Accounting Historians Journal, 1993, Vol. 20, no. 2
[whole issue]
THE ACCOUNTING HISTORIANS JOURNAL

Semiannual Publication of
The Academy of Accounting Historians

Volume 20, Number 2  
December 1993

CONTENTS

Main Articles

1993 Vangermeersch Manuscript Award Winner:
The History of Financial Reporting Models for
American Colleges and Universities: 1910 to
the Present — Ken W. Brown ......................... 1

The Evolution of the Profit Concept: One Organization's
Experience — Cheryl McWatters .................... 31

Insider Trading and Accounting Reform: The Comstock
Case — Glen A. Vent and Cynthia Birk ............. 67

Accounting for Distribution Costs in the Dennison
Manufacturing Company during the 1920s and 1930s
— Gloria Lucey Vollmers .............................. 83

DR Scott's Conceptual Framework — Carol Lawrence
and Jenice P. Stewart ................................. 95

The Development of Government Accounting: A
Content Analysis of the Journal of Accountancy,
1905-1989 — Gary John Previts
and Richard E. Brown ............................... 119

The German Accounting Profession — 1931
and Before: A Reflection of National Ideologies
— Mary E. Harston .................................... 139

Historical Instances of Innovative Accounting
Practices in the Chinese Dynasties and Beyond
— Maxwell Aiken and Wei Lu ....................... 163

Data Processing Technology and Accounting:
A Historical Perspective — Robert Kee .......... 187

https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
Special Methodology Section

Writing an Accounting or Business History:
Notes Toward a Methodology — Maurice Duke
and Edward N. Coffman ............................... 217

Accounting History and Empirical Research
— Barbara D. Merino and Alan G. Mayper ............... 237

Review of Books and Other Publications

Jarausch and Hardy, *Quantitative Methods for Historians* — Stephen J. Young ....................... 269

Burns, *U.S. Accounting History 1965-1990*
— Richard Vangermeersch ......................... 271

Coombs and Edwards, Eds., *Local Authority Accounting Methods, Problems and Solutions*
— Rowan Jones ........................................ 273

Ad Hoc Reviewers In Recent Months .................... 277

Contents of Research Journals ........................ 278

Call for Papers ........................................ 289
The editors encourage papers on subject matter related to the development of accounting thought and practice. In addition, papers on biographical subjects and on historical method are encouraged.

*Guidelines On Research*

1. Manuscripts should provide a clear specification of the research issue, problem and/or hypothesis being addressed, an explanation of the derivation of the issue, and a plan to address these.

2. Authors should develop a statement about the method employed in the research, including a full indication of the extent and the manner in which the methodology is used and the degree to which the research plan is achieved by means of the method. Such a statement should include a specification of the original materials or data collected or employed and a statement of the rationale employed in selecting the source material(s). A description of the evidential data used in conducting the final phases of the evaluation should be clearly stated.

3. When contemporary implications of the research are demonstrable or can be developed, as appropriate, the results of the research will be deemed as having added merit.

4. Manuscripts which involve general periods of time, such as a study over a decade or longer, should develop explanations which are sensitive to changes in technology, education, political, economic and similar environmental factors.

5. While historical research communities have long debated the ability to develop proper evidence to assign causation to particular factors, authors may be expected to address and evaluate the 'probable' influences related to the issue or hypothesis being examined as consistent with an interpretation of the method, data and plan described. In other words, papers must be more than just a description of something.

6. A conclusion/interpretation of the research must be stated so as to be understood as consistent with the objective, plan and data used in the study. The finding(s) should be clearly 'tied back' to the problem specified in the research and emphasize the relevance to contemporary practice, education and/or research and policy issues as appropriate. Implications of the study for future research should be stated.

7. Purely descriptive papers continue to be of importance but must be carefully and completely developed and be based upon original materials as principal sources.

Submit three copies of each manuscript in scholarly form to:

Barbara D. Merino  
*The Accounting Historians Journal*  
Department of Accounting  
College of Business Administration  
University of North Texas  
Denton, Texas 76203-3677
Manuscripts must be in English and of acceptable style and organization for clarity of presentation. See Guidelines on Research. Submit three copies typewritten, double-spaced on one side of 8½ x 11 inch (approx. 22.5 cm x 28.0 cm) white paper; paragraphs should be indented. An abstract of not more than 100 words should accompany the manuscript on a separate page. The manuscript should not exceed 7,000 words and margins should be wide enough to facilitate editing and duplication. All pages, including footnote and references pages, should be serially numbered.

The cover sheet should state the title of paper, name(s) of author(s), affiliation(s), and the appropriate address for further correspondence. The title, but not the name(s) of the author(s), should appear on the abstract page and on the first page of the body of the manuscript. Authors sign a copyright release form provided by the editors as a condition of publication.

Manuscripts currently under review by other publications should not be submitted. A submission fee of $36 (U.S.) should accompany each submission. For current members of the Academy the fee is reduced to $15 (U.S.). Individuals who have not been members may request that their initial submission fee in a given year be applied as dues. Authors pay the postage for submission of manuscripts and return of galley proofs.

Authors are encouraged to supplement their submission of manuscript copies in typescript with a 5¼ inch diskette prepared in IBM compatible ASCII file format.

Authors are expected to run their materials on diskette through a spellchecking software program or similar personal review before submitting either typescript or diskette materials.

Major headings within the manuscript should be centered, underscored, and unnumbered with the first letter of major words capitalized. Subheadings should be on a separate line beginning flush with the left margin, and underscored with the first letter of major words capitalized. Third-level headings should lead into the paragraph, be underscored, and followed by a period; text should immediately follow on the same line.

Tables, figures, and exhibits should be numbered (arabic), titled, and, when appropriate, referenced. Limited use of original documents, etc. can be accommodated in The Journal for authors providing glossy black and white prints. Important textual materials may be presented in both the original language and the English translation.

Tables, and similar items must be discussed in the text and are not to be included unless they lend support to the text. Materi-
als must be of high quality and clean exposition. Photographs
must be glossy black and white at least 5 x 7 inches.

The main text should be marked as to the approximate loca-
tion of insertion and should be noted as follows, e.g.: [INSERT
TABLE 1]. The back of each table, etc. must indicate the related
final page number and title of the manuscript for insertion refer-
ence.

Illustrations, etc., must be prepared so that they can be un-
derstood standing alone. A line explaining the illustration should ac-
company such materials. The source citation for an illustration
etc., must be complete.

**Footnotes.** Footnotes should not be used for literature refer-
ences. The work cited should be referenced using the author’s
name and year of publication in the body of the text, inside square
brackets, e.g. [Garbutt, Spring 1984]; [Garner, 1954]. If the
author’s name is mentioned in the text, it need not be repeated in
the reference, e.g. “Previts [Fall 1984] asserts …” If a reference
has more than three authors, only the first name and “et al”
should be used in the text citation. References to statutes, legal
treatises or court cases should follow the accepted form of legal
citation.

Textual footnotes may be used sparingly to expand and com-
ment upon the text itself. These should be numbered consecutively
throughout the manuscript, using superscript arabic numerals.

**List of References.** References should be listed at the end of
the manuscript and contain full reference to all sources actually
cited. The list should be arranged in alphabetical order according
to the surname of the first author. Information about books and
journals should include the following: Books — name of author,
title underscored, place of publication, name of publisher, date of
publication; Journals — name of author, article title within quota-
tion marks, journal title underscored, date of issue in parentheses,
page numbers. Multiple works by an author should be listed in
chronological order of publication, and when multiple works of an
author appear in a single year, the suffix a, b, etc. should be used
after the year.

As a helpful guide to questions of style not covered above,
refer to *A Manual for Writers of Term Papers, Theses, and Disserta-
tions* (Fifth Edition) by Kate L. Turabian, published in paperback
by The University of Chicago Press.

Galley proofs will be sent to the author(s) as permitted by
scheduling; however, additions of new material must be strictly
limited. The author(s) will be provided three copies of *The Ac-
counting Historians Journal* issue in which the manuscript is pub-
lished.
1993 Vangermeersch Manuscript Award

Ken W. Brown
SOUTHWEST MISSOURI STATE UNIVERSITY

HISTORY OF FINANCIAL REPORTING MODELS FOR AMERICAN COLLEGES AND UNIVERSITIES: 1910 TO THE PRESENT

Abstract: This paper contrasts current and proposed higher-education financial reporting models with financial reporting models developed earlier in this century. The historical review in this paper has current value since the FASB and the GASB are considering major changes in the way that private and public colleges and universities report financial information. The results of the historical review reveal that, through the years, report modelers varied in their concern for user needs and report uniformity. Interestingly, the first higher-education reporting model developed in 1910 and the proposed model developed in 1992 by the FASB both focused on user needs while the primary objective for the reporting model currently in use and most other intervening models was only uniformity.

This paper provides a historical review of financial reporting models suggested for use by colleges and universities. Illustrations are included of the prescribed financial report forms suggested by major higher-education accounting publications published between 1910 and the present. To provide a context for the historical review, descriptions are provided of the present model published by the National Association of College and University Business Officers (NACUBO) and the future model published by the Financial Accounting Standard Board (FASB). Next, reviews are provided of the reporting models published by (1) the Carnegie Foundation in 1910, (2) the General Education Board in 1922, (3) Lloyd Morey in 1930, (4) the American Council on Education (ACE) in the periods 1930-35 and 1952-68, and (5) NACUBO in 1974. During this period, post-secondary education assumed a more important role in American society, and in higher-education financial reporting accordingly.
Although the earliest suggested uniform reports date back to the beginning of this century, the generally accepted format of college and university financial statements has changed very little from the format published by the American Council on Education nearly 60 years ago. This current reporting format (hereafter called the College Model) is unique to higher education since it differs significantly from the generally accepted formats for all other types of government and nonprofit organizations.

The currently used College Model prescribes that highly detailed fund accounting information be provided in external financial reports. This reporting approach, however, could soon be discarded by private institutions as a result of a new uniform reporting model being proposed by the Financial Accounting Standards Board (FASB) for all nonprofit organizations [FASB, 1992]. Also, the fate of the College Model for public institutions is uncertain pending the completion of a study by the Governmental Accounting Standards Board (GASB) [GASB, 1993].

During this period of significant change, it is worthwhile to reflect on the history of American higher-education financial reporting and to determine the foundation on which the current format is based. Through a better knowledge of the historical background for today's higher-education reporting techniques, one is better able to evaluate the FASB's new proposal and to envision its subsequent effect on the higher-education industry.

The paper is organized in the following manner. First, to provide a context for the historical review of suggested financial reporting formats, a description of the College Model currently in use is provided, followed by a comparison of the Nonprofit Model proposed by the FASB. Second, descriptions are provided of each higher-education reporting model suggested by major works published in this century. Last, the unique aspects of all reporting models (past, present, and future) are summarized and discussed, and the study's findings are related to today's issue of appropriate reporting detail levels.

HIGHER-EDUCATION REPORTING — PRESENT AND FUTURE

Today, American higher education is a major industry which serves over 13 million students each year. In 1990, the higher-education industry consisted of over 3,500 institutions generating almost $140 billion in annual revenues. Now, over 50
percent of the individuals in the 18-to-24-year-old population group are enrolled in a higher-education institution [National Center for Education Statistics, 1993, p. 77].

While present-day college financial reporting uses many accounting funds (i.e., a disaggregated format), the future model could use as few as one fund (i.e., an aggregated format). Thus, the future of higher-education reporting could reveal a significant shift in the level of information aggregation on financial reports. The term aggregation level, as used in this paper, describes the extent that financial information is provided by accounting fund group, (e.g., current fund, plant fund, agency fund). A highly aggregated financial statement provides no accounting fund delineation. In contrast, financial statements that report multiple funds are highly disaggregated.

NACUBO's 1974 College Model

Although similar to the government model used by state and local governments, the present-day College Model of financial reporting is unique to the higher-education industry. The generally accepted accounting principles (GAAP) that prescribe the statements for the College Model are provided in the Financial Accounting and Reporting Manual for Higher Education published by the National Association of College and University Business Officers (NACUBO) [1990]. The final form of the College Model was determined in 1974 and published in NACUBO's third edition of College and University Business Administration [1974]. Until future authoritative pronouncements of the FASB and the GASB generate new reporting models, the 1990 Manual and the 1974 CUBA Manual will continue to provide the higher-education industry with generally accepted accounting principles.¹

In a manner that will be used for each major reporting model reviewed in this paper, Figure 1 provides an abbreviated illustration of the 1974 College Model and shows the format of each statement required by higher-education GAAP, including report titles, column headings, and major row headings. So that the basic characteristics of the reporting-model format can be

¹Acknowledging the College Model as generally accepted by the higher-education industry, the American Institute of Certified Public Accountants (AICPA) included the financial statements from the 1974 College and University Administration publication in its industry audit guide titled Audits of Colleges and Universities [AICPA, 1975].
highlighted, financial numbers and detailed item descriptions are omitted in order to provide only a skeletal view of each report form.

**FIGURE 1**

1974 COLLEGE MODEL: Financial Statements Published by the National Association of College and University Business Officers

---

### BALANCE SHEET

<table>
<thead>
<tr>
<th></th>
<th>Current Funds</th>
<th>Plant Funds</th>
<th>Current Funds</th>
<th>Plant Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>LIABILITIES AND</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FUND BALANCE</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

**Fund Balance**: 10,000

---

### STATEMENT OF CHANGES IN FUND BALANCES

<table>
<thead>
<tr>
<th></th>
<th>Current Funds</th>
<th>Plant Funds</th>
<th>Current Funds</th>
<th>Plant Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES AND</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER ADDITIONS</strong></td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>EXPENDITURES AND</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER DEDUCTIONS</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>TRANSFERS AMONG</strong></td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
</tbody>
</table>

**Net Change in Fund Balance**: 100,000

---

### STATEMENT OF CURRENT FUNDS REVENUES, EXPENDITURES AND OTHER CHANGES

<table>
<thead>
<tr>
<th></th>
<th>Current Year</th>
<th>Total Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES</strong></td>
<td>1,000,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>EXPENDITURES AND</strong></td>
<td>1,000,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>OTHER TRANSFERS AND</strong></td>
<td>1,000,000</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

**Net Change in Fund Balances**: 100,000

---


As shown in Figure 1, the College Model includes three general purpose financial statements: the Balance Sheet, the Statement of Changes in Fund Balances, and the Statement of Cur-
rent Funds Revenues, Expenditures, and Other Changes. As indicated by the column headings of the statements, the College Model is based on the principles of fund accounting.

The Balance Sheet partitions assets, liabilities, and fund balances into as many as ten different funds. While resources available for general operations are expended through the Current Funds, all nonexpendable resources, resources for capital asset acquisition, and the stock of capital assets are placed in funds outside the Current Funds category.

The Statement of Changes in Fund Balances illustrated on Figure 1 explains the year's change in the net worth of each fund on the balance sheet except the Agency Fund which, by definition, has no fund balance. As shown in Figure 1, changes to fund balances are placed into one of three classifications: revenues and other additions, expenditures and other deductions, and transfers among funds.

The Statement of Current Funds Revenues, Expenditures, and Other Changes represents the college’s "operating statement." In college accounting, revenues and expenditures are recognized only in Current Funds; in all other funds, resource flows are classified either as other additions or deductions. Divided into three sections (revenues, expenditures, and transfers), the Statement does not provide the customary subtotal between revenues and expenditures.

*The FASB's 1992 Nonprofit Model*

In a 1989 decision of the Financial Accounting Foundation, the FASB and the GASB were provided with standards-setting jurisdiction for privately and publicly controlled colleges, respectively [Cowherd, 1989, p. 1]. As a result, future financial reports of the private and public college groups are likely to differ in format and content as the FASB and the GASB issue independent reporting standards for their respective sets of higher-education entities.

In this dualistic standards-setting environment, the FASB is ahead of the GASB in determining an appropriate reporting model for higher-education entities. In 1992, the Financial Ac-

---

2 In present-day college accounting, capital assets are not reported on the balance sheet. As a result, outlays of Current Funds for capital assets are reported with traditional expenses (e.g., salaries, travel, or supplies) as expenditures of Current Funds.
The Accounting Standards Board (FASB) issued an exposure draft that would change the aggregation level of \textit{private college} financial reports [FASB, 1992] by reducing the number of funds and altering the types of statements presented. While the GASB is studying financial reporting needs of \textit{public colleges}, it does not expect to make a decision until 1995 as to whether the College Model, the GASB's current Government Model, or another model is appropriate for the public college group [GASB, 1993, p. 4].

The Nonprofit Model's basic statements proposed in the exposure draft are illustrated on Figure 2. As shown on Figure 2, three statements that are very different from the College Model are proposed: the Statement of Financial Position, the Statement of Cash Flows, and the Statement of Changes in Net Assets.

As shown on Figure 2, the Statement of Financial Position does not separate assets and liabilities into accounting funds. Instead, net assets (previously called the fund balance) are partitioned into three types: unrestricted, temporarily restricted, and permanently restricted. In essence, the Nonprofit Model uses only one fund and classifies net assets, revenues, and expenses into three types. The Nonprofit Model does not classify assets and liabilities into funds similar to those used by the College Model.

A new statement required by the FASB's Nonprofit Model is the Statement of Cash Flows; no similar statement is included in the present-day College Model. The cashflow statement classifies inflows and outflows into the standard categories of operating, investing, and financing activities. In addition, the Statement of Changes in Net Assets (optionally called \textit{the Statement of Activities}) serves as an entity's "operating statement," and explains the year's changes in net assets for each of the three net-asset types: unrestricted, temporarily restricted, and permanently restricted. While revenues are recognized in any of the three net-asset types, expenses (including depreciation) are recognized only in the unrestricted funds. Also, a subtotal disclosing the difference between unrestricted revenues and expenses is provided.

\textbf{Comparison of the College and Nonprofit Model}

While major differences exist in the format and content of the college and nonprofit models, less obvious differences exist
in the intended users and the user needs identified by the respective authors of the college and nonprofit models. All these major differences are discussed in the following paragraphs.

While NACUBO's 1990 and 1974 publications, which contain the final version of the College Model, do not identify specific users or purposes for financial reports, the FASB exposure

![Figure 2](https://egrove.olemiss.edu/aah_journal/vol20/iss2/15)
draft [1992] includes references to both. The FASB exposure draft indicates that the external users for whom the financial reports are intended are: "... donors, members, creditors, and others who provide resources for not-for-profit organizations." [FASB, 1992, p. 2].

According to the exposure draft, the financial statements should provide the following information:

1. The amount and nature of an organization's assets, liabilities, and net assets.
2. The effects of transactions and other events and circumstances that change the amount and nature of net assets.
3. The amount and kind of inflows and outflows of economic resources during a period and the relation between the inflows and outflows.
4. How an organization obtains and spends cash, its borrowing and repayment of borrowing, and other factors that may affect its liquidity.
5. The service efforts of an organization.

[FASB, 1992, p. 2]

Of interest is the fact that the College Model focuses only on information items 1 and 2. Item 3 (changes in economic resources), item 4 (factors of liquidity), and item 5 (service efforts) are new dimensions of college financial reports not provided by the present-day College Model.

Several striking differences exist between the present-day College Model and the FASB's proposed Nonprofit Model. First, when compared side-by-side, one can see that the College Model on Figure 1 contains a much larger number of accounting figures than does the Nonprofit Model on Figure 2. Second, while omitting many accounting figures, the Nonprofit Model provides a new statement (i.e., the Statement of Cash Flows). Third, because the Nonprofit Model reports capital assets on the balance sheet and requires a depreciation allowance to be recorded, the Nonprofit Model shows expenses (rather than expenditures) on the "operating statement." Last, unlike the College Model, the Nonprofit Model provides an accounting number that approximates "net income."

3 See footnote 1.
In summary, the changes from the present-day College Model to the proposed Nonprofit Model reflect a move toward (1) more aggregated statements, (2) less accounting numbers being disclosed, (3) more similarity with for-profit reports, and (4) more reporting on economic resources and liquidity. Collectively, these changes represent a transition from the most detailed reports to the least detailed reports in this century. Through a historical review of American higher-education reporting models, one can verify that the present and future models represent the extremes of detail in the chronological history of college accounting.

**Overview of Historical Reporting Models**

To determine the background for the present-day College Model, a search was conducted for higher-education accounting publications that outlined a unique reporting model. A chronological listing of the publications identified through the search are shown in Table 1.

**TABLE 1**

<table>
<thead>
<tr>
<th>Publication Date</th>
<th>Author, Title, and Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td>Trevor Arnett, <em>College and University Finance</em>, General Education Board.</td>
</tr>
<tr>
<td>1930</td>
<td>Lloyd Morey, <em>University and College Accounting</em>, John Wiley and Sons.</td>
</tr>
</tbody>
</table>

4 Particularly helpful in the search was Flesher and Rezaee's working paper titled *History of College and University Accounting and Auditing* [Flesher and Rezaee, 1988].
As shown on Table 1, bulletins have been issued and books have been written about college and university accounting and financial reporting since 1910.\

Interestingly, the two earliest works were financed by two outstanding businessmen and philanthropists: Andrew Carnegie and John D. Rockefeller, Sr. In 1910, Andrew Carnegie’s foundation, the Carnegie Foundation for the Achievement of Teaching, published a set of suggested uniform college financial reports. In 1922, Trevor Arnett, writing for Rockefeller’s General Education Board, published a widely-accepted book on college accounting and reporting.

In 1930, Lloyd Morey published a book on college accounting not long before becoming chairman of a new American Council on Education’s (ACE) committee on college financial reporting. In 1935, Morey’s committee published a book on financial reporting. This work outlined much of the College Model still in use today.

In 1974, the National Association of College and University Business Officers published the third of four “CUBA manuals”; the first two editions were prepared by a committee of the American Council on Education. The 1974 version of *College and University Business Administration* included the last noteworthy revisions to the ACE’s 1935 reporting format; as a result, the 1974 CUBA Manual provides the current statement of generally accepted accounting principles for college accounting.

The above major publications, issued between 1910 and the present, provide the essential historical trail by which to trace college financial reporting to its present form.

**HISTORICAL REVIEW OF THE REPORTING MODELS**

The five publications in Table 1 were reviewed for stated principles or concepts about (1) the format and content of suggested financial reports, and (2) the users of college financial reports and their related needs. In the following pages, the re-

---

5 Although important works, some other publications are omitted from the list on Table 1 because the works either did not include a financial reporting model or did not include a model that was unique to their publication. For example, in 1925, Earle T. Washburn’s *Accounting for Universities* [1925] was limited to accounting and not reporting. In addition, the first edition of *College and University Administration* [ACE, 1952] was omitted because it included the same essential reporting model as contained in the Committee Model [National Committee, 1935].
suits of each key publication’s historical review are provided to determine the publication’s role in the evolution of college financial reporting.

1910 Carnegie Model

At the turn of the century, higher education was in a period of dramatic growth. The number of colleges and universities had increased from 563 just after the Civil War to 977 in the year 1900 [NCES, 1993, p. 80]. While average enrollment was still very small (an average of about 240 students per institution in 1900), the percentage of college-age young people enrolling in college was increasing. Although still considered a luxury activity only for the children of well-to-do families, higher education was growing very rapidly during the early part of the twentieth century [Brubacher and Rudy, 1976, pp. 249-250].

In the early 1900s, colleges and universities received financial support from a variety of sources: student fees, government funds, endowment income and gifts, and dormitory charges. By 1910, higher education’s total revenues were fairly evenly distributed among student tuition and charges, federal and state government funds, and endowment and gift income [NCES, 1993, p. 89]. Of course, the government funds were provided to public institutions while the endowment income and gifts were provided to private institutions.

At the turn of the century, institutions were still trying to house all students in dormitories as a way to educate the whole person and to promote the “collegiate way of living” [Brubacher and Rudy, 1976, p. 121]. Thus, institutions were faced with the financial and operational problems associated with food and lodging services. Also, with highly organized “big-time” athletics developing from the 1880s, several institutions were already involved with having to account for ticket sales [Savage, 1929, pp. 22-29].

While private foundations and philanthropists were providing millions of dollars in direct aid to colleges, the newly formed Carnegie Foundation for the Advancement of Teaching was also providing funds for teachers’ pensions. During its pension-funding activities, the Foundation became frustrated with its inability to obtain accurate and comparable financial reports from the nation’s colleges. Henry Pritchett, former Massachusetts Institute of Technology president and the first president of the Carnegie Foundation, was quite concerned about the public’s...
financial information needs and higher education's comparative information needs. Recognizing the problem of deficient financial reporting practices, he initiated a study by the Foundation that led to the first known financial reporting model for colleges and universities.

