor Eiichiro Ogura; "Development of Japanese Legal System for Financial Reporting," by Professor Ichiro Katano; "Auditors' System—Now and Perspective," by Professor Otojiro Kubota; "Development of Corporate Accounting and Public Nuisance," by Professor Yasuichi Sakamoto; and "On the Significance of the 6th Year of Meiji (1873) on the Historical Development of Japan's Bookkeeping System," by Mr. Kojiro Nishikawa.

These articles are based on the manuscripts of their speeches given at the centennial celebrations in Tokyo and Osaka, on October 31, 1973 and November 10, 1973, respectively. They provide a bird's eye view of the historical development of Japanese accounting.

The bibliography in the second part of the book is arranged both in chronological order and by subject, and it lists no less than 4,500 books. This bibliography affords a comprehensive picture of the origins and development of modern accounting in Japan.

As a Japanese proverb, "On-ko-chi-shin" (Taking a leaf out of a wise man's book) says, history is a fertile source for future development. Many accountants, both academic and professional, will benefit greatly from this book.

F. R. M. De Paula, *Developments in Accounting* (London: Sir Isaac Pitman & Sons, Ltd., 1948. Reprint edition, New York: Arno Press, 1978, pp. xiv, 278, $22.00).

Reviewed by
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This reprint of a 1948 edition is one of a series of noteworthy historical publications within the Arno Press collection relating to "The Development of Contemporary Accounting Thought." It contains a praiseworthy profile, properly deserved, of the author by Steve Zeff. As indicated by Zeff, De Paula was a man in advance of his time. He was a true pioneer, an intellectual, and a statesman. It is a book well worth reading. The book is organized into four parts: Accounting Principles, Industrial Planning & Control, Miscellaneous (education, fraud detection, trusts and government contracts), and Conclusions.

It is interesting to note that the author's testimony before a legislative committee concerning accounting principles and disclosure occurred in May 1943 and 1944. That is, the end of World War II was foreseen and the need to improve corporate reporting was recognized. Further, the reader will be impressed with the reliance De Paula placed on accounting education in the United States along with American disclosures relating to holding companies; i.e., consolidated financial statements, and U. S. publications on financial planning and control in industry. He attributes his source of new ideas to wide reading of American literature. This effort occurred during the first two decades of this century. As one follows the chronology of dates, it becomes apparent that change, particularly drastic change, occurs very slowly. As in this country, acceptability, not fiat, is the cornerstone underlying the authority of accounting principles.

De Paula testified and wrote eloquently on the need to eliminate secret reserves. He correctly indicated, repetitively, that excess conservatism is misleading. He focused on the need for precise, uniform terminology, disclosure of fixed asset historical cost and accumulated depreciation (although he advocated separate recording of obsolescence), market value for securities held for investment, precise delineation of income tax expense (i.e., relate charge to fiscal period during which taxable income was earned), and consistency between periods.

Prior to the early 1940s, the balance sheet was regarded as the key statement. One cannot help but wonder if De Paula's stress on the income statement wasn't the stimulus for such change in Great Britain? He was eloquent and thoughtful in his essays. Some of his ideas are today's research topics pursued by the Financial Accounting Standards Board. In reading his essays, the reader gains new insight into topics with which the profession has currently devoted much time; e.g., segment disclosure, equity method and consolidated financial statements, foreign currency translations and the need for formal, enunciated principles (i.e., conceptual framework). De Paula deplored the lack of an authoritative rule-making body, and one concludes that he would be an avid supporter of the Financial Accounting Standards Board.

In addition to his invaluable contribution to concepts, technique and the educational process, his book contains gems of eloquence and interesting tidbits of accounting history. For example, Chapter X, concerns the interpretation of accounts. His opening sentence is as follows:

> It may be said that the interpretation of accounts is the art of making figures speak and figures speak to those who understand the language.

Also, Accountancy as a profession started in Scotland. The Society of Accountants in Edinburgh obtained its charter in 1854. His first several pages in Chapter XI on Accountancy in Commerce would serve as a stimulating handout to students in basic principles courses. The relevance of his ideas is impressive and would make for stimulating discussion in a graduate seminar.

This collection of De Paula's essays, testimony, letters, and articles will foster an appreciation of current accounting issues relating to principles and disclosure. The parts relating to industry and commerce will furnish a number of useful distributions to beginning students in accounting. His comments are as applicable today as they were a half-century ago. This reviewer cannot help but believe that they would favorably influence the serious student into considering accounting as a major. The book is recommended reading for all accounting educators.

J. R. Edwards, *Company Legislation and Changing Patterns of Disclosure in British Company Accounts 1900-1940* (London: The Institute of Chartered Accountants in England and Wales, 1981, pp. 77, £ 5.95p).

Reviewed by
Michael J. Mepham
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This interesting study by John Edwards, of the University of Wales, is based on an examination of the accounts of 12 quoted companies in iron and steel making during the first forty years of this century. The author acknowledges that this approach and the small sample size inhibits attempts to generalize but, within these limitations, he sets himself the task of analyzing:

"1. the disclosure practices employed by companies during the period 1900-40.
2. differences in disclosure practices both between companies and over time.
3. relationships between disclosure practices and legal requirements."

As early as 1844, a British Companies Act had required an audited "full and fair" balance sheet to be presented at each ordinary meeting of shareholders but this requirement was jettisoned 12 years later and it was not until 1900 that there began a gradual return towards this sort of regulation. In the period under review, three major revisions of company law had accounting implications. First, the Companies Act 1900 made an audit obligatory and (by implication) required a company to issue a balance sheet to shareholders present at the annual general meeting. Second, the Companies Act 1907 required each public company to file, with the Registrar of Companies, a balance sheet giving "a summary of its capital, its liabilities, and its assets, giving such details as will disclose the general nature of such liabilities and assets and how the values of the fixed assets have been arrived at. . . ." (S.21). Third, the 1928 Companies Act provided that a profit and loss account be prepared for shareholders and extended the balance sheet reporting requirements considerably by setting down minimal disclosure rules.

Each of the above had an effect on the preparation and content of company accounts and there were also several important contemporary legal cases (including the Royal Mail Steam Packet case) that had accounting repercussions. During the period the accountancy profession itself had not commenced work on the development of accounting standards but had restricted its activities to obtaining legal opinion on the interpretation of the legal requirements and making representations to various official company law reform committees. The English Institute's series of "Recommendations on Accounting Principles" did not commence until 1942 and the Stock Exchange only began its attempt to improve disclosure practices in 1939.