As a result of its study, the Carnegie Foundation issued a pamphlet titled *Bulletin No. 3: Standard Forms for Financial Reports of Colleges, Universities, and Technical Schools* [Carnegie Foundation, 1910]. Along with comments made in early Carnegie annual reports, this pamphlet provided the first indication of conceptual thought regarding financial information for colleges and universities. Carnegie's *Bulletin No. 3* identified the following three groups of financial statement users:

1. Trustees, alumni, and friends of the institutions who are directly interested in its welfare.

2. Men of means who are or may become donors to the institution.

3. Individuals and agencies involved with studies of educational methods and costs.

[Carnegie, 1910, p. 1]

According to the Carnegie bulletin, the third group needed comparative information that could only be provided by uniformity in reporting. *Bulletin No. 3* proposed that financial statement users sought answers to three fundamental questions:

1. What is the total income of the institution for the year?

2. What is the annual expenditures?

3. What are the assets at the end of the year?

[Carnegie, 1910, p. 2]

The financial statement forms suggested by the Carnegie Foundation focused on information required to answer the above basic questions. Figure 3 provides an abbreviated illustration of the format and contents of the Carnegie report forms.

As indicated by the reporting levels in Figure 3, the authors of the Carnegie bulletin were quite concerned about the appropriate level of information aggregation. Their multi-level forms were intended to avoid "... complexities of too great detail and to reduce the information which ought to be given to the simplest and most intelligible form" [Carnegie, 1910, p. 1].
shown on Figure 3, three levels of detail were provided: a summary level, an intermediate level, and a detailed level.

At the summary level, a single-page report (illustrated on the left side of Figure 3) contained only totals from more detailed reports. This highly aggregated summary disclosed only totals from the balance sheet and from separate revenue and expense reports included in the intermediate level. The summary was purported to "... give the concise view of the financial status of the institution which the reader first wants to
know" [Carnegie, 1910, p. 2]. In a straightforward manner, the summary answered the three fundamental questions of users.

The summary level was supported by an intermediate level of detail in the form of a basic balance sheet and single-column schedule of income and expenses. Based on the principles of fund accounting, the balance sheet was disaggregated into three self-balancing funds: (1) current assets and liabilities, (2) investment assets and endowment funds, and (3) educational plant.

As shown in the intermediate level of Figure 3, the Carnegie forms provided separate schedules of income and expenses. To determine any excess or deficit between income and expenses, however, the reader would refer to the Summary Report which contained both the totals of the independent income and expense schedules and the resulting surplus or deficit.\(^6\)

The titles of the reports in the detailed level are shown on the right side of Figure 3. These schedules provided supporting details for accounting numbers on the reports in the intermediate level. Designed during the era when the balance sheet was considered most important, the detailed level of the Carnegie forms provided numerous analyses of balance sheet items.

The three levels of detail contained in the Carnegie forms were ingeniously simple. If the reader wanted only an overview, then the summary-level report filled the need. For readers who wanted additional detail, the intermediate level was available. The third level provided yet another level of detail.

Like many new and innovative endeavors, the Carnegie uniform reports did not gain wide acceptance by higher-education institutions. As a result, in 1922, Trevor Arnett built upon the Carnegie effort and developed a model that gained wider acceptance.

1922 Arnett Model

Between 1910 and 1922, when the second higher-education reporting model was published, the major event to affect American higher education was World War I. While European classrooms were emptied of their male students as early as 1914, American higher-education enrollment was not affected until 1917 when the United States entered the world conflict. During

\(^6\) As shown by the terminology in the summary and intermediate levels, the Carnegie modelers used the words *expenditures* and *expenses* interchangeably.
the war years, enrollments at undergraduate colleges dropped 20 percent [Rudy, 1991, p. 19].

Following the war, America entered the "roaring" 1920s, and the number of colleges and college students began to grow again. The average institutional enrollment was approximately 500 students in 1920 and 750 students in 1930 [NCES, 1993, p. 75]. The University of Chicago's auditor, Dr. Trevor Arnett, responded to this environment with a publication for the General Education Board (GEB) titled *College and University Finance* [1922]. John D. Rockefeller, Sr., provided the GEB with financial support for the project. Arnett's publication is considered to be the first generally accepted source of college and university accounting and reporting [NACUBO, 1982, p. 1].

In his publication, Trevor Arnett identified friends of the institution as the users of college financial reports. He suggested that annual financial statements should be designed to inform these friends about the institution [Arnett, 1922, p. 115]. Arnett did not list trustees and officers as annual statement users because he felt that such groups of decision makers should receive frequent internal reports that were more detailed in their contents than annual financial statements.

Arnett showed concern for user needs and also disdain for the college accounting of the time in the following statement:

"It is probably safe to say that college trustees in numerous instances are not furnished with statements and reports which show clearly the financial condition and methods of the institutions committed to their trust, for if they were they would not rest until the undesirable features had been eliminated."

[Arnett, 1922, p. 109-110].

Like the Carnegie Foundation's leaders, Dr. Arnett felt that users asked certain key questions and that some of those questions were more important than others. Arnett contended that users were most concerned about the amount of endowment, then about the cost of plant assets, and finally, about the amounts of current assets and liabilities [Arnett, 1992, p. 115].

Figure 4 provides an abbreviated illustration of Arnett's proposed financial reports. In Figure 4, the primary statements and supporting schedules are illustrated on the left and right sides, respectively.

The balance sheet on Figure 4 was classified into the same three funds as those shown on the Carnegie forms but in a
The Accounting Historians Journal, December 1993

**FIGURE 4**

**1922 ARNETT MODEL: Financial Reports of Trevor Arnett**

![Diagram](https://example.com/diagram.png)

*Illustration adapted from Trevor Arnett's College and University Accounting published by the General Accounting Board, New York, 1922.

Arnett’s balance sheet was organized so that users’ questions could be answered in the order that he supposed the questions would be asked: the amounts of (1) endowment assets, (2) plant assets, and (3) current assets and liabilities, respectively.

In addition to his unique balance sheet ordering, Arnett provided a novel approach to income and expense reports. A summary report titled the Surplus and Deficit Account reported the net surplus or deficit for each division of the institution. Each division’s surplus or deficit was determined from indi-
vidual schedules of income and expenses for each division and receipts and disbursements for each revenue generating activity. Examples of these division schedules are shown on Figure 4 for an academic college\(^7\) (i.e., the College of Liberal Arts), and three auxiliary enterprises: dormitories, food service, and the bookstore.

The General Education Board mailed a copy of the book to every college in the nation in the hopes that its suggestions would be used. Lloyd Morey described Arnett's book as a significant effort and as having widespread influence on college accounting [Morey, 1930, p. 6]. As will be seen in the following paragraphs, however, Morey retained little of Arnett's reporting model when he published his own reporting model in 1930.

1930 Morey Model

In 1930, University of Illinois comptroller (and eventual president), Dr. Lloyd Morey, CPA, published *University and College Accounting*. Through his book and subsequent publications, Dr. Morey became one of the most influential figures in the development of today's college financial reporting practices.

Unlike the Carnegie and Arnett works, Morey's book did not identify specific groups of public users or perceptions of user needs. This failure to address user and user needs was the start of a trend that continued in higher-education publications until reversed by the FASB's recent exposure draft on the Nonprofit Model. Dr. Morey, however, acknowledged that published annual reports were important to all colleges, both public and private, as a means to instill public confidence in the business management of the institution [Morey, 1930, p. 196].

Without further elaboration, Dr. Morey indicated that published annual reports were used for various purposes by "persons intimate with the institution as well as by friends and citizens." [Morey, 1930, p. 199]. According to Morey, certain purposes required brevity in reports while others required elaborate detail. To provide brevity, Morey suggested that a written con-

\(^7\)A few colleges (usually private) prepare income statements for each academic division but do not distribute them externally (see, for example, Gaffney [1987-88]). Because of their controversial nature, such reports are usually avoided by administrators of a college or university until the institution develops severe financial problems that mandate assessments of each division's financial contribution to or drain on the institution.


A condensed summary be placed in the financial reports just before what he called the primary financial tables.

An abbreviated illustration of the Morey reporting model is shown on Figure 5. Morey’s primary statements and the titles of supporting schedules are shown on the left and right sides of Figure 5, respectively.

**FIGURE 5**

**1930 MOREY MODEL: Financial Reports of Lloyd Morey**

<table>
<thead>
<tr>
<th>Primary Statements</th>
<th>Supporting Schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BALANCE SHEET</strong></td>
<td></td>
</tr>
<tr>
<td>I. GENERAL &amp; BUILDING FUNDS:</td>
<td>I. GENERAL &amp; BUILDING FUNDS:</td>
</tr>
<tr>
<td>$ X XXX XX</td>
<td>Appropriations</td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>Balances $ X XXX XX</td>
</tr>
<tr>
<td>$ XX XXX XX</td>
<td>Reserves $ XXX XX</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>$ XXX XX</td>
</tr>
<tr>
<td>II. TRUST FUNDS:</td>
<td>II. TRUST FUNDS:</td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>Non-expendable $ XXX XX</td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>Expendable $ XXX XX</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>$ XXX XX</td>
</tr>
<tr>
<td>III. ENDOUIMENT FUND:</td>
<td>III. RESERVE FOR ENDOUIMENT FUND:</td>
</tr>
<tr>
<td>$ XXX XX</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>$ XXX XX</td>
</tr>
<tr>
<td>IV. PLANT AND PROPERTY:</td>
<td>IV. BONDS AND SURPLUS:</td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>Bonds $ XXX XX</td>
</tr>
<tr>
<td></td>
<td>Surplus $ XXX XX</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>$ XXX XX</td>
<td>$ XXX XX</td>
</tr>
<tr>
<td>TOTAL ASSETS</td>
<td>TOTAL LIABILITIES</td>
</tr>
<tr>
<td>$XXX XXX XX</td>
<td>$XXX XXX XX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONSOLIDATED SUMMARY OF INCOME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BUDGET INCOME</td>
<td>$X XXX XX</td>
</tr>
<tr>
<td></td>
<td>$XXX XXX XX</td>
</tr>
<tr>
<td>TRUST FUNDS INCOME</td>
<td>$XXX XX</td>
</tr>
<tr>
<td>SERVICE ENTERPRISES INCOME</td>
<td>$XXX XX</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$XXX XX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONSOLIDATED SUMMARY OF EXPENDITURES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BUDGET EXPENDITURES</td>
<td>$XX XXX XX</td>
</tr>
<tr>
<td></td>
<td>$XXX XXX XX</td>
</tr>
<tr>
<td></td>
<td>$XXX XX</td>
</tr>
<tr>
<td></td>
<td>$XXX XXX XX</td>
</tr>
<tr>
<td>TRUST FUNDS EXPENDITURES</td>
<td>$XXX XX</td>
</tr>
<tr>
<td>SERVICE ENTERPRISES EXPENDITURES</td>
<td>$XXX XX</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>$XXX XXX XX</td>
</tr>
</tbody>
</table>

*Illustration adapted from Lloyd Morey’s University and College Accounting published by John Wiley & Sons, New York, 1930.*

Published by eGrove, 1993
As shown on Figure 5, Morey's primary financial tables consisted of (1) a balance sheet, (2) a consolidated summary of income, and (3) a consolidated summary of expenditures. Noticeably missing from Morey's forms was a statement of changes in net assets. As a result, the accounting numbers on Morey's primary statements could not be traced to one another.

As shown on Figure 5, Morey's balance sheet displayed four accounting funds: General and Building Funds, Trust Funds, Endowment Fund, and Plant and Property, in comparison to only three funds used in the 1922 Arnett model. In contrast to his disaggregated balance sheet, Morey's Consolidated Summary of Income and Consolidated Summary of Expenditures were each completely aggregated (i.e., a single fund is displayed) with the exception that trust funds income and expenditures were itemized. In addition to his primary statements, Morey suggested that twelve detailed schedules be provided as supporting detail of various items on the main financial reports. As shown on Figure 5, most of these schedules related to items on the balance sheet.

In the 1930s, Dr. Morey chaired an American Council on Education (ACE) national committee that developed the essential College Model presently in use. Thus, his leadership of the committee preserves a place in college accounting history for Dr. Morey and provides a basis for declaring Dr. Morey as the father of the College Model that has served American higher education for almost 60 years. His committee’s reporting model is reviewed in the paragraphs that follow.

1935 Committee Model

Because of its loose and diverse accounting practices, the American accounting profession received some of the blame for the 1929 stock market crash and the Great Depression [Chatfield, 1977, pp. 132-133]. As a result, throughout the 1930s, leaders of the accounting profession were involved with the Securities and Exchange Commission in reassessments of accounting and auditing standards-setting processes. Late in the decade, the American Institute of Certified Public Accountants formed the Committee on Accounting Procedure and the Committee on Auditing Procedure to promulgate for-profit entity accounting and auditing standards, respectively [Davidson and Anderson, 1987, p. 116]. These two groups were the forerunners of FASB and the AICPA's Auditing Standards Board.
In the 1930s, the task of setting accounting standards for government and nonprofit organizations was left to the professional organizations for each type of entity. For example, in 1934, the Municipal Finance Officers Association formed the National Committee on Municipal Accounting to promulgate formal standards for municipalities [Government Finance Officers Association, 1988, p. 1]. Earlier in the decade (1930), the American Council on Education (ACE) formed the National Committee on Standard Reports for Institutions of Higher Education (hereinafter called the National Committee). The National Committee operated between 1930 and 1935. Interestingly, ACE obtained financing for the National Committee from the Carnegie Foundation, the same organization that, two decades earlier, had attempted to bring uniform reporting to American higher-education institutions through the Carnegie Model.

One of the committee's first actions was to complete a study of financial reporting practices of the nation's colleges and universities [National Committee, 1930, p. 3]. Subsequently, the National Committee published a pamphlet, Suggested Forms for Financial Reports of Colleges and Universities [National Committee, 1931], and a book, Financial Reports for Colleges and Universities [National Committee, 1935] that described a uniform reporting model for higher-education institutions. In these two publications, the basic framework was prescribed for the present-day financial reports under the College Model.

Continuing with the trend that Morey set in his book [1930], the Committee dismissed a user's need for simple and understandable accounting information. While acknowledging the pleas of individuals who were urging a simple and readily intelligible set of forms, the Committee declared the following:

"With this point of view [the committee] is in great sympathy, but it is well known that educational finance is not a simple matter. A proper picture thereof cannot be presented in a few figures. The financial data must be suitably analyzed rather than merged into a meaningless total."

[National Committee, 1931, p. 2]

The Committee's main objective was not so much to fill the needs of individual users but to promote uniformity in financial reporting among both public and private institutions. Their goal was to provide reports that were "... so classified and pre-
sented that different items will have a definite meaning and will fit into their proper place" [National Committee, 1931, p. 2].

An abbreviated illustration of the statements suggested by the National Committee (hereinafter called the Committee Model) are provided on Figure 6. As shown on Figure 6, the Committee Model consisted of a disaggregated balance sheet

**FIGURE 6**

1935 COMMITTEE MODEL: Financial Reports of the National Committee on Standard Reports for Institutions of Higher Education*

<table>
<thead>
<tr>
<th>BALANCE SHEET (OPTIONAL COLUMNAR FORM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
</tr>
<tr>
<td>Cash</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>$ XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>Total Assets</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>Liabilities and Funds</td>
</tr>
<tr>
<td>Accounts payable</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>X XXX</td>
</tr>
<tr>
<td>Net plant investment</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>Total Liabilities and Funds</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
<tr>
<td>XXX XXX</td>
</tr>
</tbody>
</table>

**STATEMENT OF CURRENT INCOME, EXPENDITURES, AND SURPLUS**

<table>
<thead>
<tr>
<th>Beginning Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ XXX XXX</td>
</tr>
</tbody>
</table>

**STATEMENT OF CURRENT INCOME**

- Educational and General:
  - XXX XXX
  - XXX XXX
  - XXX XXX
  - XXX XXX
  - XXX XXX
- Auxiliary Enterprises and Activities:
  - XXX XXX
  - XXX XXX
  - XXX XXX
- Other Non-Educational Income
  - XXX XXX

**STATEMENT OF EXPENDITURE**

- Educational and General:
  - XXX XXX
- Auxiliary Enterprises and Activities:
  - XXX XXX
- Total Aux. Expenditures
  - XXX XXX
- Other Non-Educational Purposes
  - XXX XXX

**STATEMENT OF EXPENDITURE**

<table>
<thead>
<tr>
<th>OTHER ANNUAL REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of Restricted Current Funds</td>
</tr>
<tr>
<td>Statement of Loan Funds Principal</td>
</tr>
<tr>
<td>Statement of Unexpended Plant Funds</td>
</tr>
</tbody>
</table>

and a statement of income and expenditures for the Current Funds; in addition, separate and more detailed statements of income and expenditures were provided.

As shown on Figure 6, the Committee Model introduced several features that were not present in prior reporting models but have endured in college accounting to the present day. For example, the committee's balance sheet was disaggregated into twice as many funds (eight) as that contained in Morey's four-fund Model.

In another new feature, the Committee Model included statements that explained the change in fund balance of each fund. All prior reporting models failed to explain fund-balance change for any fund. Thus, the Committee Model was the first to provide statements in which the yearly operating statement could be tied to the end-of-the-year balance sheet. The change statements for the other funds are not illustrated on Figure 6 but are simply listed at the bottom.

As shown on Figure 6, the Committee Model illustrated the use of the optional columnar form for the balance sheet. Prior models used only the layered form whereby the accounting figures for each fund were stacked on top of another fund in a horizontal manner. While the National Committee acknowledged the use of the currently popular columnar form, it applied the presentation technique only to the balance sheet. Today's presentation of the fund-balance change statement in columnar form did not occur until a later date.

The eight accounting funds established by the National Committee are still used in the 1974 College Model used today. This is shown on Table 2 which provides a comparison of the funds in the Committee Model and the College Model. As shown on Table 2, the 1974 College Model includes only two additional funds (both in the Plant Funds category) that were not included in the 1935 Committee Model: the Renewals and Replacements Fund and the Retirement of Indebtedness Fund.

While establishing most of today's college accounting funds, the Committee Model also introduced the classification of Current Funds into unrestricted (call general) and restricted funds. Prior models disaggregated restricted endowment and trust funds away from other funds, but none drew the distinction between unrestricted and restricted operating funds.

The National Committee's Financial Reports for Colleges and Universities [1935] remained the generally accepted source of
TABLE 2
Comparison of Fund Titles Used by the 1935 Committee Model and the 1974 College Model

<table>
<thead>
<tr>
<th>1935 - Committee Model</th>
<th>1974 - College Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT FUNDS</td>
<td>CURRENT FUNDS</td>
</tr>
<tr>
<td>a. General</td>
<td>a. Unrestricted</td>
</tr>
<tr>
<td>b. Restricted</td>
<td>b. Restricted</td>
</tr>
<tr>
<td>LOAN FUNDS</td>
<td>LOAN FUNDS</td>
</tr>
<tr>
<td>ENDOWMENT AND OTHER</td>
<td>ENDOWMENT AND OTHER</td>
</tr>
<tr>
<td>NON-EXPENDABLE FUNDS</td>
<td>NON-EXPENDABLE FUNDS</td>
</tr>
<tr>
<td>a. Endowment Funds</td>
<td>ANNUITY FUNDS</td>
</tr>
<tr>
<td>b. Annuity Funds</td>
<td></td>
</tr>
<tr>
<td>PLANT FUNDS</td>
<td>PLANT FUNDS</td>
</tr>
<tr>
<td>a. Unexpended</td>
<td>a. Unexpended</td>
</tr>
<tr>
<td>b. Invested in Plant</td>
<td>b. Renewals and replacements</td>
</tr>
<tr>
<td></td>
<td>c. Retirement of indebtedness</td>
</tr>
<tr>
<td></td>
<td>d. Investment in Plant</td>
</tr>
<tr>
<td>AGENCY FUNDS</td>
<td>AGENCY FUNDS</td>
</tr>
</tbody>
</table>

\* Fund titles used by the National Committee on Standard Reports for Institutions of Higher Education in Financial Reports for Colleges and Universities, Chicago: University of Chicago Press (1935).


financial reporting principles until 1952 when the American Council on Education (ACE) published the first edition of College and University Administration. This edition, along with subsequent revised editions represents the last chapter in the historical trail of uniform reporting for higher-education institutions.

The Effect of the “CUBA Manuals” on Today's College Model

By 1940, the American higher-education system had grown to over 1,700 institutions, was serving approximately 1.5 million students, and was employing almost 190,000 faculty members [NECS, 1993, p. 75]. However, enrollments plummeted when the United States entered World War II in 1941. By 1943, many institutions reported enrollment drops of almost 40 percent [Rudy, 1991, p. 71]. After World War II ended in 1945, Americans went back to college in record numbers. The higher-educat-
tion industry went on an upward spiralling growth track that continued until the 1980s.

During the 1940s and early 1950s, the foundation of John D. Rockefeller, Jr., financed a new committee of the American Council on Education call the National Committee on the Preparation of a Manual on College and University Business Administration (hereinafter called the CUBA Committee). In 1952, the CUBA Committee published the first of four editions of *College and University Business Administration* [ACE, 1952]. The publication is commonly called the *CUBA Manual* by higher-education finance officers. In 1968, the CUBA Committee prepared the second edition of the *CUBA Manual* [ACE, 1968]. Subsequent third and fourth editions were published in 1974 and 1982, respectively, by the National Association of College and University Business Officers (see NACUBO [1974] and [1982]).

Like the members of Lloyd Morey's 1935 National Committee, the authors of the 1950s and 1960s CUBA Manuals had little or nothing to say about statement users and their needs. The first CUBA edition, however, acknowledged that annual reports should be distributed widely so that "...representatives of the public and members of the groups responsible for the support of the institution may be adequately informed of its financial affairs." [ACE, 1952, p. 34]. Further, the 1952 CUBA Manual suggested that annual financial statements were multi-purpose; in addition to providing information to donors and grantors, the reports provided a record for study and research, and had internal value since they provided important financial data for future decisions [ACE, 1952, p. 34].

The 1968 CUBA Manual implied that more financial detail would promote readability when it asserted that "...although excessive detail is to be avoided, the disclosure of resources and their utilization must be adequate to permit general understanding." [ACE, 1968, p. 166]. The 1974 and 1982 editions of CUBA continued with the theme of uniformity that began with the ACE's 1930-35 National Committee. Furthermore, the discussion of financial reporting focused on the establishment of standard revenue and expenditure classifications that would be used by all institutions, and no mention was made of report users or their needs.

Since most features of the present-day College Model was established by the 1935 Committee Model, each succeeding edition of the CUBA Manual provided little change from the Com-
mittee Model. For example, the 1952 CUBA Manual made only two noteworthy changes: (1) it established the plant sub-fund titled *the Retirement of Indebtedness Fund* as the ninth fund to the balance sheet, and (2) it added one substantially new statement called *the Summary of Current Income and Expenditures*. This new report matched current income and expenditures and derived an "excess or (deficit) of current income over current expenditures."

In the 1968 CUBA Manual, the plant sub-fund titled *Renewals and Replacements Fund* was added as the tenth fund on the highly disaggregated balance sheet. In addition, the term *unrestricted funds* replaced the Current Funds sub-fund previously called *general funds*. In 1974, the Summary of Current Income and Expenditures established in 1952 was expanded to include transfers and was retitled the Statement of Current Funds Revenues, Expenditures, and Transfers. A single-page columnar Statement of Changes in Fund Balances was provided as an alternative to individual statements of change in each fund balance.

Since the 1982 CUBA Manual included no significant changes from the reporting model in the 1974 edition, 1974 is established as the date when the College Model ceased to change. Although important in the history of college finance, the CUBA Manuals, however, did little to change the basic reporting structure of 1935 Committee Model. Based on this observation, one can conclude that today's College Model was, in essence, established almost 60 years ago.

**SUMMARY OF FINDINGS AND CONCLUSION**

Although the present College Model has changed little for 60 years, the foregoing historical review shows that higher-education financial reporting has taken several diverse and interesting directions during the twentieth century. Collectively, the unique aspects and contributions of the reporting models are so numerous that one can have difficulty grasping an overall historical perspective.