Edwards' study emphasises the changing legal framework. He shows that all twelve companies met their legal obligations and, in fact, that they were often in advance of the law by, for example, circulating audited accounts and a directors' report to all members before the law made this compulsory. In some cases they did, however, make use of loopholes; for example, one company filed the same balance sheet for more than 10 consecutive years because the 1907 Act did not stipulate that an up to date statement was required.

The author recognises that other factors, besides company law, affect reporting practices. An investigation of the influence of auditors, shareholders, and internal management would require a study

of the correspondence files and this is not attempted. More surprisingly there is no analysis of the relevant provisions of the companies' Articles of Association. Edwards discounts their importance by saying "they do not specify which figures should appear in the accounts and how these figures should be calculated." It would, however, have been useful to have some detail of the articles and to have known, in particular, the extent to which Table A was adopted.

The study is well organised under four headings: the range of reports, presentation methods, valuation bases and disclosure and many interesting facts emerge. There is, for example, a useful discussion of secret reserves with a quotation from the correspondence of one director admitting that "We have used our subsidiaries to hide profits but the public think otherwise hence our shares are much lower than they ought to be." Only two companies produced any consolidated statements during the period.

The discussion of depreciation is particularly enlightening. Edwards maintains that, in his sample, the regular inclusion of a systematically calculated depreciation charge is a post-1940 phenomenon. There is also a discussion of the development of the British distinction between Reserves (which are appropriations of profit) and Provisions (charges against profit).

The forty-year period covered by this study was one in which many changes took place and in which the legislature adopted the approach of specifying minimum standards of disclosure. This minimum disclosure philosophy continued and developed in the following forty years but the 1981 UK Companies Act has produced a major change by moving to an EEC system based on standardised accounting reports. With such changes occurring this monograph deserves to receive particular attention.

Estabon Hernandez Esteve, Enrique Fernandez Pena, Jose Miguel Prado Caballero, and Francisco Esteo Sanchez, *Issues in Accountability #7: Spanish Accounting—Past and Present* (Glasgow: Strathclyde Convergencies, 1981, pp. 42, £ 3).

Reviewed by
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For those who can overlook poor typeface, inconsistent style and proof-editing—that is for those of us who put substance over form—this monograph represents a treasure. In three compact sections,

the authors provide a description of the evolution of Spanish accounting and record keeping practice, with illustrative appendices and citations. This is not an analytical work—rather it is a complete and well documented "map" of Spanish accounting—the artifacts, artisans, and influences.

The initial brief section provides a perspective on the roots of Spanish accountability. The appendices of the Datini Accounts of 1399 (Barcelona) suggest the importance which accounting historians, such as deRoover, have accorded to Spanish accounting history.

Part II of the monograph by Dr. Hernandez Esteve is an important compilation of the stages of Spanish accounting history from as early as the 1304-1322 period. The author cites archival sources and establishes a chronological array of books of account. He reviews the legal background of accounting developments and traces the origin of early texts. The influence of the royal house in advancing the use of account records is described throughout this section. A useful bibliography completes Part II—including a citation of the important work of Karl P. Kheil (1898) in the early study of Spanish accounting.

Part III is most useful as a contemporary guide to accounting in Spain. This section includes a review of current education in accounting and an outline of the role of Censors (Auditors), as analogous to the French Experts-Comptables.

The origin and role of the Spanish Association of Accountancy and Administration in Business (A.E.C.A.) formed in 1979 and the influence of the Institute of Accounting Planning are considered as background for the description of the General Accounting Plan—and its ten classes of accounts, (Numbers 1 through 9, with Class "O" being reserved for contingencies).

The Commercial Code, including the 1973 revisions, is set forth as it influences record keeping and accounting. The legal section also summarizes company law and concentrated or consolidated firms. The section concludes by describing the community cooperatives as an important factor in the economic activity of Spain. The role which accounting plays in the operation of the cooperative is alluded to briefly in this section.

As an historian, Sections I and II are helpful additions to the slight taxonomy of Spanish accounting history. Section III is not historical material—albeit useful to anyone who is interested in the European scene.

This work will be of value to all historians because it represents a compendium that is convenient and authoritative. It is unfortunate that the many typing errors, the irregular spacing, inconsistent typeface, and confusing system of page numbering (pages are numbered by section, not in one entire sequence) detract from the substance.

I judge the book by its contents—not its cover—but the advocates of accounting history will not be well served if good materials are afforded second tier style and format. The authors who contributed to this monograph have made important contributions. Hopefully their efforts will not be too badly injured by the irregular quality of the publication format.

Hugh P. Hughes, *Goodwill in Accounting: A History of the Issues and Problems* (Atlanta: Georgia State University, 1982, pp. viii, 223, $20.00).

Reviewed by
Gyan Chandra
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Accounting for goodwill has been one of the most intriguing problems faced by accountants. A number of accounting theoreticians have tried to define and value it over the last one hundred years or so and yet the subject has remained elusive. The controversy surrounding its treatment has a tendency of fading and flaring up every now and then. Originally submitted as a Ph.D. dissertation, Hughes's monograph (after suitable revisions in the dissertation) on *Goodwill in Accounting* offers a rich and extensive review of the literature on the subject.

The author's principal objective of the study is "to develop a cohesive and comprehensive history of the issues and problems related to accounting concept and treatment of goodwill" (p. 2). He chose the period beginning with the 1880s for his study and has divided the study into nine chapters. After introducing the subject and providing a brief background in the first two chapters, he reviewed the history of the developments in the next five chapters. The last two chapters are devoted to the inquiry into the nature of goodwill in the present day context and to the conclusions of the study. This reviewer considers the middle five chapters on the historical developments as the crux of the monograph. The historical review has been divided into five segments: 1884-1909; 1910-1929;

1930-1944; 1945-1957; and 1958-1980. A chapter is devoted to each of these segments and the author has organized the review by issues concerning the business environment, the accounting environment, initial valuation of goodwill, its subsequent treatment, its financial presentation and disclosure, its auditing considerations, and its tax considerations.

Hughes starts the study with a working definition of goodwill (i.e., it represents an above-average ability to make a profit, has no physical substance and is a product of its environment) and traces its developments all the way from manorial times until its first legal definition given in an English court in 1810. The first accounting article on goodwill seems to have been published in 1884 and the first book on the subject was published in 1897. American authors started writing about it at the turn of the 20th century. By the 1930s, goodwill had become a full-fledged controversial subject attracting much attention of professional accountants and academe. The accountants openly debated the question of its initial valuation and subsequent treatment. Finally, in 1944, the AICPA's Committee on Accounting Procedure issued *Accounting Research Bulletin No. 24* requiring cost to be the basis for all intangibles. However, the controversy continued on the question of its subsequent treatment. *ARB No. 24* presented a compromise, "Amortization, though permitted, was neither encouraged nor discouraged and was given about equal stature with permanent retention" (p. 115). The author gives a rich account of the controversy surrounding pooling of interests vs. purchase of business accounting and its implications on goodwill. He has extensively traced the developments leading to the issuance of Accounting Principles Board *Opinions No. 16* and *17*. *Opinion No. 17* requires amortization of goodwill over a maximum period of 40 years which seems to have settled the issue of its subsequent treatment.

The author has used the inductive approach in reviewing the historical developments and the deductive approach in developing a basic framework for analyzing the nature of goodwill. He uses Veblen's institutional theory and Galbraith's contemporary interpretation of business to analyze the concept of goodwill. He summarizes his analysis in the following definition of goodwill: "a differential advantage accruing to a corporation in terms of its dominant goals—the ability to generate superior profits by whatever means to finance the technostructure's growth, usually by selling goods through purposeful manipulation of the consumer's customs and habits" (p. 194).

The monograph is a well written treatise and offers a rich commentary on the contemporary business environment. The review of the literature from 1958-1980 throws light not only on the technical developments but also on the profession and personalities. The author claims to have reviewed approximately 1,000 books and articles and the extensive bibliography provided could be very helpful in future research in accounting theory. Publications of the American Accounting Association, AICPA, Briloff, Canning, Catlett and Olson, Dicksee, Galbraith, Gilman, Hatfield, Leake, May, Montgomery, Moonitz, Paton, Spacek, Veblen, Yang, and many others have been extensively reviewed and quoted. The monograph is not limited to goodwill alone. It should be considered more on goodwill in accounting theory through the ages and as such it is a part of the broad subject of accounting theory. It is concise and interesting. This reviewer was impressed by the extensive review of the literature on the subject and will recommend it to serious students of accounting theory. The reviewer wishes the author had also added a chapter on the normative approach to goodwill in accounting. But, as the author says, the last chapter has not been written on the subject. "The jury is still out" and hopefully the monograph will encourage others to work in the area.

Harold Q. Langenderfer, *The Federal Income Tax: 1861 to 1872,* 2 vols. (New York: Arno Press, 1980, pp. 835, $70.00).

Reviewed by
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Langenderfer, in this publication of his 1954 doctoral dissertation, presents a detailed discussion of a federal individual income tax which predated the Sixteenth Amendment to the Constitution. As the title indicates, this two-volume treatise examines the income tax levied on the American people during the Civil War and the reconstruction period which followed. Generally, the first section of this work reviews the historical events, political attitudes and fiscal policies which preceded enactment of the Civil War tax (Chapters 1-4). The second section describes the revenue acts passed between 1861 and 1870 including extensive coverage of the related Congressional debates and subsequent administrative problems (Chapters 5-9). The final section gives a critique and summary of this short-lived, but important revenue generating device (Chapters 10 and 11).

The United States had existed as a nation approximately seventy years when the trauma of the Southern Secession arose. The nation's fiscal policies until that time reflected the influence of the mother country, Great Britain, and an overt distrust—if not dislike—of anything British. The author chose to begin his study by outlining the events which helped shape these political and fiscal attitudes. He recounts the British fiscal experiences, especially with income taxation, and focuses on the American reaction, antagonistic and yet imitative, to Great Britain's tax system. The several individual state income taxes which had existed at various times before 1860 are discussed along with a detailed review of the revenue measures employed by the U. S. during the period since becoming a nation. As the author completes the background material for the Civil War tax, one is struck by how unsuspecting the country's leaders were of the monumental taxing policy upon which they were about to embark.

The initial revenue measure creating the Civil War income tax was passed in 1861. A major segment of the author's work consists of presenting an exacting, chronological outline of the Congressional debates preceding this revenue act and those which were to follow. Extensive excerpts from the legislative oratory are included. For the various prominent speakers highlighted in the coverage, brief biographical sketches are footnoted. The author also interjects timely military and political updates. These historical interludes enable the reader to gain a clearer understanding of the influences forming a particular speaker's stand. (Under consideration were such important philosophical issues as direct versus indirect taxation and an operational definition of income.)

The Civil War income tax was as susceptible to revision as ours is today. During the period 1861 to 1870, eight revenue acts were enacted. For each of these, the author reviews the Congressional debate, outlines the statutory requirements, and analyzes the new bill in regards to (1) Concepts of Income, (2) Deductions, (3) Exemptions, (4) Rates, (5) Capital Gains, (6) Administration, (7) Special Corporations, and (8) Miscellaneous Provisions. This presentation, although at times tedious, does allow the tax scholar to quickly determine the specific contents of a given revenue measure.

The end to this emergency taxing experiment was dictated by a sunset provision inserted in the Revenue Act of 1867. The descendant of the initial 1861 tax was phased out in 1873. Even the exit of this controversial measure triggered disagreements. Congressmen from agricultural regions lauded the income tax as more desirable

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than any of the alternatives suggested to replace it, while those delegates from industrial areas demanded the tax's demise. The author details the removal arguments in the same manner as he recorded the discussion surrounding the tax's stormy existence.

Langenderfer completes his treatise with a critique of this early U. S. income tax. In a broader sense, however, the book itself is a critique of the tax. It furnishes an exhaustive scrutiny of the Civil War tax and thus allows the reader to make an individual critical evaluation. As a thought provoker for an individual income tax or tax policy course the book supplies an excellent background source. Many of the hotly debated issues of the 1982 Tax Act, such as withholding at the source on interest and dividends, were common features of the Civil War tax. Perhaps this work's real value, then, is its ability to stimulate thought and to remind the reader that viewing the past often helps put current developments in proper perspective.

The Federal Income Tax: 1861 to 1872 gives a detailed presentation of a technical, legal area. The book is sometimes overly detailed and repetitious. The detail can be traced quite properly to the subject matter; the repetition reflects its dissertation origins. These flaws, however, in no way impair the value of this treatise as a useful and more-than-adequate reference text.

Howard F. Stettler, Editor, *Auditing Symposium IV: Proceedings of the 1978 Touche Ross/University of Kansas Symposium on Auditing Problems* (Lawrence, Kansas: School of Business, University of Kansas, 1979, pp. 133, $6.00).