For the same reasons that the 1910 Carnegie Model suggested that financial data be summarized, a summary of the historical, present, and future reporting models is provided in Table 3. In Table 3, the number of primary statements, the number of accounting funds, and the unique features are listed for each reporting model.
TABLE 3
Summary of College and University Report Models

<table>
<thead>
<tr>
<th>Reporting Model</th>
<th>Year Published</th>
<th>Number of Statements</th>
<th>Number of Funds</th>
<th>Unique Features of the Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARNEGIE</td>
<td>1910</td>
<td>4</td>
<td>3</td>
<td>a. Is the first known effort on uniform financial reporting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Is based on needs of specific users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. Used varying levels of detail to fit differing reader interests.</td>
</tr>
<tr>
<td>ARNETT</td>
<td>1922</td>
<td>2</td>
<td>3</td>
<td>a. Arranged the balance sheet to answer important user questions first.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Disclosed overall and divisional net profit.</td>
</tr>
<tr>
<td>MOREY</td>
<td>1930</td>
<td>3</td>
<td>4</td>
<td>a. Was not based on any perceived user needs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Reported revenues and expenses on separate statements</td>
</tr>
<tr>
<td>COMMITTEE</td>
<td>1935</td>
<td>4</td>
<td>8</td>
<td>a. Established uniformity as more important than user needs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Disaggregated statements into eight funds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. Partitioned current funds into unrestricted and restricted funds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>d. Suggested the columnar form as an alternative for the balance sheet presentation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>e. Included statements that explained the change in each fund balance.</td>
</tr>
<tr>
<td>COLLEGE</td>
<td>1974</td>
<td>3</td>
<td>10</td>
<td>a. Established the columnar form of fund-balance change statement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Established the current funds operating statement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Included a cash flow statement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. Disclosed the difference between revenues and expenses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>d. Based the required statements on the needs of specific users.</td>
</tr>
</tbody>
</table>
As shown in Table 3, all reporting models suggested from two to four primary statements be provided. Although they varied greatly on the format of the balance sheet and the operating statement, none of the reporting models included unorthodox types of statements. Perhaps the most original statement was the 1922 Arnett Model's use of divisional net profit statements. Also, the proposed 1992 Nonprofit Model would provide cash-flow reporting for higher education for the first time.

Table 3 shows that the number of accounting funds disclosed on reports increased steadily throughout the century to a maximum of 10. Interestingly, while eight funds were used in the 1935 Committee Model in an effort to gain reporting uniformity within higher education, one fund is proposed for the FASB's Nonprofit Model to gain reporting uniformity among all nonprofit entities.

A review of each model's unique aspects shown on Table 3 suggests that trade-offs occurred between simplicity and uniformity. For example, the earliest modelers (i.e., Carnegie and Arnett) were concerned with the general body of users, users' information needs, and the need to keep reports simple. A second wave of modelers (i.e., Committee and College) were concerned with uniformity even at the risk of making reports unreadable by anyone not trained in college accounting.

The FASB's 1992 Nonprofit Model represents the completion of a cycle back to simplicity in higher-education reporting. As a result, the Nonprofit Model is consistent with a basic objective contained in the Carnegie Foundation's seventh annual report of 1912:

> Simple and intelligible reporting is acceptable alike to the financier, the layman, and the student, and is equally desired by all. What all these wish to know are the general totals of permanent resources with their increases and decreases, and the totals of current income and expenditure with their distribution and balance.

[Carnegie Foundation, 1912, p. 131]

Besides providing consistency with the original objectives for college financial reporting, the 1992 Nonprofit Model could also provide a partial answer to a new problem in today's information society: information overload. In a 1989 interview for the Accounting Review, renowned scholar and author Herbert Simon, talked about the overabundance of information and the need for humans to be selective in the amounts and types of
information they process. He admonished the accounting profession to remember that "... the scarce resource is human attention, not information" [Ijiri and Sunder, 1990, p. 659, emphasis added]. In this historical review of higher-education models, one can see that modelers varied in their understanding of and compliance with Simon's axiom. Since Simon contends that unread information is irrelevant information, report simplicity and readability is the higher-education accountants' challenge for the twenty-first century just as it challenged the leaders of the Carnegie Foundation at the start of the twentieth century.

REFERENCES


Arnett, Trevor, *College and University Finance*, New York: General Education Board (1922).


Morey, Lloyd, University and College Accounting, New York: John Wiley and Sons (1930).
__________, Suggested Forms for Financial Reports of Colleges and Universities, Champaign, IL: National Committee (1931).
Savage, Howard, American College Athletics, New York: Carnegie Foundation (1929).
THE EVOLUTION OF THE PROFIT CONCEPT: ONE ORGANIZATION'S EXPERIENCE

Abstract: The accounting innovation and change literature has emphasized the contingent relationship between the accounting system and a variety of environmental forces. This paper utilizes a longitudinal analysis to evaluate this contingent relationship within one nineteenth century organization, The Calvin Company. The results generally are consistent with most findings from the literature. In particular, the study examines the shift in the profit concept to a short-versus a long-term perspective. This has parallels with the emerging role of the corporate form of business organization and the entity, as opposed to, proprietary view of accounting.

The accounting system shaped the organizational reality to the extent that the accounting for an event had a subsequent impact upon The Calvin Company's direction. The conclusions highlight the contextual nature of accounting. Accounting and accounting change must be interpreted in terms of the underlying developments within the entity, and within its external environment.

The accounting change and innovation literature has become the focus of research in accounting history [Bhimani, 1993; Edwards, 1991; Hopewood, 1987]. The present study examines accounting change within the context of one Nineteenth Century organization, specifically the environmental factors related to the shift in the profit concept from a short- versus a long-term perspective. The significance granted to the profit concept evolved in tandem with The Calvin Company's adaptation to the changing business conditions of the nineteenth and early twentieth century. A major aspect of the latter was its adjustment to the corporate form of business organization. The paper begins with a chronology of The Calvin Company (TCC) followed by a literature review, the research framework, analysis, conclusions, and interpretation.

The author gratefully acknowledges the helpful comments of D. B. Thornton, the editor, and the anonymous reviewers, and the research support of the Social Sciences and Humanities Research Council of Canada.
A CHRONOLOGY OF THE CALVIN COMPANY

TCC began operations in the 1830s, growing in scale and scope throughout the nineteenth century to include (among others) shipbuilding, wrecking operations, and towing services. TCC's business enterprises encompassed the several stages along the supply chain to meet the market demand for primarily oak timber and, to a lesser extent, staves. Given its varied activities, represented schematically in Appendix 2, TCC's information requirements would differ at alternate points along the supply chain.

At the supply end, TCC had to decide whether to make or buy its timber, to act solely as a forwarder or to sell also on its own account, and how to administer its joint ventures and to finance its operations overall. On the demand side, TCC had particular information needs, for example, to sell its timber at Quebec or to ship it directly to Great Britain. Acting as a commission agent, TCC rafted much timber at the risk of other owners. Thus, it had to determine when it was best to sell, taking into account market conditions, possible commissions and the potential competition created by its own timber. As well, TCC had to weigh the strategy of contracting to sell its upcoming production (a precursor of futures contracts) against taking its chances on the open market.

In 1836, D. D. Calvin moved his base of operations from Clayton, New York to Garden Island, near Kingston, Canada. Garden Island offered a strategic location with a good harbor for both timber storage and raft construction. Timber and staves first were shipped to Garden Island before subsequent rafting to Quebec, with the rafting season running from late April until November. In 1839, Calvin entered into a partnership with John Counter and Hiram Cook, formalizing an existing string of joint ventures. During this early period, financial concerns predominated as the timber market was slow and credit was tight. Moreover, the partners had conflicting opinions about the advisability of continued timber-cutting during a low market (increasing their risk and holding cost) versus the shipment of timber to Garden Island to keep its vessels in operation. Counter, discontent with TCC's activities, withdrew from the partnership at the end of 1843 and the business was reorganized as Calvin, Cook & Company. At this time, C. E. Dunn entered

1A time-line of the firm is provided in Appendix 1.
the firm. The new partnership did not operate without discord and T. H. Dunn replaced his brother at the end of 1844. Subsequent internal debates resulted in a major restructuring of the firm and a new partnership with T. H. Dunn commenced on January 1, 1847.

The period from 1845 to 1850 saw the rise of economic liberalism in Great Britain, which brought both the loss of colonial preference and responsible government to the colonies. The end of tariff protection in 1846 did not reduce immediately Canadian exports of hewn timber, due to the concurrent upswing in British demand and the gradual elimination of duties. However, a rush to get shipments to Great Britain before the loss of preference resulted in an oversupply in the world market [Lower, 1984].

As TCC expanded, the partners’ geographic separation reinforced their differing business interests. In 1850, Dunn withdrew and Cook and Calvin divided their holdings. D. D. Calvin’s brother-in-law, Ira A. Breck, purchased a 25 percent interest in the firm, and Calvin and Cook formally dissolved their partnership at the end of 1854. During the 1850s, TCC faced both good and bad years, as it dealt with the shortcomings of its market forecasts and local problems, such as the fear of cholera in 1854 which disrupted timber rafting. TCC’s reported profits also were reduced by its policy of taking major write-downs of assets versus a systematic method of depreciation. This contributed to the losses of 1858 and 1859.

Correspondence of the 1860s reads much like that of the 1850s. Concern about credit, the tendency to overproduce and the declining quality of the timber continued throughout the decade. The correspondence from 1867 easily could be mistaken for that of 1862 or 1864, were it not for the dates, with the same issues repeating themselves. In 1868, TCC began to make shipments directly to Great Britain, in sharp contrast to its initial policy of selling all its timber at Quebec. TCC had considered shipping “a last resort,” and only to be done “under extreme necessity.” By the end of 1869, the partners’ capital had grown to more than $360,000 from $160,000 in 1862 (approximately 12 percent per year).

TCC entered the 1870s as the industry leader in terms of oak timber (QUA, Box 117, Folder 1), reporting its largest profits in 1871 and 1873. The depressed world market reversed this positive picture and TCC’s reported return dropped by more
than 85 percent in 1874, followed in 1875 by its first loss since 1859. TCC broke even in 1876, with additional losses in the last three years of the decade. TCC persisted in its timber operations, stockpiling considerable inventory. Activities increasingly were concentrated in the United States, but these operations did not prove profitable. TCC was left with the risk of real estate holdings in the United States, and the write-off of considerable sums due to poor timber quality. In 1879, TCC reported its largest net loss at more than $91,000. At the beginning of 1880, partners' capital was $316,133.82 compared to $389,479.23 in 1870. As indicated in Appendix 3, this was a drop of 18.83 percent, and a notable decrease from the years 1873 to 1876 in which their capital had been reported at over $500,000.

In 1880, Breck retired and TCC continued as Calvin & Son. In 1884, D. D. Calvin died, and the estate was divided among his heirs. TCC’s final years were encompassed in the end of the square timber trade more generally, as the industry was dominated increasingly by sawn lumber. Incorporated in 1886, TCC remained a family enterprise, a factor which appeared to constrain its flexibility. The loss of its labor force, transportation improvements, and a shorter timber season reinforced TCC’s declining profitability, as its facilities and ships were ill-suited for alternate uses. Operations ceased at the outbreak of World War I.

LITERATURE REVIEW

The accounting innovation and change literature has attempted to explain the adaptation of the accounting system to specific organizational circumstances. There is the frequent assumption that change is beneficial, resulting in a better fit between the organization and its environment. Much of this research has utilized a contingency framework, drawing upon organization theories of organizational structure and change.

---

2Operations in the United States generally were conducted as joint ventures with individual company agents.

3It has been suggested that TCC ceased operations with the onset of World War I [Swainson, 1980]. Examination of minutes of shareholders’ and directors’ meetings [QUA, Volume 80], and of company letters [MMA, Letterbook 23 g 24] imply that the decision was taken much earlier. This included the cancellation of fortnightly church services at the end of 1913, and the closing of the Garden Island school in July of 1914.
While structural contingency theories were popular in organization theory in the 1950s, 1960s and 1970s, this interest has diminished in recent years, especially with the emergence of other perspectives such as organizational ecology, institutional theory and organizational economics. However, contingency research remains popular in accounting, especially in the area of budgetary control [Merchant, 1984], budget-related behavior [Williams et al., 1990], accounting information system design [Kim, 1988] and strategy [Simons, 1987]. Early studies in both organization theory and accounting posited mere congruence theories and lacked a link between organizational fit and organizational effectiveness. The rudimentary notion was that structure was contingent upon contextual factors, thus variations in the two were related [Drazin and Van de Ven, 1985; Otley and Wilkinson, 1988].

In some ways, the ecological (natural selection) and institutional (managerial selection) perspectives justify congruence. The former views fit as an evolutionary process of adaptation wherein only the best-performing organizations survive. It is also more pessimistic, as organizations are subject to structural inertia due to internal and external pressures for stability. The institutional view takes into account micro and macro levels of organizational design, but also constraints in terms of practices and prescriptions imposed by institutional forces [Drazin and Van de Ven, 1985, pp. 516-17]. More complete formulations of contingency theory have emphasized the notion of fit between the organization and its environment [Drazin and Van de Ven, 1985; Gresov, 1989; Kim, 1988]. Pennings [1992] has described the latter as the equifinality view as opposed to the determinism inherent in the natural and managerial selection approaches.

Contextual variables have been classified broadly in terms of three categories: organizational size, technology, and environment. In turn, these factors are hypothesized to influence the organization and its accounting and information system.

Organizational size was utilized by Bruns and Waterhouse [1975] in their study of budgetary control. Increasing size was correlated to greater structure in activity and decentralization of control. Merchant [1981, 1984] also included the effect of size in the adoption of alternate control strategies. Increased size led to greater decentralization and reduced interaction amongst subordinates and superiors. Greater reliance upon procedures and paperwork also was noted, supporting earlier work by Gordon.
and Miller [1976]. There is some debate, however, whether size is a contingent variable, or whether it is within the organization's control and relatively fixed in the short term.

Technology has been included within contingency research beginning with Woodward's [1965] studies of workflow and structure. A number of studies have incorporated technological effects on accounting system design. A difficulty has been the varied concepts of technology utilized. For example, technology has been characterized alternatively in terms of production inputs, transformation and outputs.

Within accounting, technology has been theorized by Waterhouse and Tiessen [1978] in terms of technological routineness and environmental predictability. More recent empirical studies by Merchant [1984, 1985] define technology as the level of automation and predictability of the production process. Kim [1988] and Williams et al [1990] adopt Thompson's concept of departmental interdependency. Given that technological change contributes to environmental uncertainty, Pennings [1992] has argued that the former should be subsumed within the broader category of environment.

Environmental uncertainty has been included in contingency studies beginning with the seminal work of Burns and Stalker [1961] and Lawrence and Lorsch [1967]. Gordon and Narayanan [1984] included perceived environmental uncertainty in terms of the impact upon organizational structure (organic/mechanistic) and the type of accounting information system utilized. Govindarajan [1984, p. 127] emphasized environmental uncertainty, defining the latter as "the unpredictability in the actions of the customers, suppliers, competitors and regulatory groups that comprise the external environment of the business unit." Gordon and Miller [1976] subdivided environmental uncertainty in terms of environmental dynamism, heterogeneity and hostility, whereas Amigoni [1978] classified it with respect to turbulence and discontinuity. Khandwalla [1972] dealt specifically with the level of competition facing the individual firm. Again, these different ways to operationalize the construct have led to confused and often weak results from empirical studies.

An event-history analysis of the California wine industry by Delacroix and Swaminathan [1991] united a number of these related concepts together as environmental variation: the degree of environmental uncertainty, the amplitude of change in the
environment and the frequency of this change. Although the authors adopted an ecological approach, the study examined the question of adaptive organizational change and the impact of the latter upon organizational survival. Moreover, survival was distinguished from performance. The former being a necessary precondition for organizational fitness and the latter denoting preparedness for future action.

Haveman [1992] studied organizational change in the savings and loan industry in the United States, under the assumption that environmental change occurs at the same rate for all organizations in the population. A motivation for the study was the paradox within ecological theory that change increases the risk of failure, but that organizational change is nonetheless abundant [Haveman, 1992, p. 53]. Haveman focused on changes in the organizational domain; domain being defined as the clients served, goods and services provided, and technologies utilized. Two changes affecting the savings and loan industry have parallels to TCC: first, technological innovation, including the speed of information processing, which increased economies of scale and scope; second, macroeconomic change with respect to shifts in the money supply and the volatility of financial credit. The two are not disjoint. Technological change, coupled with deregulation, enhanced competition, reduced profit margins, and increased overall environmental uncertainty.

Organizational culture often has been overlooked in contingency studies, although its influence was included by Flamholtz [1983] in the framework of the overall organizational control system. The relationship between accounting and culture recently has received more interest, wherein organizational culture incorporates the shared values of the organization as embodied in the control system. Importantly, culture includes the selection and socialization process [Van Maanen & Schein, 1979] and power relations [Markus and Pfeffer, 1983]. Cultural factors have been recognized in studies of nineteenth century Canadian business [Bliss, 1987; McCalla, 1979, 1984]. Business relations and social ties frequently reinforced each other. Trust was the key factor in the granting of credit, for example, especially when market contractions occurred. McCalla [1984, p. 18] has described the nineteenth century business environment as "competitive yet mutually supporting." This description is similar to Ouchi's [1979, 1980] view that cultural or clan mechanisms reduce conflicts between individual and organizational
goals, promoting a sense of community. Moreover, clan mechanisms are preferable in terms of lower transaction costs as opposed to market and bureaucratic control systems.

Many studies into organizational and accounting change have demonstrated weak results. This has been due, in part, to inadequate data and mis-specification of the contextual variables. Dent [1990] suggests that the lack of compelling results also stems from the deterministic implications of these contingency theories. Likewise, Simons [1987, 1990] asserts the need for a more voluntaristic position, especially in relation to organizational strategy. Strategy previously has been included in studies by Khandwalla [1972] and Govindarajan and Gupta [1985]. This study does not incorporate strategy, but does examine the dynamic process through which innovation and change occurs. The longitudinal nature of the research mitigates a limitation of cross-sectional studies by examining processes and accounting's implication in the perception of organizational possibilities.

The foregoing review demonstrates that the current paper is grounded in an established literature, but also contributes to it by emphasizing longitudinal processes. Thus, the paper should be of interest to not only accounting historians, but also accounting and organizational researchers examining the issues of (accounting) innovation and change.

**RESEARCH FRAMEWORK**

TCC's history has been divided into two periods. During the first phase (1839 to 1869), the company commenced operations, growing in both scale and scope, primarily within Canada. The second phase (1870 to 1915) incorporated TCC's diversification efforts into the United States, the increasing importance of non-timber freighting, and the wind-up of its operations. The two periods have been determined *ex post* based upon the presence of management accounting information during TCC's second phase.

**Data Sources**

The source materials utilized in this research can be grouped into three categories. Each of these categories are described in the following paragraphs.

The Calvin Company Records contained at the Queen's University Archives, Kingston, Canada comprise the primary re-
search data. These documents encompass records of the company's timber, ship-building, salvage and towing operations; along with records pertaining to family and personal legal matters. The catalogue lists 256 bound volumes and 136 boxes, arranged according to the main group or category, as well as chronologically.

The Queen's University collection is strengthened by its smaller counterpart, The Calvin Collection, archived at The Marine Museum of the Great Lakes, Kingston, Canada. The latter contains nine boxes of chronologically-ordered records of a personal and business nature, as well as a large number of bound volumes of company and personal records. Since the Marine Museum primarily contains records of the Garden Island branch, it fills significant gaps within the Queen's University collection.

Publications dealing with TCC's history have served as a starting point to determine critical events in the company's life. These sources have been used with caution, given that many have been written by family members. A wide spectrum of published materials in both accounting and Canadian economic history has been consulted to provide the necessary contextual background. A list of these sources is included in the References.

Data Analysis

The evolution of TCC underscores a variety of economic and social factors which affected and were affected by its operations. The cross-temporal comparison of the accounting system in TCC's two phases seeks to uncover clues with respect to TCC's evolution, and with respect to environmental changes which are linked to the former. Based upon the review of the existing literature and an evaluation of TCC's own chronology, the following contextual variables potentially had an impact upon TCC's activities, and upon its internal accounting system:

1) **Organizational size** — the greater scope of the business, including the geographic dispersion of the partners, and of their agents.

2) **Technological innovation** — advances in the timber industry which fed back into the company's operations, and influenced its methods to account for them.

3) **Macroeconomic change** — shifts in financial credit and the profit focus, especially due to the shortened operating cycle in the timber industry.
(4) **Organizational culture** — the importance of family connections to provide for stewardship and accountability, and to reduce problems of agency, thus making explicit contracts less important.

**THE PROFIT CONCEPT IN FOCUS**

The transformation from bookkeeping to accounting has been described by Littleton [1966, p. 165] as the shift from "a mere method of systematically recording exchanges into a means of giving business management an effective control over its affairs." Included in this transformation has been a shift from a long- to a short-run profit concept. Initially, profit denoted the increase in net assets over time, but this view has been replaced by the focus upon the difference in net assets between two points in time. The change relates to two accounting developments at the end of the nineteenth century: the emergence of the entity, in contrast to the proprietary, view of accounting and the concept of the periodic income of a going-concern. Both are related to the rise of the corporate form of business organization [Littleton, 1966, pp. 165-221; MacNeal, 1970, pp. 292-295]. This altered emphasis emerged in TCC, as it adapted to the business conditions of the late nineteenth century. One aspect of the latter was TCC's adjustment to the corporate form of business organization.

TCC operated within an environment in which communications were slow, and often faulty. Decisions were taken with a long-term perspective, which influenced the nature of the business enterprise. The nineteenth century concepts of periodicity and profit cannot be equated with the timely reporting of yearly income. The determination of profit envisaged a longer time horizon with profit calculation made at the wind-up of individual ventures, or the liquidation of a business enterprise. The partners operated jointly to augment their personal wealth, the evaluation of their success to be made only at the dissolution of the partnership. Economic circumstances weighed heavily upon their ultimate success or failure, but little could be done to influence such events. Instead, TCC rode out the market fluctuations in a never-ending quest for credit, and for new avenues of

---

4 This statement is not intended to suggest that the entity concept was unknown before this time. Rather, its roots can be traced to the venture system of accounting which was prevalent in the fifteenth century.
commercial endeavor. The formal partnerships were based upon a commercial system grounded in concepts of trust, stewardship, and the accountability of the firm’s individual members [Bliss, 1987; McCalla, 1979].

This long-term perspective was incorporated into both TCC’s Articles Of Agreement, and the operation of its accounting system. The former set out the copartnership terms, including the calculation of and the allocation of profit. The agreement provided the initial basis for partnership valuation, as well as the contractual basis for wealth-sharing at final dissolution. It also ensured that the partners did not operate in conflict with, or in competition with, their mutual interests. The opening of branch offices and the geographic dispersion of the partners reinforced this need for accountability.

The Articles Of Agreement [MMA 980.150.82] between Calvin, Cook and Counter stated “that all gains, profits and increase arising from the said joint Trade and business shall from time to time during the term of Copartnership be equally and proportionally divided between the said Copartnership share and share alike and that also all such losses as shall appear in the said joint business . . .” Profit would be determined by the rendering of accounts by the copartners related to all “receipts and disbursements and all other things whatsoever done or suffered by them in the said joint business . . .” The document was not specific about either the timing of profit, other than “from time to time”, or, about the length of the partnership. These points were clarified in the next two agreements.

When C. E. Dunn entered at January 1844, the Articles Of Agreement [MMA 980.150.176] stipulated “that all gains, profits and increase arising from said Trade and business shall be divided at the expiration of the term as herein provided of said Copartnership, in proportion to their respective stock or share in said business or Trade. And that also all the loss or losses which may accrue or arise from said business . . . shall be borne, in proportion to their respective shares in said business, by the said parties.” The term of the partnership was set as five years from the date of the contract, unless otherwise dissolved as provided for in the agreement. Dunn entered the partnership with no capital contribution; a “free-rider” in that he was to receive a proportionate share of partnership increases and decreases. Differences between the accounting records and the Statement Of Affairs (SOA) upon which the partnership valua-
tion had been determined suggest that the accounting system could not be relied upon for wealth allocation, and that any Profit and Loss (P&L) balance would not be an accurate estimate of partnership wealth.

The third *Articles of Agreement* between D. D. Calvin, H. Cook and T. H. Dunn [MMA 980.150.221] had more stringent accountability provisions related to partnership shares and responsibilities. Greater emphasis upon the accounting system as an interim measure of both stewardship and accountability was observed. It also specified the term of the copartnership, at the end of which profits or losses would be divided according to the partners’ individual shares — five-twelfths each for Calvin and Cook, and two-twelfths for Dunn. It limited withdrawals by individual partners to a monthly allowance, and eliminated their authority to extend credit. These enhancements to both the accounting system and the contractual agreement sought to maintain the accountability of the partners which had been the major feature of the 1839 agreement.

Given the partnership contract, there was no requirement to calculate profit or loss on a systematic (such as yearly) basis, since the final gain or loss would be declared upon dissolution of the joint business. The partners were required to present an annual report of the transactions undertaken related to the joint ventures, but this did not require that any interim profit or loss be divided amongst them. For example, at the end of the Calvin, Cook & Counter partnership (December 1843), the overall profit of the ventures, as stated in the second SOA was £12,223 ($48,892) [MMA 980.150.174]. Importantly, the 1843 valuation could not have been made from the accounting records alone, but necessitated the use of the SOA. The SOA valuation was a mixture of book records and current value estimates. The latter were provided by various businessmen called upon with respect to specific assets, such as schooners and real estate. Receivables were stated at their net realizable value, with deductions made for estimated losses. Shipments in transit, and inventory on hand, were recorded at net realizable value, with allowance for estimated expenses to be incurred. In short, these accounting estimates of current value were a surrogate for prices in present-day equity markets.