Reviewed by
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This volume contains the papers for the 1978 auditing symposium at the University of Kansas. Eight papers were presented along with responses from six discussants.

The first paper was "Internal Auditing—A Historical Perspective and Future Directions" by Victor Z. Brink. Accounting historians will find this first paper interesting. Brink discusses the historical development of modern internal auditing. He starts in 1941 with the founding of the Institute of Internal Auditors (of which Brink was actively involved) and with the publication of his *Internal Auditing, Principles and Practices*.

He traced the development of internal auditing from its emphasis on compliance with lower-level accounting, operational procedures,

protection of assets and detection of fraud through its operational auditing emphasis to the contemporary scene. He sees internal audit departments having primary responsibility to management and secondary responsibility to the Board of Directors—via the audit committee, with the internal auditor reporting to the chief executive officer or the senior vice president and working closely with the external auditor.

The discussant's response was by Lawrence B. Sawyer. Sawyer's response was interesting as he takes Brink's historical development of internal auditing back in antiquity to the Mesopotamian civilization about 3000 B.C. where scribes summarized lists of transactions. He discusses the Greeks' preference for slaves as auditors because they considered a tortured slave's testimony more trustworthy than a free man's oath.

Sawyer discusses the dual responsibilities of the internal auditor to management and to the board. He concludes by recommending a degree in internal auditing or an MBA with a major in management-oriented auditing along with a worldwide certification program and continuing education requirements.

The second paper is "Analytical Auditing: A Status Report" by Rodney J. Anderson. Anderson is a pioneer in analytical auditing. He discusses the historical development of analytical auditing in the early 1960s. Analytical auditing takes a systems-oriented approach using flow charting, limited tests of transactions, internal control evaluation, and appropriate compliance and substantive verification procedures. Later, EDP applications were incorporated in the process.

"Sampling Risk vs. Nonsampling Risk in the Auditor's Logic Process," by William L. Felix, Jr., is presented next. Felix contends that the risk of nonsampling errors in statistical sampling applications is of equal or greater significance in evaluating the results of the auditing procedures. The discussant of Felix's paper was Robert K. Elliot. His discussion emphasized that the concepts of sampling and nonsampling error apply equally to statistical and nonstatistical sampling. Elliot explained a statistical sampling pilot test conducted by PM&M in 1968-1969. The results led to procedures for eliminating nonsampling errors through the use of computers, the use of hypothesis testing, and a quality control program using statistical audit specialists trained to monitor each statistical application.

The fourth paper is "Third Party Confirmation Requests: A Third New Approach Utilizing An Expanded Field" by Horton L. Sorkin.

Sorkin discusses the use of an expanded field accounts receivable confirmation technique which listed three different figures for the current balance. The respondent would be forced to select one balance as the correct balance. This method was designed to reduce the Type II errors associated with traditional confirmations.

The fifth paper is "Has the Accounting Profession Lost Control of Its Destiny?" by D. R. Carmichael. Carmichael discusses the accounting profession in the age of consumerism and notes the effect of consumerism on the courts.

"The Role of Auditing Theory in Education and Practice" by Robert E. Hamilton presented auditing theory from a very different viewpoint. He parallels auditing theorists with theorists in finance and concludes that a theory of auditing would seek to explain how solutions to problems faced in allocating resources through time are facilitated by the existence of auditors, audit firms, and auditing institutions.

Fortunately, R. K. Mautz is the discussant on Hamilton's paper. Mautz discusses the different approaches to auditing theory by Hamilton and himself. Mautz stated that his micro approach to auditing theory offers immediate possibilities for improvement in auditing education and practice. Mautz also expressed concern over the widening gap between academics and practitioners.

Richard H. Murray presented "Resolving the Auditor Liability Problem—An Appraisal of Some Alternatives." He questions whether the risk of liability has improved auditing performance and whether the risks are more detrimental to the public than the benefits. He states that insurance does not provide adequate protection to the profession and suggests several alternatives to insurance.

"Observation on the State of Shareholder Participation in Corporate Governance" by Barbara Leventhal concluded the symposium. Leventhal cites calls for reform in corporate governance due to a decline in public confidence and a rise to Congressional concern.

Accounting historians will find the first two papers of particular interest. The other papers are still of interest even though they were written in 1978.

Zeff, Stephen A., Editor, *Selected Dickinson Lectures in Accounting: 1936-1952* (New York: Arno Press, 1978, irregular pagination, $31.00).

Reviewed by
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In *Selected Dickinson Lectures in Accounting 1936-1952* Arno Press has reprinted six of the Dickinson lectures given at the Graduate School of Business Administration of Harvard University. The lectures present the views of well-known leaders of the accounting profession at some critical periods of accounting history. In the first lecture, for example, presented during 1936-1937, George O. May spoke on "Improvement in Financial Accounts" and emphasized the need for both accountants and others to understand the nature of accounting information. He argues that all accounts

> are necessarily tentative and approximate; in many cases alternative methods of accounting which will produce materially different results may be equally permissible; and therefore the weight to be attached to any accounts can only be determined upon consideration of the bases on which they have been prepared (which may legitimately vary according to the purpose for which they are intended) and of the competence and integrity of those by whom they have been prepared.

For May this understanding is essential in order to deal with the question of improvements in financial reporting. He provides his own history of corporations and corporate reporting and discusses important accounting issues of the day, such as the use of historical cost for fixed assets and depreciation, cost or market for inventories, and corrections relating to prior periods. In dealing with these areas May argues against absolute uniformity in accounting procedure because accounting deals with a business world full of uncertainty and change; although accounting sometimes has been compared to engineering, the engineer deals with the physical world "while in financial accounts the accountant is dealing with things metaphysical."

In 1939-1940 William A. Paton spoke on "Recent and Prospective Developments in Accounting Theory" and emphasized questions of income measurement. He recognized the significance of the change which came about in the 1930s shifting the focus of accounting

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away from the balance sheet and commercial creditors to the income statement and investors. In dealing with questions of performance measurement Paton presents his arguments on a variety of issues ranging from the treatment of purchase discounts and use of differential costs to his desire to eliminate the ranking of costs, such as gross profit, seen as "a relic of the early history of accounting for mercantile concerns." Paton also warns against too frequent reporting of income information because of its tentative nature and the effects such information can have on stock prices. After presenting a skillful discussion of the nature of costs and value, Paton regretfully argues against the use of replacement cost accounting, not on theoretical bases, but because of the legal framework within which accounting must operate.

In 1940-1941 Walter A. Staub spoke on "Auditing Developments During the Present Century." Staub was well qualified to present his views for he had spent forty years in public accounting, thirty of them as a partner in the New York office of Lybrand, Ross Bros. & Montgomery and, at the time of his talk, was a member of the Committee on Accounting Procedure of the American Institute of Accountants. Staub describes from first-hand experience auditing procedure in the early days of the century as basically an examination of cash records, and goes on to show the changes brought about by a variety of forces ranging from income taxes to the New York Stock Exchange and the Interstate Commerce Commission.

Staub also provides an interesting perspective on the auditing practices of the 1930s, discussing the nature of accounting evidence and what had been learned over the years to bring about change. His views on internal control, internal auditing, and the role of the controller reflect the concerns of the late 1930s growing out of the McKesson & Robbins case. Staub's discussion of the auditor's report also is of interest to accounting historians, for he shows the evolution of the language of the report, the impact of McKesson & Robbins, and the need for the public to understand the limitations of the audit.

Henry Rand Hatfield presented a different point of view when he spoke on "Surplus and Dividends" in 1940-1941. From a more academic perspective he dealt with the basic nature of capital and surplus, raising questions in areas that still needed to be settled, such as whether a premium on capital stock represented capital or surplus, and what items should be charged to surplus rather than to the current income account. Hatfield's discussion of dividends leads him into a witty and acerbic presentation of arguments on the

appreciation of assets. He provides a wide variety of views ranging from various court cases to the early views of Paton, Dickinson, McKinsey, and Wildman. Hatfield finally concludes that the strongest argument against showing appreciation rests on its lack of conservatism. For Hatfield, however, conservatism is not a strong enough argument; he notes that in accounting it is a "weasel word" meaning whatever the user wanted it to mean. He concludes that "appreciation may be recognized, with the obvious understanding that the appreciation must be genuine, objectively verified, and not arbitrarily done in order to make a 'pretty balance sheet.' "

In 1947-1948 George D. Bailey, one of the founders of the firm of Touche, Niven, Bailey, & Smart, presented lectures on "Problems in Reporting Corporation Income," and "Concepts of Income." For Bailey the crucial issue is the need for "the sharpest possible determination of the earnings of the corporation for each year's operation, prepared on the basis of certain generally accepted standards for all business so that progress of each corporation will be measured by the same measuring stick." In order to further this aim he discusses a variety of reporting issues, ranging from the classification of expenses to the names that should be used for various accounts. Bailey was chairman of the Institute's Committee on Accounting Procedure from 1944-1947 and he views the Accounting Research Bulletins as a means to reach the goal of income measurement, reduce the variety of practices, and increase comparability. Also of interest is Bailey's discussion of the all-inclusive income statement relative to the events of the 1920s, 1930s, and 1940s, and his ideas of how accounting could cope with the effects of rising prices on earnings.

Howard Clark Greer, a financial executive, spoke on "Cost Factors in Price-Making" in 1951-1952 in the last lecture included in this compilation. Greer was concerned with the interrelationships among price, cost, and volume, and argues against the simple assumption that price is a function solely of costs plus a profit margin. Greer discusses the variety of factors involved and the differences among various industries. He demonstrates a sharp understanding of the variety of market forces brought to bear on pricing questions.

This selection of Dickinson lectures provides a valuable source for accounting historians, particularly for the period of the late 1930s and early 1940s. An introduction by Stephen A. Zeff adds background on the individuals and the lectures. The book provides interesting insights not only for the specific issues raised but for the manner in which questions are posed and the variety of perspectives presented.

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DOCTORAL RESEARCH

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It is generally acknowledged that the accounting function exists to serve information needs within a particular cultural environment and that it must, therefore, reflect related social, economic, political, and legal influences. Further, that as a consequence, these influences, if identifiable, go a long way towards explaining international differences in accounting thought and practice.

This notion of cultural conditioning seems to have found more recognition by internationally-oriented accounting historians, however, than acceptance by those recommending accounting systems design features for countries which need innovational or adaptational changes. The case of developing countries provides a good illustration. Many nations which became independent after World War II inherited exogenously-imposed accounting systems which had claims to cultural relevance because the governors rather than the governed were the dominant clients. After independence, however, prospects for indigenously-selected and culturally-differentiated accounting systems dimmed for those host countries which accepted significant foreign investment projects as a strategy for economic growth. The information needs of the investee, usually from a different culture, had to affect the design of accounting systems for the investment projects and the accounting training programs for the local staff. These activities can have a swamping effect on indigenous efforts, depending on the economic importance of the investee. Integrated systems could offer a compromise but the literature on hybrid system design for culturally-differentiated clients, although highly relevant, is unfortunately sparse. It would certainly be important to have this type of perspective in China, for example, where private enterprise accounting technology is currently being imported despite institutional incongruencies. Part of the problem can be traced to the fact that cross-cultural accounting research is a relatively recent phenomenon. Also, there are remarkably few empirical studies of the impact of cultural variables on the

design of accounting information systems. This compares unfavorably with the research interest of other social sciences in historical and descriptive studies.

In the hope of stimulating this type of accounting research, the current survey of recent doctoral dissertations is devoted exclusively to studies by other social scientists which examine, over time, certain factors or relationships affecting theory and practice at home or abroad. The selection starts with two studies of railroad operations: one by Marple, a sociologist, who examines technology as a strategy for environmental survivorship; the other by Fleckles, an historian, who traces the effects of public policy changes on the development of the French national railroads. These are followed by two dissertations involving Thailand: an economist, Jumpasut, examines the structure of the natural rubber industry and the industry's impact on the Thai economy, while Meenaphant, an agricultural economist, looks into the effects of three major factors on the rice export sector. The geographical location then shifts to Korea. Shin, an economist, analyzes the role of foreign capital inflows and their effects on the Korean economy. Yoo, from business administration, investigates the relationship between industry structure and degree of foreign direct investment, using Korea as a case study. The selection concludes with three studies, each dealing with the effects of public policy on national development: Rodriguez, an historian, on Ecuador; Bawuah, an economist, on Ghana; and Vakilifard, an agricultural economist, on Iran.