Including the sum attributed to goodwill, Counter’s one-third share (£5,000) was debited to the P&L account, while reducing his liability to the firm. As noted by Littleton [1966, p.
the calculation of profit as the net difference between assets and liabilities emphasized the nineteenth century view which equated profit with an increase in capital. Thus, the SOA determined the return of capital to the partners. Although it was used only infrequently during the period from 1839 to 1869 (rather than to determine the outcome of individual ventures), the SOA provided the overall valuation of the joint ventures comprising the partnership. During the second phase, the SOA calculated return on capital, and allocated owners' equity between capital and profit. It was prepared yearly upon TCC's incorporation in 1886. The SOA was the formal document with which to determine the respective shares of the individual partners, initially at dissolution, and yearly once the firm attained limited-liability status.

From 1839 to 1850, the accounting system did not record profit in each year. The P&L Account was balanced at the end of 1840, 1841 and 1842. These amounts were not transferred elsewhere in the accounts, and the P&L Account was set back to zero. When J. Counter withdrew, the P&L Account was not balanced at all. The £5,000 value placed on a one-third interest formed the valuation basis for contracting when a new partnership was established in January 1844. The subsequent partnership began with a capital stock of £15,000, and C. E. Dunn was expected to pay £2,500 for his one-sixth share.

When the second copartnership began in 1844, and continuing with the third agreement from 1846 to 1849, the P&L balance was carried forward each year. Only at the end of 1849 was this amount transferred to the Stock Account. The dissolution of the partnership in June 1850, concurrent with D. D. Calvin's and H. Cook's agreement to divide their interest, eliminated the balance of the P&L Account. The shares of the individual partners were determined by the evaluation of their joint property. Calvin and Cook accepted responsibility for the assets and liabilities of their respective operations, along with the transfer by Calvin to Cook of the former's share in certain assets.

Calvin and Cook operated in outward form as a partnership, yet in substance were two separate businesses. This was formally recognized in 1854. The two partners did not wish to dissolve their arrangement formally in 1850, since the change at Quebec and additional changes at Hamilton and Garden Island might have been perceived as instability in their operations [QUA and MMA Calvin Company correspondence].
Thus, the long-term view of profit was reinforced by the partners' own attitude and conduct, and also by the Articles of Agreement which established the means for profit calculation and allocation. Each copartnership terminated with the overall evaluation of assets and liabilities. Profit was declared as the increase in net assets over time.

When Ira A. Breck entered the business in 1851, the value of his share was determined to be £2,606.11.6 (adjusted to £3,549.12.6 in March 1853 to correct earlier recording errors). This amount represented one quarter of D. D. Calvin's equity, calculated as the difference between the assets and liabilities of Calvin Cook & Company at December 31, 1850. Despite the introduction of a yearly profit number at this time, the concept of profit was not altered significantly. The profit or loss was mingled with other amounts in the Stock Account, and essentially was absorbed into capital. The shortcomings of this procedure were beginning to emerge — without the timely allocation of profit, there existed no method for Breck to pay for his partnership share.

In February 1860, journal entries (totalling $43,182.72) recognized the division of the business at January 1851. Entries allocated on a 75/25 basis the balance in the Stock Account resulting from profits and losses since 1851, and adjusted for Breck's salary during these years. The allocation of profit on a yearly basis according to the partners' capital shares provided Breck with a capital source with which to reduce his outstanding liability. The change culminated in greater attention to the yearly profit figure. The value placed upon Breck's share in 1851 was calculated from the value of the assets and liabilities, as recorded in the accounting records. This was a break from the earlier years when the latter were not relied upon for such valuations, thus creating the initial need for the SOA.

Beginning in 1860, the profit figure was both calculated and allocated at the year-end closing of the books. Nonetheless, the allocation did not imply that profit was considered to be short-term in nature, i.e., similar to the nineteenth century concept of income calculated on a going-concern basis. These changes also simplified the preparation of a balance sheet, yet there is no evidence that such a document was utilized. It probably was not necessary, since the two partners were in close contact with each other, and with business operations. The year-end closing procedures remained basically the same, although the system to
allocate transactions became much more complex as TCC expanded. While each individual account still was treated as a separate fund, one such account would be allocated to several others before a final profit or loss was determined. This had the effect of decreasing the potential information content of the final profit or loss figure from an individual venture. The transfer of costs from one account to another could create a gain in one account at the expense of others, contingent upon the transfer price used. For example, the company store and bakehouse generally showed a profit each year, yet this gain resulted from sales primarily made to TCC's operating departments. While the need for a balance sheet was not apparent during the first phase of TCC, this situation changed in the second phase, when the balance sheet assumed an important role within the reporting system.

TCC had to deal with changes in both its internal and external environment throughout the 1870s. In 1871, the entry of Calvin's son, Hiram, meant that profit was to be divided amongst three individuals. Hiram assumed a 25 percent interest in 1873, which unfortunately for him corresponded with the downturn in the world timber market.6

The preparation of a balance sheet was mentioned in a letter dated January 1872, written by Hiram to his father [MMA 980.150.280], and its preparation in 1870 can be inferred from other archival documents. The General Ledger indicates that the balancing of the P&L account was undertaken in two steps: an initial balancing determined the period's profit or loss, prior to the drawing of partners' salaries. The second step recorded the latter amount, such that the final profit, net of salaries, was revealed. Although this two-stage balancing appears to have been dropped in subsequent years, its use in 1870 may be explained by the increase in the salaries of Calvin and Breck from $3,000 to $5,000 each per annum. The payment of a yearly salary, in lieu of interest on their respective capital shares, had been confirmed in an agreement dated December 25, 1871 [MMA 980.150.973]. Hiram Calvin's interest in the 1871 profit probably was related to his entry into the business at this time. He was to receive 75 percent of the profit from the operation of the government tug-line service.

---

6This was especially unfortunate, since Hiram had agreed to finance his share with yearly payments with interest calculated at 6 percent.
The profit numbers, which had been rising during the 1860s and early 1870s, were transformed into heavy losses. Significantly, TCC retained its long-term perspective, essentially continuing to make timber, build ships, and to operate its other facilities in the belief that the tide eventually would turn. At the end of 1879, the firm’s stock of unsold oak lying in various Quebec coves amounted to 1,774,000 feet [Box 135, Folder 7, 1878-79]. With Hiram Calvin’s withdrawal from the partnership in 1877, it was possible for the two remaining partners to absorb the heavy losses.

While TCC attempted to cushion itself from sagging timber markets, and changing business conditions (such as increased competition in rafting, the shift from wood to coal fuel, and from ship to rail transport, the need to adapt became obvious in the 1880s. At Breck’s withdrawal, the long-term view prevailed for the last time. The accounting for this change affirmed that the two partners were to arrive at a final calculation of their profits over the period from 1851 to 1880. The Articles Of Agreement [MMA 980.150.976] of April 1880, which established the terms of Breck’s retirement, provided for the transfer by Breck to Calvin of the former’s interests in the firm, except for specified assets. Breck also was to receive $12,500 with interest at six percent per annum on the unpaid balance. In total, Breck received assets valued at $33,000 compared to his initial capital interest of $14,199. The balance of $29,702 in Breck’s Capital Account was declared a profit, which suggests that his interest had been overstated. Despite the yearly division of profit from 1851 to 1879, the final determination of this gain was made only at partnership dissolution.

Hiram Calvin reentered the business upon Breck’s retirement. The Indenture [MMA 980.150.726] between Hiram and his father stated that the former would receive a six percent payment on his Capital Stock as at April 1880 ($22,055.04), plus a yearly salary of $2,500. All profits or losses would accrue to D. D. Calvin.

While this arrangement may have been sufficient while D. D. Calvin was alive and head of the business, it was not adequate once his death cast the future course of TCC into doubt. Equally, the profit concept proved inadequate once the corporate form of business was adopted in 1886. Littleton [1966, p. 217] has described this inadequacy as follows:

But for a going concern the final facts are not yet avail-
able; it does not suffice to consider values (assets and liabilities) as if in liquidation, nor to use current values, for in both cases there is a lack of reality in the resulting calculation of profit because of the lack of actuality of the values used. The modern problem has come to be viewed as the problem of ascertaining income rather than profit; that is to say, the need at present is to distinguish between operating income and capital increments.

The year-end procedure whereby profit was transferred to the partners' capital accounts did not suffice once TCC was organized as a corporation, with contributed capital and the potential for both dividends and surplus. The situation also underscored TCC's need to move from a family business to the consideration of the family and the business as two separate entities.

At this juncture, the SOA reappeared in a much different format. The SOA next was used in 1884 in connection with the settlement of D. D. Calvin's estate. Upon incorporation in 1886, D. D. Calvin's heirs transferred to TCC their interest in the business assets in return for a cash settlement or shares of the new enterprise. Initially, TCC had to finance the share purchase, as their only collateral was their interest in the very assets now transferred to the firm. The new corporation issued capital shares in the amount of $157,500 (1,575 shares with a par-value of $100 each). TCC was required to distinguish clearly capital and profit, as capital had to be maintained, i.e., no dividends could be paid from issued capital. Corporate status legally required the presentation of an annual report to shareholders, thus the SOA was prepared yearly in a more detailed and formal manner. Of particular note was the linkage of the amounts recorded in the SOA with those recorded in the General Ledger. The SOA summarized the ledger entries for each account such that all gains and losses could be traced to their original source. The SOA also reinforced the duality of the accounting system, since it arrived at a profit number by the examination of individual accounts while the P&L Account yielded this same figure by an alternate route. The SOA clarified when such gains were

---

7 The settlement was not finalized for a number of years, given the mingling of the estate with company operations.
from capital or operations, which the P&L Account did not differentiate. Since issued capital stock was constant at $157,500, the SOA provided a means to divide owners' equity between profit made in the course of business operations versus increases in capital. Yet TCC's continued use of a fund system for its long-lived assets potentially could have obscured the difference between profits (or losses) arising from operations rather than from the valuation or liquidation of assets.

Additionally, the SOA indicated whether any profit led to a dividend payment or a contribution to a capital surplus. Two features of TCC's dividend policy are noteworthy. First, except for the year 1891, TCC declared a yearly dividend from 1888 to 1907. However, five of the nineteen payments were made, in whole or in part, by drawing down the Surplus Account. Second, the payment of a cash dividend implied the need for increased credit or for the liquidation of an asset. Only in 1894 did TCC possess adequate cash resources to cover the dividend payment. A comparison of TCC's dividend payments to the current (and most liquid) assets of cash and bills receivable indicates that the dividend exceeded these liquid assets from 15.10 to 858.66 percent.8

TCC's dividend policy also contributed to the erosion of its capital base. During the period from 1887 to 1915, TCC had total gains of $172,827 of which it paid out 76.59 percent in dividends. This left the firm without adequate funds to invest in new technology, let alone to finance ongoing operations. The balance sheets from 1887 to 1915 trace TCC's decline during this period. The company moved from a surplus to a deficit situation in 1911. From 1887 to 1915, TCC showed a profit in 22 of 29 years. However, this profit as a percentage of issued capital ranged from a low of 0.20 percent in 1887 to a high in 1890 of 21.22 percent. Losses were much higher in percentage terms, ranging from 6.47 percent in 1908 to 50.21 percent in 1914. The balance sheets also indicate the decrease in net assets from $157,812.42 in 1887 to $11,966.16 in 1915. At the end of 1915, the deficit account equalled 92.02 percent of paid up capital.10

8The average of the excess in these years was 169.93 percent (standard deviation $\sigma = 222.09, n = 19$).
9TCC's dividend policy and its financial impact are summarized in Appendices 4 and 5.
10This percentage was 96.56% in 1919, the last year for which financial statements have been located in the archival records.
This dividend policy could be considered a good strategy from the viewpoint of the firm and the entrepreneur jointly. TCC possibly was liquidated gradually for reinvestment or consumption by the owners.

As stated earlier, the concept of profit evolved during the company's life from the calculation of return of capital to the determination of return on capital — a stock versus a flow concept. Before incorporation, the balance sheet calculated profit as the net value of assets. It reinforced the nineteenth century view of profit as an increase in capital, as the yearly gain or loss was absorbed into the partners' capital accounts. This reflected TCC's long-run focus and the proprietary view of accounting. The accounting equation was Assets = Liabilities + Owners' Equity. This view was evident at Breck's retirement in 1880 at which point the partnership's profit (return of capital) could be determined.

Moreover, when the SOA was employed in 1842 and 1843 (and possibly 1850), its primary objective was the calculation of the return of partners' capital. It established the change in wealth over time — the return of capital. The latter was a stock concept, as it assessed the increase in net assets over time. Since the partnership agreements called for the division of profit at the end of the various joint ventures, it was simply a matter of calculating the difference in net assets (assets less liabilities) over time. This difference was owners' capital. A profit was declared if this amount exceeded the original contribution made by the partners. For example, at the end of 1843, a profit was considered to have been made, but no estimation of the rate of profit or of the rate of return on capital was made. Further, there was no assessment of the decrease in this return during the period from 1842 to 1843. Profit was a long-term concept, and only deemed to have been realized upon termination of the partnership.

Subsequent to incorporation in 1886, the SOA returned in an altered format to calculate the return on capital — a flow concept. It focused on the short run, and the profit made in a single year, which permitted the profit of a single period to be related and compared to that of other periods. The SOA indicated the allocation of profit between surplus and dividends, or the payment of dividends via a reduction in the surplus account.

11Counter's award of £5,000 exceeded his initial contribution of £3,000.
Additionally, the SOA provided the return-on-capital figure, since the issued capital was constant at $157,500. TCC's management did evaluate the return on capital (ROC) for the period from 1888 to 1913 [MMA, Letterbook 23, pp. 728-729]. Over this 26 year period, TCC paid an average dividend of $5,088.45 per year. This represented a ROC of 3.23 percent per year. The report further indicated the total gains and losses were $179,183.91, an average gain of $3,041.69 per year. The evaluation of the total profit over a 26 year period suggests that TCC had not shifted completely from a long-run profit to a yearly income figure. Moreover, the indicated average gain represented a ROC of only 1.93 percent. In contrast, the dividend payment was greater, ranging from two to six percent of issued capital. However, TCC's actual rate of return was more variable, ranging from a loss of 29.24 percent to a gain of 21.22 percent. It is not unlikely that this evaluation, along with a further loss in 1913, motivated the decision to wind-up operations in March 1914. Interestingly, it was also in 1914 that TCC replaced the SOA with a Profit & Loss Statement.

The shift to a limited-liability company did not enhance TCC's viability, as family members did not distinguish TCC from the estate of D. D. Calvin. The payment of dividends over the period from 1888 to 1907, instead of the reinvestment of funds, led to the erosion of the firm's capital base. The short-run fixation made it more difficult for TCC to invest the capital required to position itself as a forwarder in markets other than square timber. As noted by H. Calvin in a letter to his brother-in-law dated September 1886 [QUA, Volume 26, Folio 67], it might have been preferable for Hiram to have purchased the assets of the business, rather than to deal with the varied interests of family members and other shareholders. In time, Calvin became the majority shareholder, but this alone did not reverse the firm's fortunes.

CONCLUSIONS AND INTERPRETATION

Studies of organizational and accounting change have examined the impact of various contextual variables upon the organization and its accounting system. Parallels can be drawn with TCC's own experience. In broad terms, TCC's accounting

---

12The analysis of TCC's profitability for the years 1887 to 1915 is presented in Appendix 6.
system moved from a recorder of events to a system which would provide the means to control its operations.

It has been hypothesized [Bruns and Waterhouse, 1975; Merchant, 1981, 1984] the organizational size influences the accounting system, especially in terms of standardization and complexity. TCC's case reinforces this argument. During TCC's early years, accounts were not kept in a timely manner and were closed variously, depending upon the circumstances of the individual venture. The accounting records were not relied upon for partnership valuation, as the former were incomplete. The dissolution of the first partnership in 1843 was based upon the SOA prepared by an arbitrator. Similarly, the partners' respective shares at the dissolution in June 1850 resulted from a negotiated settlement, as was the division of assets between Calvin and Cook.

Over time, reliance upon the accounting records increased, as they became more systematic. The accounting system's role was enhanced by the growing concern for partners' accountability, and by their geographic dispersion. Moreover, various contracts for partnerships, and joint operations were tied to the accounting records for profit determination. For example, the value of Breck's share at 1851 was derived from the recorded values in the accounting records, whereas previous partnerships had used current-value estimates made by partners and outside arbitrators. In the initial years, agency concerns appeared to outweigh those pertaining to the relevance of these estimates. This interpretation lends support to the findings of Gordon and Miller [1976] and Merchant [1981, 1984] that increased organizational size leads to greater reliance upon an administrative control strategy and more formal patterns of communication.

The accounting system also was affected by internal changes. In December of 1846, the reorganization of the partnership brought a concurrent reorganization of the accounting records to include the valuation of its net assets, and the recording of the partners' respective shares. In 1860, the calculation of the partners' capital accounts changed, including the yearly allocation of profit.

As TCC entered its second phase, emphasis upon the accounting system increased, as the yearly profit calculation was granted greater significance. This situation paralleled changes in the internal organization, especially the entry into the firm of H.A. Calvin in the early 1870s. The accounting system ex-
panded to provide better control of TCC’s operations, as they grew in scale and scope. As noted, the growth of the firm also led to improved methods to account for the partners’ capital interest. Again, this effect of size is consistent with earlier findings of Bruns and Waterhouse [1975] and Merchant [1981, 1984].

Interestingly, TCC also provides a counter-example in terms of decreased reliance on the accounting system as the organization contracted. The later years saw the streamlining of the accounting system in tandem with that of TCC’s operations. Summary accounts were employed, along with the less frequent recording of events. This tendency to infrequent reporting prevailed during the economic downturn of the 1870, as well as when operations declined in the twentieth century. Thus it may be beneficial to explore further the role of the accounting system in organizational decline, in terms of the information which the system generates and how this information is utilized.

Haveman [1992] has examined whether macroeconomic change, which leads to organizational change, proves beneficial in terms of the organization’s subsequent performance and changes for survival. The results of the study provide some support for the proposition that “diversification is beneficial if it builds on competences developed by operating in the organizational domain and hazardous if it is not related to those competences [p. 71].” TCC also confronted macroeconomic change in terms of a shortened operating and financial cycle, and an increased reliance on external financing.

For example, to reduce the need for short-term financing, TCC moved from a partnership to a corporation. Incorporation resulted in a legal requirement to provide a balance sheet, along with changes in the latter’s composition to account for issued capital and surplus. Profit no longer could be absorbed into capital at year end, but the separation of the two was required. The yearly preparation of this information potentially contributed to the short-run focus, as revealed by TCC’s decisions to emphasize the results of the current year, in contrast to its long-term viability.

These alterations also were necessary theoretically to deal with the altered meaning of the profit concept. The emergent concept was linked more closely to the present concept of income — the periodic profit of a going-concern [Littleton, 1966].
While the calculation of profit brought together the related concepts of efficiency and effectiveness, it increasingly shifted TCC’s attention to the short-term profit number. This view was reinforced by the existence of shareholders who were not actively involved in the business. The former were concerned with the potential for and the payment of their annual dividend. This concern may have differed from that of others, such as H. Calvin, who had been active in the firm, and continued to manage it. The heterogeneity of interests reduced TCC’s ability to pursue opportunities, and to implement plans to ensure the continued success of the business.

During TCC’s later years, the balance sheet also tracked the firm’s decline. While its yearly preparation indicated the impact of the past year’s results and provided a starting point to plan future operations, TCC’s management did not seem to be sensitive to the information in its accounting reports, including the obvious need to reverse the erosion of its capital base. This insensitivity was reinforced by the format adopted in the accounts, which reported the growing deficit as a debit item, rather than as a reduction in capital.

Upon incorporation, the SOA (like the balance sheet) was legally required under the terms of TCC’s bylaws. Initially, the information had been prepared to meet these reporting requirements. Yet, with the use of the SOA, the importance of timing and of periodicity began to emerge. The SOA did not merely record the company’s financial situation, it also permitted management to ascertain where gains and losses were being made. However, TCC did not succeed in the shift from a family business to a business enterprise, i.e., a shift from the proprietary to the entity view of the business and of the accounting for it, such that the information was not utilized to its potential. Instead, the payment of dividends appeared to be of more concern, rather than the impact of these payments upon TCC’s capital base.

Product markets were in transition and did not build upon TCC’s existing strengths in the square timber industry. Technological innovation affected TCC and its efforts to expand into new products and maintain its competitive position. Thus, TCC was facing changes in its organizational domain which increased uncertainty and required adaptation to new ways of doing business. Endeavors into new technologies and markets did not prove viable, supporting Haveman’s [1992] proposition...
that such efforts are less likely to succeed if they are not grounded in existing organizational strengths. TCC initially began operations when the market and its related institutional framework were more amenable to the entrepreneurial firm, as exemplified by the many early entrants into the timber industry. The death of D. D. Calvin left the term at a crossroads. Faced with increased competition, and without adequate human resources, TCC was not positioned to confront the new challenges posed by the changes in the timber trade and by the technological advances of the late-nineteenth century. For example, TCC's management had sought to change course via greater investment in more efficient equipment. This option was delayed, and later poorly implemented, due to the concurrent policy of paying out the major share of earnings as dividends. The increasing scale and scope of business implied concomitant adaptations in the administration and control of business organizations. The shift from a partnership to a corporation brought with it the privilege of limited liability, but also certain duties towards its shareholders. Incorporation also meant new requirements in terms of accounting which could not be met by the accounting methods of the partnership.

Organizational culture, specifically the family style of business, was an important factor in TCC's evolution. TCC's situation reinforces McCalla's [1979, 1984] findings concerning the reliance on family ties and close business associates; personal trust being the basis for many business transactions. It also supports the work of Flamholtz [1983] and Ouchi [1979, 1980] with respect to the role of socialization and clan mechanisms as part of the management control system. The family style of business was reflected in TCC's operations and in its accounting for them. The close involvement of partners reduced the need for the calculation of the firm's net worth and profitability. Periodic assessment by the partners was possible through direct examination of the actual accounting records. No dissolution took place from 1854 to 1880, eliminating the need to determine partners' wealth as at dissolution or the commencement of a new partnership. It also permitted TCC to retain its long-run concept of profit. However, the latter changed significantly in the later stages of the company.

During TCC's first phase, the long-term view of profit was maintained, but the weaknesses of this perspective were becoming evident. The limitations possibly were related to the length
of the partnership. Calvin and Breck remained partners for approximately thirty years, such that TCC would have been described more aptly as an ongoing business, rather than as a series of joint ventures. These limitations became more obvious during the second period of TCC, especially with the adoption of corporate status. The emergence of a short-run focus also was revealed by increased attention to the balance sheet. The latter was not independent of the role of family members in the firm, and their remuneration. For example, with the entry of Hiram Calvin in the 1870s, the profit figure had to be allocated among three individuals; yet their financial position and interests conflicted.

The reliance on homogeneous beliefs and family ties was threatened upon incorporation and contributed to TCC’s decline. While operating in outward form as a limited company, in substance, TCC remained a family business. TCC’s waning years were ones of missed opportunities. TCC’s dividend policy, which led to the erosion of its capital base, contributed to the latter. The payment of dividends (which were roughly double the return generated in the firm) lends support to the argument that TCC’s decline was due, in part, to its unsuccessful shift from a family business to a business enterprise. The firm was utilized as a means to provide for family members who received dividends (and in some cases salaries) from the firm, TCC was left without the capital required to sustain its place in the market. TCC’s experience reinforces the argument of Bliss [1987] that family firms often failed to develop managerial expertise, instead relying upon family ties and tradition. Indeed, the comments of Bliss [1987, pp. 352-353] are appropriate here:

The secret of making the transition from builder-promoter-entrepreneur was to find ways of bringing the business under accounting control, if only by hiring people who could, . . . not just to produce a clear sense of where each department was going, but to use the accounts to unleash the energies of managers and employees whose responsibility for their performance could be clearly traced and measured, no matter how big the organization.

The competitive environment of the twentieth century required the ability to control its ventures, but, significantly, also the ability to control those responsible for them.

The research results affirm the need to consider accounting
within its environmental context. While the study is limited to one firm, the effect of rapid technological change, competitive pressures and new financial and organizational arrangements have parallels with present-day organizational experience. TCC's case provides insights to assess the potential outcome of attempts to deal with current challenges. As noted by Previts et al [1990, p. 7], historical studies "specify social and economic conditions that influence existing and proposed practice techniques, enhancing our ability to evaluate competing techniques as suitable for the current environment and circumstances." Moreover, current research into management control perhaps needs to incorporate a longer time frame in order to understand the role of the accounting system, and to assess the influence of social, economic, and institutional forces.