Technology and Organization: Steel Rail Innovation and Railroad Survivorship in the American Manufacturing Region, 1860-1890 (University of Cincinnati, 1981; 42/01, p. 402-A)[1] by David Paul Marple. The major goal of this dissertation was to evaluate the role of technology selection as an organizational strategy for mediating environmental interdependence. To find an illustration of this relationship, Marple focused on railroad operation in the U. S. manufacturing belt during three decades in the latter half of the nineteenth century. Steel rail turned out to be a prominent candidate in his search for a technological element which could be considered as critical for successful adaptation. Two indicators were selected to measure this technological variable: the date that the steel rail was first used, and the percentage of steel track to total track in 1880. Because technology selection does not take place in isolation, it was assumed that the barriers to entry of new railroads into

[1] *Dissertation Abstracts International*, volume and page references.

the network, which thereby permitted existing roads to adopt new technology and administrative techniques, emanated from the railroad's internal structure. These features of organizational structure were represented by railroad size in terms of total track in operation, and its age, dating from the first rail construction. It was hypothesized that those railroads which introduced steel track earliest and more extensively would be the most likely to have adapted or survived by 1890. Also, that the survivors by 1890 would be even more likely to have been the older and larger railroads.

The main sources of data were the 1880 U. S. Census of Internal Transportation and volumes included in *Poor's Manual* of railroad investment for the period 1868-1900. The U. S. railroads were formed into two samples: those for which dates for first rail construction were available, and those which represented the New England area of the manufacturing belt. These samples provided some evidence that a railroad's age and size contributed to its survival, as did the steel rail innovation to some extent. As for survivorship differentials, it appeared that age played a greater role than size. Further, the date of steel rail innovation had a far greater impact on survivorship than its extent. It was also noted that as railroads improved their operating efficiency, freight rates decreased significantly. Consequently, the analysis was extended to look for any relationship between these rate reductions and steel rail introduction, using a small sample of railroads located nationwide. It was found that immediately after the steel rail was introduced the greatest reductions occurred in average rates, but with respect to long run rate reductions no relationship was found.

The State and the Beginnings of the Railroad Grandes Lignes Network in France, 1820-1842 (University of California, Berkeley, 1981; 42/07, p. 3264-A) by John Robert Fleckles. In France, the concept of national planning was put forward in the seventeenth century and exemplified some two centuries later by the formation of national railroad plans. This study's chief aim was to understand how the state defined the national interests which were to be served by the long distance railroad networks. Also, how the various official bodies, which included the parliament and Department commissions, applied these interests in the planning and development process. The first such *grandes lignes,* Paris-Orleans and Paris-Rouen, were opened in 1843 and provide the main focus. The dissertation is organized into two parts. The first examines the philosophical background by contrasting some of the leading ideas in France

about relationships between the state and its citizens. Colbert's successful practice of mercantilism in the mid-seventeenth century, for example, encouraged industrial growth through state subsidies and tariff protection. The prices and qualities of agricultural and industrial products were strictly regulated, the use of natural resources was restricted, and strong efforts were made to break down internal trade barriers. Alternative policies were suggested by Saint-Simon about a century and a half later. He also looked for an alliance between the state and business interests. However, in his view a better social order would result if industrial and scientific leaders, who already represented controlling forces in society, would reorganize and direct the state in such a way as to recognize explicitly the brotherhood of man. Others putting forward public/private policy choices with respect to the railroad development suggested adoption of the British approach whereby private plans were submitted to Parliament for approval.

In part two, major public policies are extracted from the official processes by which railroad development proceeded. A basic consideration was to determine the goals of the planned railroad system and it was evident from the proposed network grid that passenger transport and international trade were accorded priority over the interests of internal commerce. The latter, the state considered, would be better served by the waterways. Thus, transportation was looked at from a total system perspective, particular modes were selected for particular purposes based on particular strengths, and efforts were made to minimize the debilitating effects of competition between alternatives. In the interest of keeping down long distance rates, rail routes were designed to be as direct and short as possible. This policy aroused the opposition of local officials, as well as entrepreneurs who considered that the construction of short lines would prove unprofitable. An alternative to the reluctance of the private sector to risk its own capital would have been for the state to undertake the construction itself. Mainly for ideological reasons, however, parliament rejected the government's proposal for public works treatment. In the event, it was decided to promote a "spirit of association" which attempted to stimulate a sense of responsibility in both investment and management attitudes. Material encouragement took the form of financial assistance, granted in 1840 to the first major construction companies. At this same time, a major shift took place in public policy when the state started to support development by the private sector rather than contracting for national development projects. In 1842, public/private sector roles

in the financing and construction of the major railroads, as well as the network routes, were defined in the railroad law.

The Natural Rubber Economy of Thailand (The University of Michigan, 1981; 42/02, p. 796-A) by Prachaya Jumpasut. Thailand is an exotic country, blessed with natural resources. Its central plain, which lies at its heart, produces the most important export, rice. Elephants haul teak from the extensive forests of the northerly mountains. Livestock is raised in the hilly plateaus of the east. Rubber and some minerals come from the jungles of the south and important crops of tobacco and sugar are raised in the peninsula. Jumpasut chose to concentrate on the natural rubber industry and his dissertation examines both the industry's structure and its impact on the economy. He commences by emphasizing the economic importance of the industry and then goes on to discuss demographic data concerning the Thai culture, population characteristics, and the social framework. His third chapter analyzes the structure of the Thai rubber industry. Special emphasis is given to its production and distribution, the determination of costs and prices, the marketing structure and domestic consumption, public policy, and special problems of the industry. The last three chapters are devoted to assessing the industry's economic impact. In chapter four, a supply-response model is developed, building on a two-stage response variant. The relationship describing the decision to plant is the first stage, while planting is one of the independent variables of the output function which forms the second stage. The model is estimated for each of the two major producing regions as well as in the aggregate. It was found that the current real price of natural rubber seems to influence rubber production more than the long-term lagged real price. Also, although production is not affected by the real price of the substitute crop, it is influenced somewhat by rainfall and time trends. The hypothesis that rubber production depends on previous periods' income levels was not supported by the results. In chapter five, input-output tables were used to analyze the industry's interaction with other sectors in order to assess its impact on the domestic economy. These calculations were then augmented by such data as value added, imports, and earnings from foreign exchange, so as to evaluate the rubber sector's overall economic importance. The analysis was then extended to consideration, at both micro and macro levels, of instability problems and the implications of international price stabilization of the natural rubber world market. Commencing with the micro level, the results of the

input-output analysis were utilized with the supply-response model. It was found that revenues would have decreased during the periods 1957-1960 and 1973-1979, and increased during 1961-1972, had there been price stabilization. To test for possible macro effects, an export-instability index was calculated before and after price stabilization. This showed that price stabilization led to an index of smaller magnitude than lack of stabilization. Other tests indicated that rubber was a more stable export than other major alternatives. Comments on the industry's future prospects were included in the final chapter's summary and conclusions.