Accounting's implication in the assessment of perceived organizational possibilities cannot be disregarded in the formulation of theoretical prescriptions for accounting practice. TCC's example demonstrates the unintended consequences of innovations and of the accounting's systems efforts to account for them. Thus accounting researchers may achieve greater success with and acceptance of their theories by providing conditional prescriptions in terms of the particular organizational context. For example, organizational size and culture differ across firms, yet their effect may be circumscribed by other overriding environmental forces.

Future research is necessary to determine to what extent TCC's experience was similar to that of other firms of the period. This would improve our understanding of organizational and accounting change and provide additional insights for developing more broadly-based theory. Finally, the differences between the proprietary and entity view of accounting, as demonstrated within TCC, merit further attention. In TCC's later years, the accounting equation had been changed theoretically from $\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$ to $\text{Assets} = \text{Equities}$, highlighting the separation of the owner from the entity or organization. The increasing importance of the corporate form and the role of the shareholder versus proprietor/partner contributed to this shift in perspective. Profit was no longer a long-run change in wealth, but net income, i.e., revenues less expenses. It may be fruitful to reexamine these differences in terms of recent research into foundational issues.
REFERENCES


*The Calvin Company Papers*, Queen’s University Archives (QUA), Kingston, Ontario.


Flamholtz, E. G., "Accounting, Budgeting And Control Systems In Their Organizational Context: Theoretical And Empirical Perspectives", *Accounting, Organizations and Society*, Volume 8, Number 2/3 (1983).


Kim, K. K., "Organizational Coordination And Performance In Hospital Accounting Information Systems: An Empirical Investigation", The Accounting Review, Volume LXIII, Number 3 (July 1988).


MacNeal, K., Truth In Accounting, Scholars Book Company (reissue), Lawrence, Kansas (1970).


MMA (See The Calvin Collection, above).


QUA (See *The Calvin Company Papers*, above).


1839
Calvin Cook & Counter organized December 1839.

1843
Departure of Counter at close of year.

1844
C. E. Dunn enters partnership with 1/6th share.

Business known as Calvin Cook & Co. at Garden Island, and Dunn Calvin & Co. at Quebec.

Opening of Hamilton branch, Hiram Cook & Co.

1846
C. E. Dunn leaves partnership at end of year.

1847
T. H. Dunn replaces his brother effective January 1st.

1850
T. H. Dunn leaves partnership at June 1850. Calvin and Cook divide their interests.

Quebec branch becomes D. D. Calvin & Co., other names unchanged.

1851
I. A. Breck assumes a 25% interest in Calvin’s business in January.

1854
Calvin and Cook formally dissolve partnership.

1855
Calvin and Breck formally recognize 1851 agreement. New partnership known as Calvin & Breck at Garden Island, Quebec branch name unchanged.

1873
H. A. Calvin purchases a 25% interest from his father.

1877
H. A. Calvin transfers his share back to his father.

1880
Breck retires. H. A. Calvin reenters firm, but with payment of salary in lieu of share in profits. Firm renamed Calvin & Son.

1884
D. D. Calvin dies, and his estate divided amongst heirs.

1886
The firm reorganized as a limited-liability company in June 1886. The new company called The Calvin Company Limited.
APPENDIX 2
The Calvin Company Operations

DEMAND
Quebec
   ↓
River Rafting
   ↓
Sell At Quebec
   ↓
Ship On Own Account
   ↓
Great Britain

SUPPLY
Garden Island
   ←
Western Operations
   ↓
Lake Freighting
   ↓
Raft Construction
Shipbuilding
Sail Loft
Merchandise A/C (Co. Store)
Bakehouse
Boarding House
Tug Line Service
   ↓
Timber Sources
Make Or Buy
Joint Accounts
Shanty Operations
   ↓
Timber Sources
Make Or Buy
Joint Accounts
Shanty Operations

The Timber Operating Cycle

Fall/Winter  →  Winter  →  Spring  →  Late Spring/Summer

Decision to buy/maker timber
Contracts for sale of upcoming season's output.
Timber Shanty Operations
Account Settlement continues.
Timber brought to shipping points. Lake Freighting begins.
Rafting from Garden Island starts.

Settlement of prior season's accounts.
Summer/Fall
Sales at Quebec on bills of exchange, or commission.
## APPENDIX 3

The Calvin Company Return On Capital — 1862 to 1886

<table>
<thead>
<tr>
<th>Year</th>
<th>Y/E Capital (1)</th>
<th>Profit (2)</th>
<th>ROC = 2/(1-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1862</td>
<td>$160,724.53</td>
<td>$33,348.08</td>
<td>26.18</td>
</tr>
<tr>
<td>1863</td>
<td>216,413.58</td>
<td>43,608.87</td>
<td>25.24</td>
</tr>
<tr>
<td>1864</td>
<td>232,795.79</td>
<td>33,677.69</td>
<td>16.90</td>
</tr>
<tr>
<td>1865</td>
<td>250,020.57</td>
<td>18,445.92</td>
<td>7.97</td>
</tr>
<tr>
<td>1866</td>
<td>268,376.62</td>
<td>20,731.96</td>
<td>8.37</td>
</tr>
<tr>
<td>1867</td>
<td>305,336.21</td>
<td>37,243.57</td>
<td>13.89</td>
</tr>
<tr>
<td>1868</td>
<td>317,790.60</td>
<td>23,783.18</td>
<td>8.09</td>
</tr>
<tr>
<td>1869</td>
<td>362,618.76</td>
<td>47,975.93</td>
<td>15.25</td>
</tr>
<tr>
<td>1870</td>
<td>389,479.23</td>
<td>40,268.30</td>
<td>11.53</td>
</tr>
<tr>
<td>1871</td>
<td>356,137.46</td>
<td>54,389.22</td>
<td>18.02</td>
</tr>
<tr>
<td>1872</td>
<td>483,095.21</td>
<td>45,875.98</td>
<td>10.49</td>
</tr>
<tr>
<td>1873</td>
<td>534,161.11</td>
<td>56,492.14</td>
<td>11.83</td>
</tr>
<tr>
<td>1874</td>
<td>527,946.29</td>
<td>8,240.24</td>
<td>1.59</td>
</tr>
<tr>
<td>1875</td>
<td>522,828.79</td>
<td>(11,355.18)</td>
<td>(2.13)</td>
</tr>
<tr>
<td>1876</td>
<td>527,456.44</td>
<td>2,649.13</td>
<td>0.50</td>
</tr>
<tr>
<td>1877</td>
<td>493,557.54</td>
<td>(8,515.79)</td>
<td>(1.70)</td>
</tr>
<tr>
<td>1878</td>
<td>405,474.30</td>
<td>(79,849.59)</td>
<td>(16.45)</td>
</tr>
<tr>
<td>1879</td>
<td>316,133.82</td>
<td>(91,503.63)</td>
<td>(22.45)</td>
</tr>
<tr>
<td>1880</td>
<td>305,613.56</td>
<td>37,186.67</td>
<td>13.85</td>
</tr>
<tr>
<td>1881</td>
<td>316,337.55</td>
<td>15,503.98</td>
<td>5.15</td>
</tr>
<tr>
<td>1882</td>
<td>526,091.00</td>
<td>27,689.08</td>
<td>5.56</td>
</tr>
<tr>
<td>1883</td>
<td>507,963.99</td>
<td>16,912.06</td>
<td>3.44</td>
</tr>
<tr>
<td>1884</td>
<td>509,655.24</td>
<td>(12,438.50)</td>
<td>(2.38)</td>
</tr>
<tr>
<td>1885</td>
<td>495,660.46</td>
<td>40,943.13</td>
<td>9.00</td>
</tr>
<tr>
<td>1886</td>
<td>508,368.83</td>
<td>11,279.07</td>
<td>2.27</td>
</tr>
</tbody>
</table>

APPENDIX 4
Dividend Policy — The Calvin Company
1887 to 1915

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL PROFIT DECLARED</td>
<td>$172,827.00</td>
</tr>
<tr>
<td>TOTAL LOSSES DECLARED</td>
<td>186,060.84</td>
</tr>
<tr>
<td>BALANCE OF LOSSES OVER PROFIT</td>
<td>($13,233.84)</td>
</tr>
<tr>
<td>TOTAL PROFIT DECLARED LESS DIVIDENDS</td>
<td>132,300.00</td>
</tr>
<tr>
<td>BALANCE OF PROFIT OVER DIVIDENDS</td>
<td>$40,527.00</td>
</tr>
<tr>
<td>TOTAL LOSSES DECLARED</td>
<td>186,060.84</td>
</tr>
<tr>
<td>DEFICIT ACCOUNT AT DECEMBER 1915</td>
<td>($145,533.84)</td>
</tr>
</tbody>
</table>

DIVIDENDS AS A % OF PROFIT DECLARED: 76.55%
TOTAL LOSSES TO TOTAL PROFIT: 1.08:1
**APPENDIX 5**

**Dividend Payment versus Liquid Assets***

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend Payment (1)</th>
<th>Liquid Assets (2) before dividend</th>
<th>Excess of 1 as % of 2**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888</td>
<td>$6,300.00</td>
<td>2,625.58</td>
<td>139.95</td>
</tr>
<tr>
<td>1889</td>
<td>9,450.00</td>
<td>5,054.67</td>
<td>86.96</td>
</tr>
<tr>
<td>1890</td>
<td>9,450.00</td>
<td>2,288.44</td>
<td>312.95</td>
</tr>
<tr>
<td>1891</td>
<td>—</td>
<td>5,976.46</td>
<td>—</td>
</tr>
<tr>
<td>1892</td>
<td>7,875.00</td>
<td>4,015.18</td>
<td>96.13</td>
</tr>
<tr>
<td>1893</td>
<td>6,300.00</td>
<td>6,362.08</td>
<td>(0.99)</td>
</tr>
<tr>
<td>1894</td>
<td>3,937.50</td>
<td>6,560.45</td>
<td>(39.98)</td>
</tr>
<tr>
<td>1895</td>
<td>6,300.00</td>
<td>1,101.46</td>
<td>471.97</td>
</tr>
<tr>
<td>1896</td>
<td>7,087.50</td>
<td>2,685.76</td>
<td>163.89</td>
</tr>
<tr>
<td>1897</td>
<td>9,450.00</td>
<td>6,458.26</td>
<td>46.32</td>
</tr>
<tr>
<td>1898</td>
<td>9,450.00</td>
<td>7,749.10</td>
<td>21.95</td>
</tr>
<tr>
<td>1899</td>
<td>6,300.00</td>
<td>4,846.41</td>
<td>29.99</td>
</tr>
<tr>
<td>1900</td>
<td>9,450.00</td>
<td>5,462.89</td>
<td>72.99</td>
</tr>
<tr>
<td>1901</td>
<td>7,875.00</td>
<td>2,880.50</td>
<td>173.39</td>
</tr>
<tr>
<td>1902</td>
<td>5,512.50</td>
<td>3,747.47</td>
<td>47.10</td>
</tr>
<tr>
<td>1903</td>
<td>6,300.00</td>
<td>3,100.75</td>
<td>103.18</td>
</tr>
<tr>
<td>1904</td>
<td>5,512.50</td>
<td>3,117.75</td>
<td>76.81</td>
</tr>
<tr>
<td>1905</td>
<td>6,300.00</td>
<td>657.17</td>
<td>858.66</td>
</tr>
<tr>
<td>1906</td>
<td>6,300.00</td>
<td>965.81</td>
<td>552.30</td>
</tr>
<tr>
<td>1907</td>
<td>3,150.00</td>
<td>2,736.80</td>
<td>15.10</td>
</tr>
</tbody>
</table>

* Liquid Assets = (Cash + Bills Receivable)

** Average = 169.93% (σ = 222.09, n=19)

## APPENDIX 6

**Profit Analysis — 1887 to 1915**

<table>
<thead>
<tr>
<th>Year End</th>
<th>Return on Capital</th>
<th>Net Assets</th>
<th>Surplus (Deficit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1887</td>
<td>0.20</td>
<td>$157,810.42</td>
<td>—</td>
</tr>
<tr>
<td>1888</td>
<td>4.36</td>
<td>158,063.39</td>
<td>563.39</td>
</tr>
<tr>
<td>1889</td>
<td>6.03</td>
<td>157,554.24</td>
<td>54.24</td>
</tr>
<tr>
<td>1890</td>
<td>21.22</td>
<td>181,476.05</td>
<td>23,976.05</td>
</tr>
<tr>
<td>1891</td>
<td>(8.69)</td>
<td>167,793.77</td>
<td>10,293.77</td>
</tr>
<tr>
<td>1892</td>
<td>5.00</td>
<td>167,803.06</td>
<td>10,303.06</td>
</tr>
<tr>
<td>1893</td>
<td>3.34</td>
<td>166,846.77</td>
<td>9,346.77</td>
</tr>
<tr>
<td>1894</td>
<td>0.65</td>
<td>163,936.96</td>
<td>6,436.96</td>
</tr>
<tr>
<td>1895</td>
<td>4.06</td>
<td>164,025.11</td>
<td>6,525.11</td>
</tr>
<tr>
<td>1896</td>
<td>5.72</td>
<td>165,939.95</td>
<td>8,439.95</td>
</tr>
<tr>
<td>1897</td>
<td>10.33</td>
<td>172,764.74</td>
<td>15,264.74</td>
</tr>
<tr>
<td>1898</td>
<td>7.58</td>
<td>175,249.33</td>
<td>17,749.33</td>
</tr>
<tr>
<td>1899</td>
<td>5.06</td>
<td>176,911.18</td>
<td>19,411.18</td>
</tr>
<tr>
<td>1900</td>
<td>7.32</td>
<td>178,995.58</td>
<td>21,495.58</td>
</tr>
<tr>
<td>1901</td>
<td>10.02</td>
<td>186,911.16</td>
<td>29,411.16</td>
</tr>
<tr>
<td>1902</td>
<td>1.27</td>
<td>183,397.36</td>
<td>25,897.36</td>
</tr>
<tr>
<td>1903</td>
<td>4.39</td>
<td>184,017.27</td>
<td>26,517.27</td>
</tr>
<tr>
<td>1904</td>
<td>1.14</td>
<td>180,304.29</td>
<td>22,804.29</td>
</tr>
<tr>
<td>1905</td>
<td>4.05</td>
<td>180,389.62</td>
<td>22,889.62</td>
</tr>
<tr>
<td>1906</td>
<td>0.38</td>
<td>174,682.31</td>
<td>17,182.31</td>
</tr>
<tr>
<td>1907</td>
<td>2.27</td>
<td>180,089.29</td>
<td>22,589.29</td>
</tr>
<tr>
<td>1908</td>
<td>(6.47)</td>
<td>169,891.33</td>
<td>12,391.33</td>
</tr>
<tr>
<td>1909</td>
<td>(6.32)</td>
<td>159,931.09</td>
<td>2,431.09</td>
</tr>
<tr>
<td>1910</td>
<td>1.13</td>
<td>161,707.54</td>
<td>4,207.54</td>
</tr>
<tr>
<td>1911</td>
<td>(29.24)</td>
<td>115,649.74</td>
<td>(41,850.26)</td>
</tr>
<tr>
<td>1912</td>
<td>1.57</td>
<td>118,128.72</td>
<td>(39,371.28)</td>
</tr>
<tr>
<td>1913</td>
<td>(8.73)</td>
<td>104,383.91</td>
<td>(53,116.09)</td>
</tr>
<tr>
<td>1914</td>
<td>(50.21)</td>
<td>25,304.47</td>
<td>(132,195.53)</td>
</tr>
<tr>
<td>1915</td>
<td>(8.47)</td>
<td>11,916.16</td>
<td>(145,533.84)</td>
</tr>
</tbody>
</table>

INSIDER TRADING AND ACCOUNTING REFORM: THE COMSTOCK CASE

Abstract: This paper examines the hypothesis that major episodes of insider trading and business fraud promote accounting reforms. During the 1860s and 1870s, the markets for Comstock mining shares reeled from one scandal after another. Eventually these scandals emerged as a leading political issue in California. The frauds contributed significantly to the passage of accounting and financial reporting reforms in 1880. The Comstock episode has implications for modern day instances of insider trading.

Major corporate business frauds have often stimulated the development of modern financial accounting practices. Many fraudulent schemes have been associated with insider trading activities. The most important were the frauds of the 1920s that led to the reforms of the 1930s. Yet this was neither the first financial scandal, nor will it be the last. Daniel Drew, Jay Gould and Ivar Kreuger became legends as a result of their ingenious and ruthless intrigues, However, for sheer audacity it is hard to surpass events in San Francisco’s stock exchanges during the 1860s and 1870s. This paper describes how California’s stock exchanges reeled from one insider trading scandal to another, and how the California legislature enacted financial accounting and disclosure reforms to protect the public.

The study of these early market abuses and the legislative response is especially relevant today because of the many insider trading and S&L scandals of the past few years. Naturally accountants worry about the impact of business frauds on the economy and on the accounting profession. Yet, in the long run that impact has not always been negative for the accounting

The authors wish to thank Dale L. Flesher and two anonymous referees for their valuable assistance.
profession. Flesher and Flesher [1986] showed the important contributions made by Ivar Kreuger to the development of modern financial reporting. Under similar circumstances, the FASB is currently crafting accounting reforms for the banking and savings industries. The study of San Francisco’s nineteenth-century stock exchanges supports the hypothesis that accounting reforms are a likely consequence of major business and securities frauds. An analysis of newspapers, corporate records, California statutes and an 1883 federal study of the Comstock are used to support the above hypothesis.

This study also provides evidence which can be used to assess the merits of insider trading. There has been a vigorous scholarly debate over insider trading since Manne defended the practice in 1966 [Manne 1966a and 1966b; Brudney, 1979; Carlton and Fischel, 1983; Manove, 1989; Moore, 1990; Shaw, 1990; Benabou and Laroque, 1992]. Manne argued that significant insider trading was a rare occurrence and that most opposition to insider trading was based on emotion rather than logic. In his view, inside trading was generally a victimless crime. He advocated inside trading as an effective means of encouraging and compensating managers for their entrepreneurial activities. Moore [1990] and Benabou and Laroque [1992] suggested that inside trading promotes harmful business practices. Of special interest to accountants is the motivation inside traders have to manipulate the stock market by making false reports about company operations. Manne [1966b, p. 149] doubted that insiders would lie very often about corporate affairs. However, on the Comstock, insiders misled shareholders at almost every opportunity.

COMSTOCK MINING CORPORATIONS

The corporate form of business was first used extensively on the West Coast in the early 1860s to finance the development of the then recently discovered gold and silver bonanzas of the Comstock Lode in Virginia City, Nevada. Corporations quickly became the normal form of business for Comstock mines. When California’s first stock exchange was organized in 1862, it was for the purpose of trading Nevada mining shares [Paul, 1947, p. 298]. From the earliest days, the shares of the Comstock mining corporations were popular, but very risky, investments.

Because of its small size, the Comstock Lode could have been efficiently developed by a handful of companies. Instead, it
was divided among thirty-five to forty separate corporations each with its own board of directors, president, accountant, mine superintendent, engineers, bookkeepers, timekeepers, shafts, hoisting machinery, and grand offices in San Francisco. This was a very inefficient system of management which was financed by the Comstock's extraordinarily rich ore and by frequent stockholder assessments.

STOCK SPECULATION

The nature of the Comstock Lode encouraged stock speculation. The district's gold and silver appeared to be randomly distributed along a narrow fault zone in bonanza deposits (i.e. isolated masses of extremely high grade ore). It was impossible to predict which corporation would discover the next bonanza. Yet for twenty years, one bonanza after another was discovered. Speculators purchased the stocks of apparently worthless mines and willingly paid assessments for years because they hoped to share in the next bonanza. The Comstock was more like a lottery than a business opportunity. This market was dominated by speculators; speculators are the one group that Manne [1966a, pp. 114-115] felt were sure to lose when trading with insiders. He compared it to gambling against someone who had loaded dice.

Lotteries, of course, need strong promotional campaigns. Mark Twain, a young Virginia City reporter in the early 1860s, claimed that he and other reporters were bribed to inflate the prices of mining shares. The following is Twain's colorful recollection [1871, p. 18]:

If the rock was moderately promising, we followed the custom of the country, used strong adjectives and frothed at the mouth as if a very marvel in silver discoveries had transpired. If the mine was a "developed" one, and had no pay ore to show (and of course it hadn't), we praised the tunnel; said it was one of the most infatuating tunnels in the land; drivel and drived about the tunnel till we ran entirely out of ecstasies—but never said a word about the rock.

While this story is amusing, it essentially involves bribing financial reporters to dupe the public into buying shares at inflated prices. This is a type of fraudulent behavior that Manne believed would rarely occur.
A VOLATILE STOCK MARKET

Stock prices of Comstock Companies gyrated wildly as new bonanzas were found and old ones were exhausted. For example, the stock of the Crown Point Mine rose from $3 per share on Nov. 19, 1870 to $1,825 per share on May 5, 1872. Between January and early May 1872, the market value of 150 mining corporations listed in San Francisco increased from $17 million to $81 million [Smith, 1943, pp. 129-133]. That bull market collapsed during May 1872. The next boom [Lord, 1959, p. 409] began late in 1874 and took the market to a value of over $262 million. However, share prices plummeted during the panic of January 1875. Mining stocks quickly recovered, but fell once more when Virginia City was destroyed by the great fire of October 1875. Soon prices rebounded, only to plunge in the summer of 1876. The last significant bull market occurred in 1878. After that the Comstock began a rapid decline from which it could not recover.

DECEPTION TOLERATED

During the 1860s and 1870s, many of the mines were controlled by stock manipulators (management rings) who devoted more effort to rigging the market and defrauding stockholders than to searching for ore. Comstock operating reports were often intentionally incomplete, misleading, inaccurate, or too late to be of value [Lord, 1959, p. 286 and pp. 316-319]. Because of these practices the mines were very poor investments for anyone, except for the members of the management rings.

Perhaps the shareholders tolerated deceptive financial reports because the lack of accurate information contributed to the volatility of the market and thereby increased the opportunities for speculation. Most Comstock shareholders were gamblers, not investors. For fifteen years, the stock market had been driven by the bonanza discoveries. Each new discovery initiated a frenzy of stock trading. Anyone could become wealthy by speculating in Comstocks, but very few speculators succeeded without inside information. It was a lottery which was exciting while it lasted.

Reform did not become an important public concern until after the last great bonanza had been discovered and the market for Comstock shares had begun its final decline. This occurred during the second half of the 1870s. Only a few small bonanzas
and lower grade ore deposits were discovered after that date. For many years, the Comstock had contributed significantly to the wealth of California. When the value of the mines collapsed so did the wealth of many prominent Californians. As a result the public finally became interested in curbing insider trading and business fraud.

**COMSTOCK ETHICS**

The members of Comstock management rings did not hesitate to use inside information to take advantage of stockholders, and occasionally they betrayed each other. The best known example of deception within a management group occurred in 1870, and involved John P. Jones and William Sharon [Smith, 1943, pp. 128-131]. Sharon founded the Union Mill and Mining Company in 1867 and, within two years, he dominated the Comstock. Jones was working for Sharon when late in 1870 he discovered a large body of ore in the Crown Point Mine. Instead of notifying Sharon, Jones and an associate, Alvinza Hayward, quietly purchased a controlling interest in the mine. When Sharon learned what had happened, he considered battling for control of the board of trustees, but his chances did not look good [Lord, 1959, pp. 282-284]. Instead of fighting, Sharon sold his minority interest in the Crown Point to Jones and Hayward, and at the same time purchased all of the shares they held in the adjoining Belcher Mine.

Sharon gambled that the ore body would extend into the property of the Belcher. The gamble paid off. The new bonanza was one of the largest discoveries in Comstock history and roughly 55 percent of the ore body lay within the Belcher [Smith, 1943, p. 141]. Furthermore, Sharon purchased many additional shares of the Belcher Mining Company from the firm's treasury stock account. He paid only one dollar per share which was less than one percent of their fair market value! It was a common practice for mine directors to purchase treasury stock at bargain prices when the market began to rally [Smith, 1943, p. 130].

**INSIDE INFORMATION**

The shut-down was Virginia City's most distinctive form of insider trading. Whenever a new section of the lode was being explored, the miners were imprisoned underground. For many
days, they would not be allowed to leave the mine and no visitors would be permitted to enter the mine. Thus, only the managers and their associates would possess inside information, thus enabling them to complete their stock deals before releasing the miners [Gold Hill News, Feb. 15, 1869].

The shut-down was first employed by the management of the Gould & Curry Mining Company in 1863 [Territorial Enterprise, Jan. 19, 1871]. This became quite a common practice in Virginia City. For example, the newspapers reported the following cases: the Hale & Norcross Mine in January, 1868 [Territorial Enterprise, Jan. 11, 1868]; the Imperial-Empire Mine in February, 1869, [Gold Hill News, Feb. 15, 17-19, 1869], and the Savage Mine in February, 1872 [Gold Hill News, Feb. 6 and 8, 1872]. On, January 19, 1871 the Territorial Enterprise reported that three mines, the Crown Point, the Ophir, and the Yellow Jacket, were shut-down at the same time.

Investors initially assumed that if a mine was shut-down a discovery had been made. As a result, stock prices would rise just because of the shut-down. Management rings observing this behavior, began to shut-down worthless mines to rig stock deals. In 1872, Alvinza Hayward and J. P. Jones shut-down the Savage Mine and began leaking false reports of a great new discovery. In San Francisco, the stock price soared from $62 to $725 a share, while underground the miners relaxed because there had been no discovery of any kind. Hayward and Jones reportedly unloaded their shares in the Savage on their friends [Smith, 1943, p. 88].

In order to benefit from inside information about the mines, the management rings had to conceal their stock trades. Complex systems of agents were developed to hide the identity of traders. The real names of the owners of mining shares were frequently not recorded in the stock ledgers. Leading investors developed spy systems to obtain information. However, the average investor did not have these sources. Under these conditions, the proper decision for the uninformed outsider was not to buy Comstock shares, but many continued to gamble in the market. Perhaps the government inaction was due, in part to the public's perception that outside investors were too foolish when they persisted in speculating despite knowing that the deck is stacked against them, and thus fools were unworthy of sympathy or governmental protection.
PRIVATE MILLS

Mines controlled by Sharon had all of their ore refined by the Union Mill and Mining Company, which was privately owned by Sharon and his close associates. The contracts which Sharon negotiated for himself provided very generous profits for the Union mills [Smith, 1943, p. 253]. Some mines controlled by Sharon even paid to have low-grade ore processed at a loss in order to maintain the profits of his mills. Perhaps because of the nature of these contracts, Sharon concealed his interest in both the mines and the mills.

Every management ring which could afford to construct ore mills followed Sharon's example. Many bonanzas failed to produce any dividends for investors because of this practice. For example, the stockholders of the Justice Mine had the misfortune of discovering a bonanza in 1875. However, milling charges increased more rapidly than revenues and as the value of the mine's production went up so did the assessments [San Francisco Chronicle, Apr. 8, 1879].

A FALSE ANNUAL REPORT

The leading management group of the 1870s was the Bonanza Firm, controlled by Mackay, Fair, Flood and O'Brien. Late in 1873 they discovered a bonanza within the Consolidated Virginia Mine which eventually yielded over $100 million in gold and silver. Throughout 1874, no one knew the extent of the big bonanza and most experts overestimated its size. However by the end of 1875, the bottom of the bonanza had been reached and the managers had sufficient data to estimate accurately the size of the ore deposit. Yet, in the 1875 annual report to the shareholders, the mine superintendent falsely claimed that the ore body below the 1,550 foot level was twice as large as it was known to be [Smith, 1943, pp. 194-195]. This could not have been an honest mistake, bad estimate or a clerical error. Perhaps this misstatement gave the superintendent and his associates time to unload their shares on unsuspecting investors.

THEFT

Occasionally a management ring would simply loot a mining corporation. This happened to the Justice Mining Company under the control of the firm of Schultz & Von Bargen during 1877. Their management style was akin to that of Blackbeard
boarding a merchant ship. The stockholders brought legal action against Schultz & Von Bargen charging, among other things, that they had pilfered $500,000 of the mine's operating receipts and that an additional $250,000 had been stolen by the sale of an ore deposit. Unfortunately for the stockholders, Schultz maintained such poor accounting records that it was impossible to verify the $500,000 claim. Regarding the other allegation, George Schultz admitted that he had accepted a $250,000 personal fee to negotiate the sale for $1 of a Justice Mine ore deposit to the neighboring Alta Mining Company. The managers of the Alta testified that they believed that they were paying the $250,000 to the Justice Mining Company for the mineral rights. However, the judge ruled that it was clearly a bribe and, as such, it belonged to Schultz as personal income [Daily Alta California, Mar. 16, 1880].

SALTING

One venerable means of manipulating stock prices is to salt a worthless mine. All one needs to do is to buy several tons of rich ore from a producing mine and to scatter the ore within the property being promoted. Mark Twain tells how the North Ophir was salted with melted silver coins. As a result of this salting, it was the only Nevada mine ever to yield pure silver nuggets. The experts were quite puzzled by this odd kind of ore until someone discovered the letters “TED STATES OF” [Twain, 1871, pp. 21-23] stamped on one nugget. In January of 1880, the Lady Bryan Mine was salted and the superintendent John Kelly reported a discovery of $90 per ton ore [Engineering and Mining Journal, Feb. 7, 1880, p. 105]. The stock rose from less than $1 per share to $4 per share before the hoax was revealed. One wonders how many California legislators supported reform in 1880 because they had purchased Lady Bryan stock at inflated prices or had invested in the Justice Mining Company.

REFORMS — SAN FRANCISCO BOARD OF BROKERS

The San Francisco Board of Brokers proposed market reforms in 1870. Prior to this proposal, the mining stock market had been depressed. The output of the Comstock declined from $13.7 million in 1867 to $7.5 million in 1869. There had been no significant discoveries for several years and the exhaustion of all
the known deposits was clearly in sight by 1870 [Lord, 1959, pp. 263-264]. While the brokers could not stimulate the market by discovering a bonanza, they hoped to generate more business by reforming the market. On January 26, 1870, the San Francisco Board of Brokers established a three-man committee to develop solutions to the insider trading problem. This committee recommended that the state legislature require quarterly reports of work done at each mine, reports of cash receipts and disbursements, and a detailed report of wages paid. The committee also proposed that mine managers should be required to award milling contracts to the lowest bidder. However, the brokers did not energetically lobby for these reforms and they did not even adopt them as regulations for the exchange. As a consequence, no action came from these recommendations. Eventually, the discovery of the Crown Point bonanza late in 1870 brought investors back into the market without the need for reform.

REFORMS —
THE ACT OF 1874

The California legislature in 1874 enacted Senate Bill 393 (The O'Connor Bill), "an Act for the better protection of the stockholders in corporations, formed under the laws of the state of California, for the purpose of carrying on and conducting the business of mining." The first section of this act [Thompson, 1918] required mining corporations to keep the books in accordance with the company's by-laws, but it did not specify what should be stated in the by-laws. Were there mines that did not keep any accounting records? The law also required the mines to prepare semiannual statements of all business and financial transactions, which was interpreted by the Comstock's leading mines as a statement of cash receipts and disbursements. Investors holding stock of at least $500 par value could demand the preparation of monthly balance sheets (probably cash flow statements which were often called balance sheets on the Comstock). The second section of this act obliged mine officers to permit major shareholders (those owning at least $500 par value) to enter and inspect the mine during all business hours. This section was designed to eliminate the shut-in [San Francisco Bulletin, Feb. 9, 1874] and it may have represented a delayed response to the successful 1872 Savage Mine hoax perpetrated by Jones and Hayward.

Other reforms were considered and rejected by the legisla-
ture. The Duffy Bill would have prohibited margin sales of mining shares [Daily Alta California, Feb. 14, 1874] and also would have prohibited sham sales of stock. The Gibbons Bill called for the prohibition of short sales of stock [Daily Alta California, Feb. 15, 1874]. These latter bills did not pass. The newspapers generally supported the 1874 reforms, but the support was restrained. Mine reform did not seem to be a big issue that year.

REFORMS — THE FELTON BILLS OF 1880

From 1876 through 1880, many San Francisco and Sacramento newspapers were obsessed with the Comstock share market. Hundreds of editorials were written on the subjects of insider trading and stock fraud. The pressure on the legislature must have been intense. The reforms of 1880 were almost certainly prompted by the crusade of the press.

In 1880, several bills, including some which were quite radical, were introduced in the California legislature. One bill would have prohibited assessments on shares and another would have prohibited all margin sales of stock. The legislature ultimately rejected those proposals and instead adopted several reform bills authored by assemblyman Charles Felton.

Assembly Bill 230 directed the mines to record the names of the "real owners" in the stock books. This prohibited parking transactions and should have made insider trades much more difficult to conceal. Another section of this act made it illegal to "sell, lease, mortgage, or otherwise dispose of" any portion of the firm's mining grounds without the approval of at least two-thirds of the voting stock. This section seems to be aimed directly at preventing a repetition of what happened at the Justice Mine.

Felton's Assembly Bill 249 amended the Mining Act of 1874. The Felton Act required mining corporations to keep a "complete" set of books and it now stated how these books should be maintained. The books were required to show the sources of all cash receipts and the object of all cash expenditures. Any shareholder was authorized to examine the books during normal business hours and he had the right to be accompanied by an expert (probably an accountant). Company officers were compelled to prepare monthly cash flow statements (called balance sheets) which would disclose the source of all cash receipts and to whom and for what purpose all disbursements were made.
The officers were also obliged to report the current balance of cash, bullion and all liabilities. There was no independent audit requirement, but the financial statement must be sworn to under oath by the president and the secretary (accountant). Investors wishing to examine this statement needed to visit the corporate offices. The mine superintendent was directed to file weekly statements of labor employed at the mine, of work done at the mine, of ore extracted, of ore milled, and of all ore discoveries. All stockholders had the right to examine these reports. Finally, every stockholder had the right to inspect the mine and to be accompanied by a mining expert [Thompson, pp. 156-158].

The accountants of the leading mines met at the offices of the Consolidated Virginia Mining company to discuss the Felton Acts and announced that they would obey all of the provisions, except for the disclosure of the real owners of the mines which they chose to ignore since there was no penalty for doing so [Territorial Enterprise, May 5, 1880]. The San Francisco Chronicle [May 5, 1880] reported that compliance with the Felton Acts was quite good and that firms which failed to comply did so through ignorance rather than through intent.

FINANCIAL REPORTING ON THE COMSTOCK LODE

The financial reports of four leading Comstock mines have been examined. These mines are the Hale & Norcross Silver Mining Company, the Savage Mining Company, the Consolidated Virginia Mining Company, and the California Mining Company. Generally, nineteenth century mining records are rare. Fortunately there are two libraries with excellent collections of Comstock business records, the Huntington Library and the University of Nevada-Reno Library. The examination revealed that the primary financial report on the Comstock was a statement of cash flows. Balance sheets were included in the early financial reports, but their importance declined during the 1870s. Comstock accountants lacked a clear understanding of what a balance sheet should be and they sometimes called the cash flow statements "balance sheets." There were no income statements and little evidence of accrual accounting practices such as depreciation or depletion.

The March 20, 1867 annual report of the Hale & Norcross Silver Mining Company [Hale & Norcross, 1867] consisted of a cash flow report and a statement of assets and liabilities. The
cash flow statement summarized disbursements by objectives such as mining, assaying and freight. The statement of assets and liabilities was a balance sheet which used the expression “Excess of Assets over Liabilities” in place of an owners’ equity section. The work in process inventory of partially processed ore was recorded as an asset at its net realizable value. In 1870, the mine’s Statement of Receipts and Disbursements [Hale & Norcross, 1870] was much more detailed than it had been three years earlier, but there were no other significant changes.

The Savage Mining Company of Virginia City presented three primary financial statements [Savage, 1868] for the year ended July 11, 1868. These included a cash flow report, a statement of current assets and liabilities, and a statement of property, plant and equipment. The statement of current assets and liabilities disclosed the mine's working capital position. It would have provided information useful in assessing the need for stockholder assessments or the likelihood of dividends. It was balanced with the account Excess of Cash Assets over Liabilities. This firm’s annual report also contained several auxiliary schedules detailing production of precious metals, operating costs, and the distribution of supply costs.

During the 1870s, the Consolidated Virginia Mining Company [Consolidated Virginia, 1876] and the California Mining Company [California, 1876-1878], were the Comstock's leading mines. These mines issued statements of cash disbursements and receipts, which were called balance sheets. The structure of their cash flow reports is very similar to the requirements of the subsequently enacted Felton Bills. It would certainly have been logical for Felton to have used the accounting and reporting practices of the leading companies as a model for his legislation. The annual reports also contained a statement listing company assets which included supply inventories and property, plant and equipment. Property, plant and equipment appear to be recorded at unamortized historical cost. These mines did not record the partially processed ore as an inventory as had the Savage Mine and the Hale and Norcross Mine.

The Felton Acts made the cash-based financial reports of the Comstock the standard for all California mining corporations. This very simple uniform system of reporting appears to have been followed by California mining corporations until the enactment of the federal income tax in 1913. During that pe-
Historians Journal, Vol. 20 [1993], Iss. 2, Art. 15
Vent and Birk: Insider Trading and Accounting Reform

period, California was one of the few important mining centers to possess standardized accounts and reports.

COST BOOK ORIGINS

The Comstock accounting system may have been adapted from the traditional cost book practices of Cornwall, England [Lawn, 1901 and Williams, 1891]. The Cornish cost book system was created in the reign of Edward I. This system combined features of partnerships and corporations. The fundamental financial statement of these firms was the statement of accounts, a cash flow report. Comstock reports are very similar to the Cornish cost book practices. The prime difference appears to be that the Comstock mines classified cash outflows by activity as well as by payee. The statement of accounts of a leading Cornish cost book mine [Lawn, 1901, pp. 134-146] classified disbursements only by payee. At the same time as the development of Comstock accounting, Cornish cost book practices were transplanted to Australia as the no-liability system of mine organization [Godden and Robertson].

INSIDER TRADING

Insider trading was legal during the 1800s. As a consequence, it was widely and openly practiced in the Comstock share markets. However, the insiders generally were not satisfied with the returns to be earned from employing their superior knowledge. They repeatedly defrauded investors by spreading false reports about the conditions at the mines. The untruthful information was spread by rumors, by managers expressing expert opinions, and in published annual reports.

An infamous case of deception by inside traders was the Savage Mine Deal of 1872. Hayward and Jones maintained a shut-in at the mine while untrue rumors of a great discovery circulated. The insiders knew that nothing had been discovered and they must have been aware of the rumors. Why did they continue to shut-in the mine? They did so to inflate the value of the shares which the insiders were selling. Anyone who purchased Savage Mine shares was defrauded. However, this was and continues to be a fairly safe form of fraud because of the difficulty in identifying the source of the false rumors.

The California legislature did not consider the prohibition of insider trading. Instead, the Felton laws were crafted to in-
hibit or prevent the specific frauds employed by the insiders. The legislature required weekly operating reports from the mine superintendents, and the stockholders were given the right to inspect the mines. The mandated cash flow reports permitted an assessment of the ability and honesty of the managers. Thus the outside investors were given the tools to become informed before buying or selling stock. If the outsiders still chose to remain uninformed, then only they were to blame.

There are many types of inside traders, including corporate directors, managers, lawyers, business reporters, investment bankers and assorted friends and relatives. On the Comstock, a ruthless parade of directors and managers enhanced their insider trading profits by withholding information and spreading false reports. This type of market fraud is less common today because S.E.C. rule 10b-5 requires insider traders to disclose material information or refrain from trading.

**SUMMARY**

The reform of California's stock markets in 1880 and the concurrent mandating of published financial statements was a political response to the brazen frauds associated with the Comstock Lode. During the 1860s and 1870s California's stock exchanges were rocked by one insider trading scandal after another. Those abuses met with public disfavor, but they were tolerated as long as gold and silver continued to pour from the mines. Eventually the last great bonanza was discovered and the production of bullion declined rapidly. When that decline was followed closely by hard times, the reform of the Comstock share markets became one of California's leading political issues. In 1880, the California legislature enacted significant financial accounting and disclosure reforms as a primary means of protecting the public. As a result of insider trading and frauds, the Comstock Lode earned a very unsavory reputation within the mining industry. On the other hand, California obtained a uniform system of mine reporting many decades before it would have, had it not been for these shady schemes.
REFERENCES


California Mining Company, annual reports, 1876-1878, Special Collections Library, University of Nevada Reno, Reno, Nevada.


Consolidated Virginia Mining Company, annual report for the year ending January 12, 1876, Special Collections Library, University of Nevada Reno, Reno, Nevada.

*Daily Alta California*, (Feb. 14, 1874).
*Daily Alta California*, (Feb. 15, 1874).
*Daily Alta California*, (Mar. 16, 1880).


*Gold Hill News*, (Feb. 15, 1869).
*Gold Hill News*, (Feb 6, 1872).
*Gold Hill News*, (Feb 8, 1872).

Hale & Norcross Silver Mining Company, annual report for the year ending March 20, 1867, The Huntington Library, San Marino, California.

Hale & Norcross Silver Mining Company, annual report for the year ending February 28, 1870, The Huntington Library, San Marino, California.


Paul, Rodman W., *California Gold*, University of Nebraska Press (1947).

*San Francisco Bulletin*, (Feb. 9, 1874).

*San Francisco Chronicle*, (Apr. 8, 1879).

*San Francisco Chronicle*, (May 5, 1880).

Savage Mining Company, annual report for the year ending July 11, 1868, The Huntington Library, San Marino, California.


Territorial Enterprise, (Jan. 11, 1868).

Territorial Enterprise, (Jan. 19, 1871).

Territorial Enterprise, (May 5, 1880).


Twain, Mark, *Roughing It* (Harper & Brothers, 1871), vol. 2.

ACCOUNTING FOR DISTRIBUTION COSTS IN THE DENNISON MANUFACTURING COMPANY DURING THE 1920S AND 1930S

Abstract: This paper suggests that Activity-Based Costing is not a new cost accounting technique but rather one that has been revived as a consequence of difficult economic times. The Dennison Manufacturing Company of Framingham, Massachusetts used accounting techniques throughout their organization that were clearly activity-based. This company's approach to costing distribution or marketing costs in particular is explored here. These costs tend to be ignored today; yet this company, along with others, made a concerted effort to understand these costs and to account for them.

One of the most popular accounting systems around today is Activity-Based Costing. It has been and is being adopted by many companies in the United States since its popularization by such authors as Cooper and Kaplan (1988, 1991, 1992) and Cooper (1988, 1989). In the wake of a decade of economic decline, these and other writers have contended that traditional cost accounting failed to provide managers with the kind of information needed to make good business decisions (Johnson and Kaplan 1987). The advocates of Activity-Based Costing claim that tracing activities and their costs will provide more useful information for decision-making than information generated by cost systems that track the costs of products and product lines, costs that are often-times replete with arbitrary allocations of joint overhead costs.

The irony of Activity-Based Costing is that it is not new; rather, it has been forgotten. In forgetting accounting history, researchers are forced to reinvent the wheel. In the 1920s and 1930s, there were cost accounting spokesmen that advocated, and some companies that adopted, cost systems that were clearly activity-based. The experiences and techniques of a single company, still in existence today, are the subjects of this
paper. The focus here is on distribution, or marketing costs, a subject rarely broached in the cost literature or textbooks of today but one still of critical importance to companies engaging in marketing efforts that cause tremendous expense.

During the 1920s, social and economic events were moving cost accounting into the area of distribution costing. The huge sums spent on advertising, promotion, selling and other distribution expenses were the subject of repeated concern by those who worried about the manipulation of demand and the rising prices of goods. Many were angered by advertising campaigns and direct selling techniques, viewing them as not only wasting money but also contrary to a system that was supposed to be driven by demand, not by supply. Surveys that reported dramatic increases in distribution costs relative to production costs disturbed the public, the government and businesses. However, business, increasingly driven by mass production techniques, had already moved into a creation of demand mode.

"It is an allegation too near the truth to be passed over lightly that more than a little of the savings due to scientific management or to mass production have been lost through the necessities which high productivity has put upon us to sell aggressively and through the attempts we have so far made to meet these necessities, with antiquated equipment and with an antiquated point of view, as ill adapted to the new needs of marketing as were the methods and point of view of handy crafts to the needs of the modern factories" (Dennison 1928, 249).

A report on waste in industry was released in 1921 by the Committee on Waste of the Federated American Engineering Societies (appointed by Herbert Hoover). This report ignited interest in the control of waste through standardization, simplification and education (of the firm). While the report laid most of the blame for waste at the feet of management, the approach to waste control proposed by the Committee involved an analysis by each firm to determine where costs had gone out of control. Among the sources of waste cited by the Committee was an insufficient analysis of the needs of the customer resulting in an unchecked explosion of variety which, in turn, placed costly demands on the plant's ability to retool and adapt to each product's minor modifications.

In 1924, the federal government, under the impetus of Sec-
Secretary of Commerce Hoover, recognized a need to look more closely at distribution costs in particular and established the Domestic Commerce Division of the Department of Commerce to study the issue. This study found a clear link between waste, product differentiation and increasing costs of distribution. A company that had developed a multiplicity of products varying only by color or other superficial style changes had created a world of expense that would not exist with the single functional product. Ignoring the obvious increase in production costs, it would also incur far more costs in the following areas: storage and handling costs for the larger inventory; clerical costs for ordering materials and for taking and filling sales orders; inspection costs; cost accounting costs because of the increased complications; sales efforts; and print advertising and order book costs.

Castenholz (1930), writing about distribution costs, said that, contrary to the natural order of things, production had become the stimulant for consumption rather than vice versa. For Castenholz, that natural order was the notion that demand precedes and stimulates supply. If firms reversed the ordering and produced in advance of demand, they would be forced to spend enormous sums on selling. Since distribution costs had risen, according to contemporary surveys, to the extent of doubling the cost of a product, they had become the most likely area of cost savings. Castenholz advised cost accountants to examine distribution costs closely.

Castenholz recommended that businesses engage in research to uncover what the consumer really wanted in order to avoid ruinous distribution costs. He proposed sales tests before making large capital investments and suggested questionnaires, house-to-house canvassing, limited area advertising and studying publicly available information. He thought it a mistake to allow selling to be treated haphazardly, believing that it should be just as rigorously planned and controlled as factory costs. He worried that businesses tended to exempt from study costs that had been traditionally accounted for as period expenses, a treatment that generated, at worst, misleading information.

The firm that wanted to tackle its distribution problems could find guidance from the cost literature, from the Department of Commerce and from trade associations. Available books included Castenholz's *The Control of Distribution Costs and Sales* (1930), Heckert's *The Analysis and Control of Distribu-
tion Costs (1940) and Longman's Distribution Cost Analysis (1941). Trade associations, including the National Wholesale Druggists' Association, the National Wholesale Hardware Association and the Institute of Meat Packers, published suggested methods of allocating distribution costs. The National Association of Cost Accountants — Bulletin published many articles on the subject some of which were general in nature while others described in detail the approach taken by specific firms.

The Dennison Manufacturing Company of Framingham, Massachusetts, with 6,000 different products, gross revenues of $16,000,000 and employees numbering 4,000 (Freeman 1929) was praised by Longman (1941) for having the best procedures for handling distribution costs by product. Statistical records of costs, collected over many years, were analyzed, functional areas were isolated and causes of cost variation were uncovered. This research into company costs permitted Dennison to establish standard costs for a considerable portion of their distribution costs and to apply other methods of analysis to costs not adaptable to a standard costing system.

E. S. Freeman (1933), Dennison's chief statistician and source of most of the information on the company's distribution policies, created a useful metaphor to describe his approach to researching and handling Dennison's distribution costs. The primary function of a manufacturing entity is a cyclical one. Money is used to purchase the resources needed to manufacture products. These products are then traded to the public for money offers (contracts). The money offers are then turned back into money so that the company can start the cycle again. In this regard, he suggested that a manufacturing business could usefully be thought of as composed of two factories, a goods factory and a money factory.

The goods factory manufactured the products available for sale. Traditional raw materials were transformed by labor and overhead into finished products. The money factory produced money offers. The raw materials of the money factory were the finished products of the goods factory. These raw materials were transformed by labor, primarily personified by the salesman, along with his overhead (travel expense, printing costs for sample brochures etc.) into money offers from customers. All of the costs incurred in the money factory he called order-getting costs and were viewed somewhat as speculative investments. Neither factory completes the job. The money offers
have to be accepted, the goods delivered and the money collected. These functions were carried out by the warehouse, shipping and office departments and the costs associated with them were called order-filling costs and were viewed as rather routine in nature. The functions within the order-filling category were not categorized as factory overhead as was common because they varied with the accepted money offers, not with production. Together, the order-getting and order-filling functions comprised the distribution costs of the business.

According to Freeman, the company's distribution costs were segregated into two major cost categories and were handled very differently from a cost viewpoint. Order-getting included advertising, selling expenses, writing letters — all the costs incurred for the purpose of getting customers to place orders for goods. Order-filling included the costs that arose after the customer placed an order and ended when the customer paid for goods received. Many of the order-filling costs were incurred after production had taken place, but some were incurred before production when customers placed special orders rather than stock orders. Since most of the jobs or duties associated with order-filling costs were repetitive in nature, they could be studied and accounted for in much the same way as manufacturing costs.

Freeman identified twenty-six functional areas under the order-filling classification, dividing them into office functions and warehousing and shipping functions. Office functions included: credit, bad and overdue accounts, correspondence, order records, pricing and invoicing, accounts payable, accounts receivable, cash receiving, general accounting, factory accounting, sales accounting, sales statistics, order and letter files, postage and office management. Warehousing and shipping functions included: balance of stock records, receiving stock, space for stock, getting out stock orders, assembly and checking, packing, packing material, stencil or label, loading cars or trucks, storing hold orders and warehouse management.