An Economic Analysis of Thailand's Rice Trade (Rice University, 1981; 42/02, p. 792-A) by Sorrayuth Meenaphant. Using a variety of techniques, Meenaphant examined three major issues affecting Thailand's rice export sector: government trade policy, trade performance, and the structure of trade preferences. Assessments of the effects of government trade policy on domestic prices and exports were based on both theoretical and empirical analyses. Trade performance was evaluated by constructing a dynamic simultaneous equation econometric model, estimated for the period 1959-1976. The relative competitiveness of Thai rice exports during this time period was measured through the quantitative decomposition of export growth into market, growth, competitiveness, and interaction effects components. The structure of trade preferences was determined by a probabilistic trade flow model. Government trade policy, it was found, reduced both export volume and domestic rice prices below equilibrium levels, given no intervention. As to the issue of whether or not domestic rice prices would be stabilized by a rice premium policy, aimed at protecting the domestic market from external price fluctuations, analysis suggested that such a policy would be relatively effective only if there were high elasticity of export price. However, this elasticity was only estimated to be 1.07. Consequently, the premium policy was not very effective. Analysis with respect to dynamic multipliers showed that export price would rise by just under 4 cents if the export premium were to increase by one unit, bringing about a fall of approximately 155 metric tons in export volume. For U. S. concessional sales, export price would fall by 9 cents per metric ton for any one thousand metric ton increase. In the short run, this would have little effect on paddy production because of the lead time required for a production response. On a long-run basis, however, the results of two policy simulation experiments suggested that farmers would gain initially

from high paddy prices and suffer expansion losses in later periods. With respect to trade performance, the significant decline in rice exports during the period studied could be attributed to two main causes: (1) the fact that rice exports were concentrated in low or no-growth markets; and (2) inability to compensate by penetrating high-growth markets. A probabilistic model of rice trade flows was constructed to simulate the trade preference structure of major rice exporters and importers. This model demonstrated the high preference accorded Thai rice in the slow-growth markets of the Far East.

Capital Imports in Economic Development: The Korean Case (Claremont Graduate School, 1980; 42/01, p. 319-A) by Chang Min Shin. Korea is a large, mountainous peninsula, connected with China and the U.S.S.R. by northern land boundaries. The political division of the country at the 38th parallel after World War II shut off the industrial and trading north from the agricultural south, presenting each new nation with particular economic problems. In the south, efforts to establish an industrial base were hampered by limited resources and lack of energy. These factors, combined with mass unemployment exacerbated by an influx of refugees from the north, explain the prevalence of domestic market-oriented small factories and handicrafts. During the past two decades, both the Korean economy and external debt grew very rapidly, giving rise to concern about the nature and effect of foreign capital inflows. The related questions considered in this study were whether or not capital imports had been beneficial to the Korean economy, and whether or not they had been excessive. The dissertation commences with a survey of the literature on international capital borrowing and descriptions of models used in both static and dynamic analyses. Because the empirical evidence of the effects on the growth rate of the host economy of foreign capital inflows shows no clear relationship between domestic savings and foreign capital, such analysis appears to require a specific case study. To do this, a general equilibrium model was constructed, using 26 equations with 26 jointly dependent and 17 predetermined variables. A capital series for each of three economic sectors was constructed to estimate the model's equations in real terms and using ordinary least squares. Accumulation of net capital and net consumption increase were computed and it was concluded that capital imports had had a beneficial impact on the economy. Also, the amount of capital imports had been less than adequate. Given these findings, the study concluded by directing attention to the issues of attracting in-

creased capital inflows to optimum levels as well as maximizing returns by appropriate allocations to competing industries.

Industry Structure and Degree of Foreign Ownership: A Case Study of Foreign Direct Investment in Korea (University of Pennsylvania, 1981; 42/03, p. 1242-A) by Young Yoo. The chief issues addressed in this study are: (1) the degree to which investors establishing foreign subsidiaries are influenced by the industry structure of the investing country; and (2) how this relates to the extent of foreign ownership equity in subsidiaries in the host country. It was hypothesized that degree of ownership is positively related to both industry structure and investment size, but negatively related to the number of subsidiaries in each industry in the host country. Subhypotheses dealt with relationships between: industry structure and number of subsidiaries; investment and number of subsidiaries; market orientation of the subsidiary and degree of foreign ownership; and nationality of the subsidiary and degree of foreign ownership.

Two approaches to the analysis of foreign direct investment (FDI) were utilized in deriving these hypotheses: the industrial organization approach put forward by the U. S. international business theorists, and the macroeconomic approach proposed by Japanese economists. Both schools of thought agree that the investing foreign firms exhibit a "bandwagon syndrome," that is: "they match each other's FDIs." The U. S. school posits that this situation results from overseas exploitation by firms in oligopolistic industries, while the Japanese school rejects the notion that such investment is voluntary. Instead, oligopolistic firms are considered to be forced into overseas operations because of macroeconomic influences. These hypotheses were tested by studying foreign direct investment in Korea by U. S. and Japanese firms, representing the chief investing countries, during the period 1962 to 1976. The statistical techniques used in the data analysis were stepwise correlation and multiple and stepwise regression. It was found that there is a higher ratio of concentration and more oligopolistic association for U. S. FDIs, regardless of their market orientation, than for Japanese. Also, that the bandwagon syndrome is more likely to be associated with firms which have higher rather than lower levels of oligopoly. With respect to the degree of foreign ownership, industry structure appeared to be the most important explanatory variable, offering U. S. FDIs a bargaining advantage over Japanese rivals when negotiating with the host government.

Ecuador's National Development: Government Finances and the Search for Public Policy 1830-1940 (University of California, Los Angeles, 1981; 42/04, pp. 1758-9-A) by Linda Alexander Rodriguez. Ecuador, the Spanish word for equator, is dominated by the Andes mountain ranges. Their high, and frequently fertile, valleys form the sites of several major urban centers, including the capital, Quito. By contrast, the hot and humid valleys north of the Gulf of Guayaquil, in the Pacific coastal region, are the source of Ecuador's major exports: coffee, cacao, and bananas, on which the nation's economy depends. The shortage of materials and labor, combined with the inadequacy of transportation systems, helps to explain the underdeveloped status of manufacturing and industry. As its title indicates, this dissertation makes a long-run assessment of public policy and finance in this country which has been wracked by political turbulence. Its six chapters provide for a long introduction to contemporary problems by devoting more-or-less equal consideration to the nineteenth and twentieth centuries. The so-called "liberal" era marks the period 1830-1925, described in the first half of the study. Initially, the reader is introduced to the factors weighing against national unity: geographical, economic, and political. This is then expanded to explain the influence of regionalism as a key element in the nation's political instability. The third chapter goes on to relate these environmental characteristics to problems of developing public policy and finance in the period 1830-1895. While the state was gradually instituting social programs in welfare, education, and public works, its financial policies were hampered by the need for huge outlays for armed participation in political warfare. The political situation, combined with weak administration and inadequate state revenues, added up to an adverse credit rating for external debt purposes. Thus the government was forced to rely on internal loans, chiefly from banks, to make up for its general revenues deficits.

The remaining three chapters form the second part of the study which examines public policy and finance during the period 1895-1925. Although social programs were under way, the Liberals were unable to make much progress with financial reform, particularly in the areas of introducing effective tax systems and improving fiscal administration. Heavy reliance continued to be placed on public funding through internal bank loans, while allocating general revenues to regional requirements. Consequently, those in the non-coastal regions, particularly the highlands, perceived the close relationship between the government and the coastal bankers as a threat to their own interests. This led to a takeover of economic and

political power by the highlanders from the coastal community at a time when the export economy was staggering from declining productivity and an international economic crisis. In chapter five, Rodriguez evaluates the role of foreign advisors and their interrelationships with local interest groups and the national government. Her particular focus is on the Kemmerer Financial Advisory Mission which spent several months in Ecuador in 1926-1927. This experience provides an illustration of the difficulties involved in implementing reforms of domestic institutions which are proposed by foreigners. The Ecuadorian government was not interested in reforms but, rather, the legitimization of particular local solutions. Thus, when the recommendations of the foreign advisors conflicted with perceived national interests, the advisors were required to leave the country. The dissertation concludes by giving brief attention to Ecuador's quest for a new public policy approach during the 1930s when it faced severe economic and political crisis brought on by the Great Depression.

Some Aspects of Political-Economy of Development: The Case of Ghana 1950-1966 (Virginia Polytechnic Institute and State University, 1980; 42/03, p. 1244-A) by Kwadwo Bawuah. Ghana, which incorporates the former British Gold Coast crown colony, British Togoland, and the inland protectorates of Northern Territories and Ashanti, has a flat and swampy coastline and a hilly forest region to the north. It is predominantly agricultural: its principal product being cacao, although it also raises coffee and rubber and cuts tropical hardwoods. Apart from gold, which is still dredged in the western section of the forest region, Ghana has plentiful reserves of diamonds, bauxite, and manganese. A hydro-electric project was commenced on the Volta river in 1962 to supply the necessary power to convert bauxite ore into aluminum. Possibilities for industrial growth are also enhanced by the road network, harbor facilities near the capital city of Accra, and limited railway services. Ghana provides the case study for this dissertation which looks into the question of how the economies of poor nations are affected through "the responses of individuals in the political apparatus, firms, investors, and households to pervasive market restrictions emerging from political-legal institutional changes."

Traditionally, competitive market conditions have been relied on by development economic theory to solve poverty problems. This theory sees development and growth as a gradual, harmonious process where development capital is accumulated according to the

intertemporal preferences of individuals, and where development benefits are distributed in accordance with marginal contributions. After 1929, however, the applicability of the marginal analysis approach to the problems of poverty in developing countries was rejected and analysis proceeded under a mainstream economic theory on development using a "vicious-circle" thesis. Problems resulted from requirements that developing countries undertake certain programs, determined exogenously, within certain time frames, for use by their governments. Theories were then put forward in response to these problems and growth-generating policies, in turn, were derived from the theories. As a result, leaders of developing nations widely accepted active participation in production exchange. However, neither the traditional nor the vicious-circle approaches have paid sufficient attention to two essential determinants of economic progress: changes in political-legal institutions, and related effects on the utility-maximizing behavior of key decision makers.

After providing this introduction to the research problem, the second chapter presents a critical analysis of various development theories, stressing the vicious-circle thesis and the dependency theory because of their important influence on political-economic policies in developing nations. Ghana's political-legal institutional changes are analyzed from an historical perspective in chapter three. How these changes affected individual decision behavior about market production and exchange is also explored. Chapter four extends the analysis to the elements of development-oriented economic policies, including economic planning, and import and price controls, and their impact on decision rules. The dissertation concludes by presenting some empirical evidence of economic performance during the period 1950-1966.

Managing Agricultural Planning in a Developing Nation: A Study of Iran Between 1962 and 1978 (United States International University, 1981; 42/02, p. 794-A) by Hamid Reza Vakilifard. Three agricultural development plans, each for five-year periods, were in effect in Iran from 1962 to 1978. This study examines each of the plans to determine the relationship of certain factors to the Gross National Product (GNP). The specific issues investigated were: (1) the extent to which the volume of agricultural production agreed with planned production; (2) the extent to which population growth related to the development of agricultural production; (3) the extent to which higher education and training improved agricultural manpower performance; and (4) the extent to which economic growth, as mea-

sured by the GNP, was influenced by agriculture. Data were obtained for each of the five-year periods concerning the agricultural production of industrial crops, foodgrains, and vegetables. Information was then gathered on reported changes in imports and exports of the specified agricultural production, certain demographic data, and the GNP. These data were then assembled in tabular format and relationships developed within the individual five-year time frames. These were then compared with the planned objectives, which represented national priorities, thus analyzing the effects of government decisions across the selected factors. The results showed that during the first of the five-year periods specified agricultural production fell, due to a variety of reasons. Except for the production of vegetables, which enjoyed an overall increase, the downward trend continued in the two succeeding periods. The government was unable to decrease agricultural import levels and there was a significant decrease in the contribution of exports to the financing of imports. Population shifts from rural areas resulted in a 28 percent increase in urban inhabitants over the entire 15 years, with only a three percent growth rate in rural population by 1978. Technical education training programs were largely unsuccessful in attracting graduates to work in the agricultural sector. Instead, the private sector benefitted from being able to hire more technically qualified candidates. Lastly, the importance of agriculture in the makeup of the GNP declined, particularly after 1973 when national oil revenues began to increase dramatically. By 1978, oil constituted almost 50 percent of the GNP, thus increasing Iran's dependence on agricultural imports.

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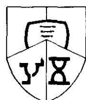

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