Freeman (1929) reported that detailed studies were first made of methods and policies in order to establish standards. Henry Dennison, the owner and president of the firm, was an advocate of scientific management and had been president of the Taylor Society. Giving Freeman his full support and confidence, engineering estimates and time studies that had been applied to manufacturing processes were applied to the office
and warehouse functions as well. These studies were used to improve on methods currently in place and to find out how long it should take to, for example, price and type out each line of an invoice, to pack a bulky and heavy versus a small and light order or to update inventory records (Farrell 1936). Once done, standard costs for the performance of the various jobs within functions were established and revised approximately once a year. Departments were then given a flexible budget with a definite amount for fixed charges and a standard cost for each job performed. A master budget was not used because the employees within these functional areas had no control over the amount of work they did (when the work load was under capacity); their duties arose from the sales orders generated by the sales force.

The demand of the order or product on a particular function was critical to the proportional distribution of the costs of that function to the product. Statistics were kept for years on the costs of each of the functions. The demands on each function created by merchandise lines were separately calculated. Then sources of cost variability were determined. Freeman determined that six factors were most closely correlated with the functional costs. They were: per order, per item, per customer-month, per letter, per 1,000 cubic inches, and per dollar of sales. That is to say, as orders or as size of order increased, certain functional costs tended to increase. For example, about 22% of the total office and warehouse costs varied with the number of orders and 20% with the physical volume of shipments (Freeman 1933).

The cost per order (an order was the sum of all products ordered at a given time by one customer) included credit analysis, keeping order records, pricing and invoicing the totals, entering the order on accounts receivable records, updating sales statistics, keeping order and letter files, postage, assembling and checking the order as a whole, stenciling and labeling, loading and a prorata charge for office and warehouse management based on labor. The cost per item (each different product ordered was called an item — that is, a line item on an order) included a charge for pricing and invoicing the individual items, updating sales statistics, updating inventory records, removing inventory from stock, assembling and checking each item ordered and a prorata charge for office and warehouse management based on labor.
The cost per customer month was generated by the number of monthly receivable statements mailed. It included charges for getting out the statement and recording payments and a prorata charge for office management. The cost per letter involved corresponding with customers. This was charged with costs for typing letters, for postage, for keeping order and letter files and a prorata charge for office management. The cost per thousand cubic inches included charges for receiving stock, for taking up inventory space, for assembling and checking, for packing, for loading, for storing hold orders, and a prorata charge for warehouse management.

The cost per dollar of sales was used for bad and overdue accounts only. It included the loss from bad accounts and the costs of pursuing overdue accounts. It was also given a prorata charge for office management. This cost was not combined with the others as part of the order-filling cost charge because it was not related to products but rather to customers. It was deemed a reduction of total anticipated sales revenue. Accordingly, it was deducted separately from sales prices.

All of these costs were analyzed and calculated by classes of merchandise. The cost per item, per order, per customer month and per letter were then combined into one subtotal and the thousand cubic inches cost was another. Summed together, they were called secondary cost of products. The primary cost, not discussed here, was the factory cost (direct labor, materials and overhead).

With this comprehensive standard cost system Dennison could calculate standard costs and quote prices to customers on the spot because the attributes of each item ordered could be tracked and costed under the system. For example, large, bulky orders were charged (in part) by thousand cubic inches for the functions of receiving stock, space for stock, assembly and checking, packing, packing material, loading cars or trucks and warehouse management. Small orders (in size) would receive proportionately smaller charges for those functions. Large orders, in terms of number of different items ordered, would receive larger charges for order records, pricing and invoicing, and order and letter files than orders including only one item. Most of these charges were made on the basis of per line item typed. Rates for special order versus stock orders were the same for some functions and different for others.

These distribution costs were the only ones charged to
products. Costs of function elements not clearly product-related were allocated elsewhere. These included accounts payable, general accounting, factory accounting, sales accounting, some costs of keeping sales statistics, some postage charges and some costs of office management. These were deemed to be hopelessly common or joint in nature whose allocation to products would be completely arbitrary and useless. Product cost ultimately was the sum of a standard cost per thousand cubic inches plus a standard cost per item and order (the secondary costs) plus the standard factory cost (the primary costs computed elsewhere). These standard costs were also used for inventory costing for financial accounting purposes although Freeman (1933, 13) said that "this kind of a cost has not yet acquired the authority and sanction of convention and fashion."

Order-getting costs were not charged (with the exception of special, made-to-order items) to products. The costs of the money factory were usually common to all products, hence other cost objectives were set. Long-term statistics were kept by customers or class of customers, by one method of selling versus another, by territory, by salesmen and by merchandise items and lines. Order-getting costs incurred to get the customer to place an order were the most difficult to pin down. Freeman used marginal analysis to determine the most profitable of these cost objectives.

One area in which marginal analysis was applied was in determining selling costs by town for the purpose of planning sales routes and changing channels of distribution. The statistical records kept allowed for a computation of the cost of the salesman's time per town which was then broken down into the number of calls made, number of sales made, dollar of sales and the class of goods. This analysis offered a differential analysis of what it would profit the firm if the town were visited or were dropped or if the town were visited less frequently. Sales managers wanted to know the marginal travel cost per town. Armed with this information, in tandem with other firm objectives, the best route per salesman could be planned. When there were many customers in each town, this analysis was further broken down to customers.

These analyses were not the end-all regarding such determinations as where to send salesmen. Recognition was given to the need to develop prospects in new areas, to the fact that it often takes time to turn an unprofitable customer or area into
profitable outlets and that a profitable area one year may not be so the next. The information gathered was used as input into the decision-making process, not as a substitute for it.

Each salesman filled out a simple card for each customer visited regardless of whether a sale was made. The card included spaces to record the customer visited, the item(s) sold, the time spent with the customer, customer requests for mailings, customer type, complaints by the customer, items purchased from which competitors and the reasons why, and the salesman's evaluation of how future contacts with the customer should be handled.

After the cards were returned to the company and orders filled, all the information was placed on a tabulating machine card. From the punched cards created for lost sales, the company could assemble reports on competitive trends and see whether lost sales were due to price, delivery or other reasons. From successful sales cards, they could compile a variety of reports by classes of orders, on sales per salesman, sales by type of customer and sales by product.

Mail order costs, advertising and retail sales costs were studied also. Much of this was done by means of questionnaires and analysis of statistical data long retained by the company. The approach to analysis of advertising was far ahead of its time. Advertising primarily in magazines, Dennison included in each advertisement an invitation to the reader to write to the company for further information. This was usually a request for a brochure or a party magazine (the company made crepe paper which was commonly used in party decorations). The address given included a code that identified the magazine and the issue. Many people did write. A few months after the requests were received, Dennison would mail questionnaires on a random basis to the writers asking them what they bought, the dollar amount of their purchases and from whom they bought the merchandise. Freeman thought that these questionnaires gave them reasonable assurance about the efficacy of their advertising efforts.

The intriguing aspect of the Dennison Corporation's approach to distribution costing was its analysis of the various distribution activities. As recommended by today's Activity-Based Costing consultants, the Company analyzed and costed functions or activities. The Company's management understood that different sized goods and orders put different demands on
various activities and should therefore bear different costs. Dennison understood that most salesmen's costs were joint relative to products and that maximizing the use of their time had to be determined through the analysis of different cost objectives such as customer type and town. Freeman appreciated that the decisions made by management were only as good as the information provided to them. While he claimed to be only scratching the surface of the field of distribution costing, he was confident that only by combining research (based on statistics gathered over time) and analysis would any reliable basis for decision-making be developed.

It is impossible to determine from the literature what proportion of firms practiced distribution cost analysis during the 1920s and 1930s. An editorial note appended to Freeman's 1929 article in the *NACA — Bulletin* reported that the membership had been surveyed with the finding that few companies had done anything at all in the field. Similar surveys applicable to later periods have not been discovered. Nevertheless, other firms and industries did make great strides in this area.

Discussions of distribution costs virtually disappear from all accounting publications during the early 1940s for an obvious reason: the war effort concentrated most manufacturing facilities on war production severely curtailing civilian production. In general, many firms found the area unwieldy and feared that the effort to develop their systems to encompass distribution costs would prove unrewarding. It required extensive, time-consuming and expensive research for each individual firm. Guidance was available for many specific industries as well as introductions into the general concepts. Nevertheless, these guides did not substitute for research.

Another difficulty was that contemporary accounting rules (not yet called Generally Accepted Accounting Principles) preferred and argued for the current expensing of distribution costs — a preference at odds with the notion of assigning distribution costs to products. Although assigning costs to products or functions for managerial purposes is not inconsistent with expensing them in the financial statements, when records are kept for financial purposes it can become difficult to disaggregate or reorganize the information in them to serve managerial purposes.

Although not an insurmountable problem for a firm determined to invest in a system of statistical record keeping, it is
easy to imagine the dismay of management facing such a prodi­
gious task for the first time. Whatever the extent of distribution
analysis within firms during this period, it is true that textbooks
now omit such discussions. Clearly, at some point after the
1940s, interest in the area waned and the discourse disappeared
from the literature. In the post-war decade, the general prosper­
ity of the United States resulting from apparently limitless de­
mand from here and abroad made any major investment in dis­
tribution cost analysis seem like an unnecessary expense.

As the Activity-Based Costing advocates advise today,
Dennison Manufacturing did not assign costs based on produc­
tion volume unless that was the reason why they were incurred.
No distribution costs were allocated based on production vol­
ume and many costs that are now taught merely as factory over­
head (storage and other inventory handling costs) were also
handled in a very different manner at Dennison. Costs were
pooled according to factors of variability that had been discov­
ered through statistical research. The allocation to products was
based on a measure of normal capacity developed from aver­
ages over long periods of time which, in turn, depended upon
the source of variation (average pounds of product handled in a
year, average orders taken etc.). Using normal capacity rather
than budgeted capacity as the denominator volume meant that
idle time or other areas of waste were isolated. As Dennison,
along with many other companies, suffered through the Great
Depression, their cost system enabled them to see how severely
idle capacity of all kinds was affecting the company, to under­
stand where costs could be cut, and how far prices could be
lowered. Perhaps it was this that allowed them to survive.

REFERENCES
Castnholz, W. B. *The Control of Distribution Costs and Sales*, New York: Harper
and Brothers (1930).
Cooper, R. and R. Kaplan, "Cost Classification in Unit-Based and Activity-Based
Cooper, R. and R. Kaplan, "Activity-Based Systems: Measuring the Costs of
Dennison, H., "Sales Cost Accounting", *National Association of Cost Accountants
— Bulletin* (November 1, 1928): 241-249.


Abstract: The objective of this study is to trace the influence of DR Scott's writings on the development of accounting theory and standard setting. Scott's deductive approach to the development of a conceptual framework for financial accounting and reporting was adopted by accountants on a piecemeal basis from the 1930s to the 1970s. This study traces authoritative pronouncements from the 1930s to provide evidence on Scott's forward looking ability and the influence of his ideas on the subsequent development of accounting theory. The social, economic, and political environment of the 1930s is described to show why a change in accounting standard setting was needed. The authors show that Scott envisioned the function of accounting as extending beyond mere recordkeeping, to include control of organizations relative to their cultural environment. Further, Scott's broad educational background is presented to show the breadth of Scott's ability to see accounting issues beyond bookkeeping issues. The findings show that Scott [1941] was among the first to develop a theoretical, deductive, normative framework to serve as the basis for accounting principles.

"If we are going to be able to look ahead with assurance, we must be able to look back with accuracy" [DR Scott, 1931, p. 140].

The purpose of this study is to examine the role of DR Scott as a catalyst in the development of a conceptual framework for accounting. Although accountants are often criticized as being overly conservative and defensive of the status quo, Scott was very perceptive and willing to adapt to his environment. Scott contributed to the development of accounting theory through his early recognition of several concepts not

1Scott had no given name. His parents named him DR, using the initials from his father's name, David Roland Scott. Scott used the two initials with no spacing or punctuation [Kvam, et al., 1964].
generally understood in his time but widely accepted today. For example, he envisioned the need for a normative theoretical base to provide unity and coherence to accounting principles. He articulated the importance of a deductive approach to the successful development of a theoretical foundation. He also espoused the important role of accounting and financial reporting in the economic control of organizations.

When Scott [1941] published his conceptual framework for accounting, there was wide recognition that a crisis existed in the social control of large industrial organizations. The speculative fever and unbridled optimism of the 1920s were gone as the nation struggled to deal with the aftermath of the stock market crash of 1929 and the financial devastation of the continuing depression. The accounting profession sought to convince financial statement users that a publication of generally accepted accounting principles, enforced via independent audits, could reduce future stock market abuses [Previts and Merino, 1979]. The Securities Act of 1933 and the Securities Exchange Act of 1934 required certification of financial statements of listed companies, which provided a powerful incentive for the profession to specify what constituted "generally accepted accounting principles."

Many practicing accountants and accounting theorists, as well as outside critics, recognized that the profession was in a period of upheaval. User needs were not clearly understood, practice was not standardized, and authoritative pronouncements tended to focus on individual issues in a piecemeal, often inconsistent, fashion. Dissatisfaction with the state of financial accounting resulted in users supporting a proposal that the Federal government control the profession directly through the creation of a national institute of accountancy with power to define theory and prescribe acceptable accounting and auditing practices [Schluter, 1933]. The accounting profession was further weakened by internal conflict, as the American Institute of Accountants and the American Society of Certified Public Account-

---

2Scott [1931] defined the term "accounts" broadly as including more than "the journal and the ledger" [p. 217]. For example, the term accounts included "differentiation of interests at stake in a business enterprise" [Scott, 1931, p. 218]. So too does the FASB [1978, par. 7] define financial reporting to include not only the financial statements but other information provided by the accounting system as well. Hence, the term "financial reporting" is all-inclusive just as Scott used the term "accounts" as all-inclusive.
tants feuded bitterly (see Main [1923]), and practitioners and academics regard each other with distrust and lack of respect. The authors contend that despite widespread public criticism (see [Schluter, 1933]), few accounting practitioners or theorists understood either the causes or implications of the failure to develop a set of generally accepted principles. DR Scott was insightful both in recognizing the root of the problem, and in proposing a solution. In Scott’s view [1931], the “invisible hand” of the competitive marketplace was no longer effective in regulating business activity. Scott foresaw that the role of accountants needed to be expanded to assume the control function previously presumed to be provided by the forces of the open market. Previts and Merino [1979, p. vii] recognize Scott’s character as follows:

Evidence suggests that the outcome foretold by DR Scott in 1931 — that American society would witness the use of accounting as a principal means of political and economic control seems to have come to pass in the contemporary “bottom-line” culture of the 1970s.

Scott recognized the potential of a theoretical framework to ameliorate the problem. By serving as the basis for an integrated, internally consistent set of accounting principles, such a framework could facilitate the social control of organizations. He envisioned a framework as interfacing with its environment and including a statement of the objectives of accounting and financial reporting, with a set of general principles to be used not only in reconciling inconsistencies in current standards, but also in evaluating the appropriateness of proposed future standards. He was an early proponent of the deductive approach to theory development, understanding fully the weakness of an ad hoc or inductive approach to the development of a body of authoritative standards.

The main hypothesis of this study is that the subsequent development of accounting theory has been influenced by, and is indebted to, Scott’s progressive thinking. To demonstrate the significance of Scott’s forward looking ability, this paper is organized as follows. The next section presents introductory information on the state of the accounting profession in the 1930s. Then a brief description of DR Scott’s background and early work is provided. Next, a description of the conceptual framework developed by Scott is presented through the use of an illustration similar to that included in the Financial Accounting
Standards Board's (FASB) *Statement of Financial Accounting Concepts No. 2* (SFAC2 [FASB, 1980]). The following section details the significance of DR Scott's conceptual framework in the evolution of accounting theory. Finally, the study presents a summary and conclusions.

**BACKGROUND**

The advent of machine technology during the Industrial Revolution increased the scope and complexity of the industrial market as "large competitive units engaged in the production of goods tended to give the consumer a feeling of helplessness" [Scott, 1931, p. 67]. Scott saw the early twentieth century as a period of conflict and disorganization, as the growth of large scale competitive production led to distrust of market control, and instability of price and profits. Scott understood that the Industrial Revolution of the late nineteenth and early twentieth centuries was an example of the type of major cultural change which, in the view of the economist Thorstein Veblen, required total reexamination of the cultural infrastructure. As one element of the "institutional superstructure," accounting would be expected to change in response to major cultural shifts [Scott, 1931, p. 26].

Scott’s recognition that the major cultural changes of the early twentieth century would lead to changes in governance structures (including those for accounting) was shared by others. Mitchell [1969, p. 626] describes the establishment of the Industrial Commission in 1898 as a response to widespread public concern about the presumed exploitation of consumers by the large industrial firms and trusts. Berle and Means [1933] called for improvements in financial reporting to facilitate social control of corporations characterized by separation of ownership and management. Recognizing that the effectiveness of market control had declined, most notably in the aftermath of the crash of 1929, Scott called for increasing use of "accounts" as a means of exerting social control of large organizations. He considered market forces to be an effective control mechanism for a developing society, in a "pioneer age," but ineffective in the complex highly industrialized economy of the early twentieth century.

Scott's understanding of the need for effective social control of organizations influenced his early recognition of the problems associated with inconsistent, poorly developed accounting
principles. Governmental units and citizen's groups expected accountants to use their expertise and understanding of corporate activities to protect stockholder/creditor interests through the enforcement of accounting principles. However, there was little confidence in existing accounting principles. The inconsistencies in accounting principles were frequently cited by lawyers, engineers, consumer groups, government officials, and current and potential investors [Chatfield, 1977, p. 129-130].

Both the passing of the Securities Acts and the accounting profession's efforts to develop uniform accounting principles can be interpreted as efforts to develop appropriate control structures for organizations in the complex post-industrial society of the twentieth century. The SEC had responded to investor concerns by requiring that published financial statements carry certification by an independent accountant attesting to the appropriateness of the accounting practices. The SEC stopped short of issuing specific accounting standards, preferring instead to require adequate disclosure and to delegate to the accounting profession the establishment of detailed specifications of what constituted generally accepted accounting principles.

Accountants, mostly academics, responded by undertaking the development of a set of accounting principles, but as Gilman points out, accountants could not even agree on the definition of the term principle. Gilman [1939] sought to resolve the dilemma by first defining "principle" and then compiling all published accounting principles in one book. Accounting practitioners ignored these accounting principles espoused by academics. The profession's piecemeal approach to standard setting resulted in accounting pronouncements that lacked unity and clarity [Paton, 1938]. Although some accountants recognized these problems, few understood the full implications of the profession's credibility crisis [Scott, 1931].

Some feared that if the profession did not improve the quality of the standard setting process, rule-making authority might be re-appropriated by the SEC (see Previts and Merino [1979]). Scott saw beyond superficial issues to the root of accounting problems. He [1941] supported a conceptual framework oriented to its environment, to serve as the basis for an integrated, internally consistent set of accounting principles for the effective control of corporations in a complex industrialized society. His framework included 1) a statement on the relation between accounting and its socio-economic-political environment, and 2)
a statement of the pervasive principle of accounting and financial reporting, with 3) a set of general principles derived deductively from the pervasive principle. The authors believe that Scott's framework, if adopted, could have enhanced the credibility and consistency of accounting standards.

Even today, Scott's framework still offers new elements and insights. First, unlike his contemporaries, Scott advocated a deductive approach rather than a compilation of published accounting principles as Gilman [1939] had developed. Gilman collected existing documented accounting principles inductively and placed these principles in one data source, Accounting Concepts of Profit [Gilman, 1939, Chapter 14]. The second innovative element of Scott's framework was his emphasis on the interface between accounting theory and the social, political, and economic environment, as expressed in his orientation postulate. This aspect of his thinking was well ahead of his time, not being incorporated into authoritative pronouncements until 1970. The Accounting Principles Board in Statement No. 4 (APB4) explicitly recognized the influence of the environment on accounting. For example, the Board [AICPA, 1970, p. 12] states that accounting needs to

3While a deductive approach was advocated and supported in economics, this concept was new to accounting principle setting.

4Gilman [1939] uses the following published accounting principles in developing his practical accounting framework:


change in response to changes in economic and social conditions, to new knowledge and technology, and to demands by users for more serviceable financial information.

Finally, in 1978 and 1980, the FASB adopted a conceptual framework. The publication of the FASB's *Statements of Financial Accounting Concepts* (SFAC) 1 and 2 marked a major advance in the theoretical development of accounting. The FASB's SFAC2 addressed the needs of the environment, and served as the basis for future accounting standards. The authors expect to find that DR Scott provides the antecedent thinking underlying the development of an accounting conceptual framework. To this end, the paper analyzes the conceptual framework which Scott developed and traces the influence of his thinking on the subsequent development of accounting theory.

**SCOTT'S EARLY WORK**

DR Scott had a broad background. His education included a bachelor of arts and science in journalism (1910) and a Ph.D. in economics from Harvard (1930). His professional experience included teaching political economy at the University of Michigan and working as a reporter for the *Detroit Times* newspaper. In 1918 and 1919, he was a statistician at U.S. Army Staff Headquarters in Tours, France [Kvam and Bauer, 1964]. With the exception of his brief Army experience, Scott taught at the University of Missouri from 1914 until his death in 1954. Although originally hired by the economics department, Scott became...
chairman of the newly created department of accounting and statistics in 1930. His broad education (journalism, accounting, economics and statistics) and professional background provided the basis for his interdisciplinary and highly conceptual writings.

At the University of Missouri, Scott was a colleague of Thorstein Veblen, and Veblen's influence on Scott's early work is pervasive. The extent to which Veblen influenced Scott is evident in that Scott dedicated his book *The Cultural Significance of Accounts* to "those whose influence has contributed most to it: F. W. Taussig and to the memories of the late profs. H. J. Davenport and Thorstein Veblen". Both Scott and Veblen were to some extent outsiders in their professions — Veblen as a philosopher in the field of economics, and Scott as an economist in accounting — which enhanced their ability to view their professions objectively. Their status as outsiders may at least partially explain the iconoclastic tone of their writings. Scott [1931] and Veblen [1904] believed their colleagues were inordinately preoccupied with refining the details of existing theories, when what was needed was a reexamination of fundamental assumptions. Scott was disdainful of his contemporaries who concentrated on tinkering with existing theories. This attitude is reflected in the following quote from *Cultural Significance* [Scott, 1931, p. 15]:

Men trained in the technique of making piecemeal revisions of theory are so nearly useless for purposes of a general revision that when they do accomplish anything looking in that direction it is ascribed to a mysterious quality called genius. Of course the use of the term genius here, as always, indicates merely that an explanation of the accomplishment to which it is applied lies beyond our present understanding.

Scott and Veblen were perceptive in understanding that their fields were undergoing what Kuhn would later describe as a scientific revolution, that is, a period when "the profession can no longer evade anomalies that subvert the existing tradition of scientific practice" [Kuhn, 1970, p. 68]. Both Scott and Veblen were engaged in what Kuhn referred to as "extraordinary investigations that lead the profession at last to a new set of commitments, a new basis for the practice of science" [Kuhn, 1970, p. 68]. Scott perceived that for accounting to provide effective control of large industrial organizations, the traditional
view of accounting as limited to mechanistic transaction recording would have to be expanded to include a broader role in protecting the interests of the various equity holders.

Both Veblen's work and Scott's have a distinctly Darwinian [1859] flavor, emphasizing the continuing evolution of economic systems, with the existing system representing simply one stage in an ongoing process of development. Mitchell [1969] contrasts Veblen's work with that of Marx, who understood the evolutionary nature of social change, but interpreted social change as progress toward the ideal of socialism. Veblen, on the other hand, viewed cultural change as an ongoing process of evolution, as changes in the daily activities of people were reflected in unconscious, but lasting changes in the prevailing habits of thought.

Like Veblen, Scott [1931] viewed the evolution of accounting theory not as a progression toward a static ideal, but rather as a continuing process of adaptation essential to maintain relevance in a continually evolving economic environment. This concept is presented in *Cultural Significance* where Scott describes two spheres of phenomena — concrete events and abstract generalizations, or ideals. As a new set of ideals gains dominance, its proponents become defendants of the *status quo*. Because events continue to change, however, the ideals need to be adjusted to be in harmony with the existing culture, and therefore maintain validity. Scott writes in *Cultural Significance* [Scott, 1931, p. 10]

The point to be made here is that when the prevailing system of theory and the existing order of facts part company, it is primarily the system of theory which must suffer readjustment in order to re-establish harmony between them.

This concept would reappear in Scott's later work [1941], when he included adaptation as an important element of his conceptual framework.

Both Scott and Veblen used more of a sociological approach to their fields of study to explain how the world works, rather than limiting themselves to the established, formalized problems in their disciplines. Scott recognized the "significance of accounts in the larger field of economic relationships" [Scott, 1931, p. vii], and "the place of accounts in the existing scheme of human affairs among peoples" [Scott, 1931, p. 3]. The basic premise of *Cultural Significance* is that the "fundamental eco-
onomic basis of any people's culture shapes the whole institutional superstructure of the society in question" [Scott, 1931, p. 26].

Scott [1931] described the historical development of a culture as moving through periods of harmony and disharmony. As cultural change occurs, there is a period of adjustment as the institutional superstructure adapts to the new "generally prevalent philosophical viewpoint." Once again, Scott's writings reflect Veblen's ideas. Veblen [1904] believed that men acquire habits of thought unconsciously, and the kind of thoughts that men get is shaped by their daily activities. Any major change in daily activities, such as that occasioned by the Industrial Revolution, would be expected to lead to a major shift in prevailing habits of thought.

Scott saw the scientific method as the new "habit of thought" coming to dominance, as evidenced by the following quote [Scott, 1931, p. 121].

Speaking in figurative language, it is this momentum of the habit of thinking in objective terms which makes the scientific movement the dominant cultural trend of the current period.

Thus, while the growth of large, machine-process driven industrial operations rendered existing control mechanisms inadequate, it was the newly acquired habit of thinking in scientific, objective terms which led managers to look to quantitative methods (such as statistics and accounting) as a more effective tool for control of organizations.

The development of Scott's thinking can be traced through the 1930s, from The Cultural Significance of Accounts to the essay on "The Tentative Statement of Principles" [Scott, 1937]. A Tentative Statement of Accounting Principles Underlying Corporate Financial Statements, published by the executive committee of the American Accounting Association [1936], indicates the academic community's recognition of the need for a conceptual framework to provide coherence and consistency to the body of accounting procedures. Scott's response to the Tentative Statement exhibits his ability to see beyond the immediate concerns and identify the more pervasive issue. He realized that the confusion about what constituted "generally accepted accounting principles" was a symptom of the underlying social and economic problem of redefining the role of accounting in organizations and society.
Scott [1937, p. 296] perceived an important dual role for accounting, as an internal control mechanism among various levels of management within the firm, and as an external mechanism for "the protection of various economic interests." He criticized the *Tentative Statement* as having an inappropriately narrow view of the role of accounting, as it addressed accounting's transaction recording function only, and neglected the other important functions of managerial control and protection of the interests of various groups of equity holders. Scott's view is contrary to the more traditional view espoused by Littleton, who wrote [Littleton, 1938, p. 235]:

> It is confusing, therefore, to propose that accounting has at the same time a protection-of-equities function, a control function, and a records function .... Actually there are not three separate functions: protection, control, and record; nor are there two separate functions: calculation of net income and valuation for financial condition. I conceive of accounting as built about a single function: to supply dependable, relevant information about a business enterprise.

Although the *Tentative Statement*’s focus on the transaction recording function was typical of accounting thought in the 1930s, Scott understood that the changing nature of business organizations demanded a broadening of the role of accounting. He had the insight to understand that the strength of accounting comes from maintaining close contact with the environment in which accountants and accounting systems function. Scott [1931] predicted that continuing changes in the environmental context would require adaptive adjustments in accounting systems.

The next step in Scott’s theory development appeared in "Responsibilities of Accountants in a Changing Economy" [Scott, 1939]. In this paper, he describes the impact of the Industrial Revolution, including the specialization of industries (e.g., manufacturing, finance, transportation), the development of joint-stock companies (continuity of life beyond the life of the proprietor), limited-liability corporations, and super-corporate organizations characterized by separation of ownership and control. The Industrial Revolution brought with it the need for improved financial reporting to meet the needs of resource providers (e.g., bondholders, equity holders, government), who were increasingly removed from the day to day operations of
the firm. Scott recognized that without a sound conceptual foundation "doctrinaire or half-baked formulations of principles may be frozen into the rigid requirements of law" [Scott, 1939, p. 400].

In his 1939 article, Scott presents his concept of the enterprise as the subject of financial reporting, and statement users as the primary beneficiary. Scott's emphasis on (external) users of financial reporting stands in sharp contrast to the predominant view of the 1930s which held that accounting's primary beneficiary is the (internal) proprietor. As a first step in the development of a conceptual foundation, Scott included in his framework an accounting orientation postulate, designating the enterprise as the subject and the financial statement users as the beneficiary of financial accounting. Finally, in his 1941 article, "The Basis for Accounting Principles" [Scott, 1941], Scott presents his fully developed conceptual framework. Following is a description of Scott's conceptual framework and an illustration is provided in Figure 1.

**FIGURE 1**

Orientation Postulate  
Modern Day Societal Values  
Economic and Social Organizations  

Pervasive Principle  
Justice  

Principles  
Truth  
Fairness  

Subordinate Principles  
Consistency  
Adaptation
Scott envisions his conceptual framework as an instrument for introducing coherence to the development of accounting procedures. (Figure 1 presents the author’s interpretation of Scott’s framework in a format parallel to that of the FASB’s SFAC2 [FASB, 1980]). Scott’s framework includes a hierarchical structure of postulates and principles to be used in the development of accounting rules, methods and procedures. In Scott’s [1941, p. 2] view, accounting principles are “statements relating accounting rules and procedures to underlying social principles.” Scott defines accounting principles within the existing structure of society’s beliefs and experiences, reflecting his emphasis on external constituencies.

**Orientation Postulate**

The first level of Scott’s framework is an orientation postulate that articulates between the environment in which accounting operates and accounting principles (see Figure 1). While an orientation postulate as an essential element of a theoretical framework is widely accepted by accountants in the 1990s, the need for an orientation postulate was not widely recognized in the 1930s. Scott contended that unity in accounting comes from a broad consideration of the social, political, and economic environment in which accounting serves. Years later, DePree [1989], Stewart [1989] and Zeff [1961] make the similar argument that an essential element of a theoretical accounting framework is an orientation postulate. Stewart [1989] and Zeff [1961] argue that a conceptual framework must include the perspective from which accounting reports are to be prepared.

Scott believed accounting reports are to be prepared for society about the business enterprise. In this aspect of his theory, Scott was consistent with the entity theory proposed years earlier by William Paton [1922]. Accountants in the 1940s supported the pre-industrial view that the major beneficiary of accounting reports is the (internal) proprietor of the organization. The debate over whether the appropriate focus for financial statements was the individual proprietor (proprietary theory) or the business as a separate entity (entity theory), was unresolved as late as 1961 [Zeff, 1961]. Further, until the promulgation of APB Statement 4 in 1970, an orientation postulate was not incorporated into an accounting framework for standard setting. Scott contended that a new orientation postulate was needed in response to the Industrial Revolution, and that
an orientation postulate was an essential element for a conceptual framework of accounting.

In recognizing the needs of external financial statement users, Scott proposed an orientation postulate for financial accounting theory that would eventually gain dominance. By 1978, the FASB identified the first objective of financial reporting as the provision of "information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions" [FASB, 1978, paragraph 34]. Although the focus on external users is universally recognized today, at the time Scott developed his framework, this represented a major departure from the prevailing point of view. More typical of accounting thought on an orientation postulate was the proprietary theory as presented by Charles Sprague [1912, p. 21], which describes the balance sheet equation as "What Belongs to me + what is Owing to me = what is Claimed from me + what is Unclaimed."

Pervasive Principle of Justice

After Scott defined the orientation postulate in his conceptual framework, he specified the next level of his hierarchical framework as a pervasive principle: justice. Justice requires that [Scott, 1941, p. 342]

accounting procedures, rules and techniques ... afford equitable treatment of all interests actually and potentially involved in the financial situations covered by accounts.

Society, as the beneficiary, demands principles that are not biased toward the interests of management, because such bias would preclude the equitable treatment of the interests of external financial statement users.

Justice is to pervade in the application of all subsequent principles (see Figure 1). For example, in applying the matching principle, accountants traditionally use statistics to estimate bad debt expense or depreciation expense. In some cases, however, accountants used these statistical methods to stabilize income rather than to present a fair depiction of operations in quantitative terms. The emphasis on justice reflects the widespread and intense public concern over misleading financial reporting and resulting business failures and scandals. In Scott's conceptual
framework hierarchy, he sets justice above the principles of truth and fairness.

Principles of Truth and Fairness

The third level of the hierarchical structure of Scott's conceptual framework includes the principles of truth and fairness (see Figure 1). Truth is defined comparable to the FASB's [1980] "representational faithfulness." Truth ensures that financial reporting "presents a true and accurate statement of the information which they purport to record and present" [Scott, 1941, p. 342]. In accordance with justice, truth requires that the financial reports not be misleading to external users. Truth is subordinate to justice, as misrepresentation necessarily violates the principle of justice.

Scott warned accountants to avoid a narrow definition or application of truth, as truth should be interpreted as meaning faithfulness of total impression, not narrow meticulous accuracy. Truth must be implemented relative to the circumstances, and accountants must use professional judgment in application of this principle. Scott cautioned that a narrow concern with truth might not accurately convey the financial condition of the business enterprise to external financial statement users. As an example, Scott stated that if accountants are "eccentric with truth," they might require recording all contingent liabilities, regardless of their likelihood of occurrence, thus providing a distorted picture of the potential impact of contingencies on the firm's financial condition. Accordingly, accountants must exercise discretion in deciding which contingencies to disclose. A "true" representation of the firm's financial condition should be the goal when implementing the truth principle.

Another example of Scott's application of a truth principle was his rejection of the valuation of inventory at the lower of cost or market. Scott denounced the conservatism rationale for the lower of cost or market rule as inconsistent with the underlying objective of financial reporting — the presentation of a "true" or accurate portrayal of the financial position of the firm. He preferred to value inventories at market in all cases. Scott's presentation of this view in a paper entitled "Conservatism in Inventory Valuation" [Scott, 1926] provoked a heated discussion. However, the debate ended with William Paton [1938] supporting Scott's view and chiding his colleagues for their "unduly narrow view".
In Scott’s framework, fairness is viewed as equal in importance to truth. Fairness is defined similar to the FASB’s definition of neutrality [FASB, 1980]. This principle ensures that financial reports are “fair, unbiased, and impartial, … and do not serve a special interest” [Scott, 1941, p. 343]. Fairness follows from justice such that financial reports are to be objective, not biased, interpretations of a business’s financial affairs.

**Subordinate Principles of Adaptation and Consistency**

The fourth level of Scott’s [1941] hierarchy includes two subordinate principles: adaptation and consistency. In defining adaptation, Scott stated:

[accounting rules, procedures and techniques ... must be continuously revised to allow for changing economic relations in order that they may continue to embody the principles of justice, fairness and truth [Scott, 1941, p. 343].

Because society and the economic environment change, accounting must change in order to adapt to the evolving social, political, and economic environment.

Scott understood that accounting, like other disciplines, is subject to revolutionary changes corresponding to changes in both social and physical phenomena. Scott [1941, p. 348] stated:

The elevation of mere rules and conventions to the status of principles tends to bring rigidity into accounting practice and into the thinking of accountants about practical problems. It tends to destroy the open-minded tolerance and initiative with which rules, procedures and techniques should be adapted to meet the changing problems of business enterprise.

As an example of the need for adaptability in accounting techniques, Scott advocated the introduction of statistical techniques into accounting in response to the increasing complexity of business organizations following the Industrial Revolution. In the simpler organizations of earlier time periods, there was probably no need for either the statistical estimation of bad debt expense or depreciation of fixed assets. Bad debts were written off individually when they were deemed to be uncollectible, and depreciation expense was recorded when assets were sold. As organizations became larger with continuous lives, and the number of transactions increased, statistical tech-
niques provided a way to record transactions collectively, and accomplish the appropriate matching of costs with revenues.

In Scott's view, disputes about the appropriateness of accounting techniques should not be resolved by appeal to practice or tradition. Rather, accounting practice should adapt and evolve, developing in parallel with the organizations it serves. The evolution of stockholder-owned corporations, with continued existence beyond the completion of a single venture/voyage or the life of a single proprietor, necessitated periodic income reporting. This development should be accompanied by a similar evolution in accounting practices, such as the statistical estimation of bad debt and depreciation expenses or the timely recognition of gains and losses from fluctuations in inventory value.

Scott advocated that the validity of new methods or procedures should be determined, not by the extent to which they conform with convention, but by the extent that they are logically derived from a conceptual framework. In turn, the appropriateness of the conceptual framework should be determined by the extent to which it is in harmony with the basic philosophies of its social, political, and economic environment. Scott perceived accounting theory as an abstraction of social processes continually open to change as the underlying social structures and processes change. Adaptation requires that accountants periodically reexamine their conceptual framework and related techniques/procedures, to allow adjustment to contemporary experiences, technologies, and beliefs.

Scott realized that the need to adapt and remain current must be balanced with the principle of consistency. In his framework, consistency is a subordinate principle that initially appears to contradict the equally important principle of adaptation. Scott discussed consistency as follows [Scott, 1941, p. 344]:

Accounting rules, procedures, and techniques should be consistently applied. They should never be changed arbitrarily to serve the temporary purposes of management. When changes are necessary, they should be controlled by the principles of justice, fairness and truth.

Consistency does not preclude adaptation, and the conflict is more apparent than real. While some adaptation is necessary, the adaptation principle must not be applied arbitrarily or capriciously. An appropriate balance of consistency and adapta-
tion will result in accounting reports that meet financial statement users' needs in a fair, just, and truthful manner.

In his understanding of accounting's evolving role in the social control of organizations, Scott foresaw that accounting is not a purely technical control measure. Rather, an accounting system is an integral part of its social context, simultaneously shaping and being shaped by its organizational, economic, and political environment. His writing, very much in the tradition of Thorstein Veblen [1904], focused on the changing status of organizations within a dynamic society. Covaleski, et al. [1991] concur that Scott saw beyond the first order concerns of dealing with practice anomalies, which preoccupied most accountants at the time. Scott recognized the importance of a major shift within the field. Scott was perceptive in his understanding of the ongoing cultural change in the 1930s, the shifts in economic and political power which required accompanying adjustments in the institutional control structures, and the role of accountants in facilitating this change.

SIGNIFICANCE OF SCOTT'S FRAMEWORK

Writing nearly thirty years after Scott published his framework, Chambers noted that accountants still had not developed a clear statement of the underlying theoretical constructs, essential prerequisites to the development of a coherent set of "generally accepted" accounting principles. Chambers [1966, p. 443] stated:

Many must have long wished for an inventory of generally accepted accounting principles; for whether one wishes to adopt, to rebut, or even simply to think about these principles, it would be useful to know what they are.

Paul Grady's "Inventory of Generally Accepted Accounting Principles for Business Enterprises" (ARS No. 7) [1965] was viewed as a "catalogue of generalizations from current practice" (see Chatfield, [1977, p. 299]). Scott's framework is uniquely forward-looking both in the definition of an orientation postulate to serve as the starting point in the development of accounting principles (providing the benchmark against which current or proposed procedures should be judged) and in shifting the emphasis of accounting standards from a narrow focus on individual accounting procedures to a broader focus on consistency
of accounting rules within the needs of the economic environment. In this respect, Scott's work went beyond the syntactical level of theory prevalent in his era, and represents an early example of the semantical level of accounting theory [Hendricksen, 1970].

The problems Scott identified in the 1930s have continued to command the attention of accountants. Accounting Research Study 1 (ARS1 [Moonitz, 1961]) and Accounting Research Study 3 (ARS3 [Sprouse and Moonitz, 1962]) impound several of the ideas Scott had espoused years earlier, including the concept of adaptation and the external focus for financial reports. These two research studies were considered revolutionary, even in the 1960s. The AICPA [1962] issued a disclaimer with every copy of ARS3, stating that the conclusions of the report were "too radically different from present generally accepted accounting principles for acceptance at this time".

The American Accounting Association's Statement of Basic Accounting Theory (ASOBAT) recognized the continuing difficulties in developing a conceptual framework and suggests that it was premature to suggest a detailed framework for a theoretical structure of future accounting as late as 1966 [AAA, 1966, p. 68]. However, ASOBAT clearly reflected the influence of several of Scott's ideas, including the orientation postulate, the "protection of equities" function of accounting, and the need for theory development to reflect the social, political, and economic environment. Scott's deductive, normative approach is reflected in the introduction to ASOBAT which states [AAA, 1966, p. 6]:

The absence of an accepted theory of accounting has led many accountants to equate "accounting theory" with the sum total of accounting practices currently in use. They thus lack logical criteria for accepting or rejecting various practices.

Scott's influence is also reflected in Accounting Principles Board's Statement 4 (APB4) [AICPA, 1970]. APB4 proposed a framework similar in structure to Scott's, with a set of pervasive principles which serve as the basis for subordinate levels of

---

3Hendricksen describes syntactical theories as those which "relate to the structure of the data collection process and financial reporting" [1970, p. 2].

4Hendricksen describes semantical theories as those which "concentrate on the relationship between a phenomenon (object or event) and the term or symbol representing it" [1970, p. 2].
more detailed principles. APB4 included both Scott's adaptation principle and his emphasis on the relationship between financial accounting information and the underlying economic environment. However, the APB did not refer to its framework in promulgating principles as Scott had recommended. The deductive approach advocated by Scott belatedly gained dominance, and is reflected in the FASB's SFAC 1 and 2 published in 1978 and 1980, respectively. SFAC 2 describes the conceptual framework as [FASB, 1980, ¶ 4040]:

> a coherent system of interrelated objectives and fundamentals that is expected to lead to consistent standards and that prescribes the nature, function, and limits of financial accounting and reporting.

The influence of Scott's ideas is readily apparent in several of the desirable qualitative characteristics enumerated in the FASB's hierarchy of accounting qualities illustrated in Figure 1 of SFAC2. The definition of representational faithfulness as "correspondence or agreement between a measure or description and the phenomenon it purports to represent" [FASB, 1980, p. 4053] obviously ties to Scott's truth principle, and also to his hope to raise accounting theory from the syntactical level (where "truth" is defined by internal consistency) to the semantical (where "truth" is defined by reference to an external reality).

Neutrality, described in SFAC2 as one aspect of reliability, impounds the principles of truth and fairness from Scott's framework. Scott's understanding of the need to balance consistency with adaptation is also reflected in SFAC2. Although consistency is listed as an important secondary quality interacting with relevance and reliability in the SFAC2 framework, the statement later cautioned that "No change to a preferred accounting method can be made without sacrificing consistency, yet there is no way that accounting can develop without change" [FASB, 1980, p. 4062].

Given that Scott was proposing a theoretical framework and an orientation postulate as early as the 1930s, it is interesting to speculate on the reasons such concepts did not gain authoritative support until 1980. The process by which such a framework gains legitimacy can only be understood in the context of the interaction of the people and institutions involved, including standard setting bodies, owners and managers of corporations, and accounting organizations both professional and
academic. It is important to understand the institutional changes which occurred in the standard setting environment between the 1930s and the 1970s to permit the acceptance of the FASB's framework, published in 1980, while Scott's framework, published forty years earlier, received little support. One important factor impeding the development of a framework was the rivalry between the two professional organizations — the American Institute of Accountants (AIA) and the American Society of Certified Public Accountants (ASCPA). During the period of rivalry between the AIA and ASCPA, there was little hope of achieving general agreement on a single conceptual foundation.

In addition, Scott's position as an academic and a non-accountant probably limited his ability to influence practitioners. As Previts points out [Previts, 1984, p. 13]:

... a dynamic tension had existed almost continuously between academic and practice elements as to the composition of a comprehensive conceptual model.

Although the profession has been slow to accept Scott's ideas, contemporary accounting theory reflects many of his ideas, thus ensuring him an important place in the history of accounting theory.

SUMMARY AND CONCLUSION

Financial accounting and reporting have frequently been criticized as providing incohesive and irrelevant accounting principles in a piecemeal reaction to economic phenomena. DR Scott, writing in the 1930s, envisioned the need for the accounting profession to develop a normative, deductive theoretical framework that reflected its culture and would serve as a basis for the standard setting process. In 1941, Scott proposed a conceptual accounting framework which included an orientation postulate defining the subject and beneficiary of financial reports. He also defined principles in his framework which reflected the social, political, and economic environment and was intended to provide cohesiveness to accounting principle promulgations. In addition, Scott provided examples of how such a conceptual framework should be applied in the standard setting process. Clearly, Scott's emphasis on the critical intertwining of the accounting profession and its socio-economic environment is as important today in understanding the conceptual roots of
the profession as it was to the accountants of his day in attempting to define their role in a complex industrial society.

Scott's early writings about the need for a conceptual framework continually adapting to the evolving social, political, and economic environment are as relevant in the 1990s as they were fifty years ago. His ideas can provide guidance in a continuing reevaluation of the existing frameworks.

REFERENCES


American Institute of Certified Public Accountants, "Statement by the Accounting Principles Board," statement enclosed in each copy of *Accounting Research Study (3)* (1962).


__________, The Cultural Significance of Accounts, Houston, Texas: Scholars Book Co. (1931).


THE DEVELOPMENT OF GOVERNMENT ACCOUNTING: A CONTENT ANALYSIS OF THE JOURNAL OF ACCOUNTANCY, 1905 TO 1989

Abstract: This content analysis of Journal of Accountancy items relating to governmental accounting spans a period of nine decades which included two world wars, a severe economic depression, and conflicts in Korea and Vietnam. These decades marked the departure from simpler local government accounting concerns alone to national governmental issues and the call for consistent accountability among the myriad federal agencies and programs.

Considering the growth of the public sector, its importance to all other spheres of American life, the complexity of governmental financial administration, and the events of the times, governmental accounting received only a modest amount of attention in the AICPA's journal — probably less than five percent of published content over the period. This limited coverage suggests a minimal amount of attention to governmental accounting matters within the profession which may be due in part to the fact that governmental accounting, until recently, was not a principal component of the profession's scope of services.

From a content perspective, the Journal did a more than adequate job of keeping its readers abreast of current developments through short news items. From a substantive viewpoint, however, the major papers were often reactive rather than forward-looking, or calling for positive change. Perhaps in part because of these realities, today, three quarters of a century after some of the early papers were published on related issues, the GASB continues to struggle with basic financial accounting and reporting issues for state and local government.

Several events of the late 1970s and the 1980s had significant influence on governmental accounting in the United States. These included the following:

The authors acknowledge the research assistance of Yvonne Fisher and Aldo Romeo.
2. Establishment of a distinctive standards setting body, the Governmental Accounting Standards Board (GASB) (1984).
3. Revision of the U.S. General Accounting Office (GAO) Comptroller General's Government Auditing Standards, the "Yellow Book" (1988; a revised exposure draft was also released in July 1993).
4. A campaign by the American Institute of CPAs (AICPA) for federal fiscal reform, including a federal chief financial officer, which resulted in the passage during 1990 of the Chief Financial Officers Act.

Related to these events has been the development and strengthening of government accounting organizations including the National State Auditors Association, the National Association of Local Auditors, and the National Intergovernmental Audit Forum, as well as the growing prominence of the GAO itself. The Audit Forum has served to bring together private sector accountants and local, state, and federal accounting officials.

The GASB's research agenda spans the issues of governmental accounting, including fundamental concerns such as the financial reporting model, basis of government accounting, and the capacity of governmental accounting systems to help measure performance. The Single Audit Act resulted in a great increase in state and local government audits; the revised "Yellow Book" identifies an expanding role for the auditor in specifying illegal acts. In addition, the GAO and Congressional committees continue inquiries into what they consider to be substandard audits of governmental entities and programs (Brown, 1987).

Given the importance of these developments, this paper examines the background, prologue events, and the role that the accounting profession played in influencing these events. By examining specific published materials that appeared both before and after the watershed of events of the early 1980s, the extent to which the profession participated in, or initiated, the developments is weighed. The Journal of Accounting and the contents of its pages are used as an approximate or "proxy" representation of "the profession."

It is a fact of professional history that substantive accounting developments of today, whether measured by legislation or
the content of generally accepted accounting principles (GAAP), are the products of preceding research and experience. Given this progression, the need to better understand the timing and origin of such precedents in this case as they apply to governmental accounting should be a worthwhile endeavor.

The paper begins with a methodology section that describes the content analysis procedures employed. Next the content of materials published during three distinct periods is reviewed. Finally, an attempt is made to assess the impact of the profession, as represented by the *Journal of Accountancy*, on the evolution and development of governmental accounting.

**METHODOLOGY**

To examine and describe the role of the public accounting profession in the evolution of governmental accounting, the content of the *Journal of Accountancy*, the "journal of record" so to speak, of the AICPA, was analyzed. The research premise was that content analysis of all published government accounting materials in the *Journal* provides an important basis from which to at least partially assess the profession's role.

It may be argued that the *Journal of Accountancy* reflects a supply and demand equilibrium for issues being addressed by the profession at a given point in time. The AICPA, of course, as with any professional organization, has many ways to inform its members, and it need not rely exclusively on a monthly journal. For example, the Institute uses a variety of newsletters, news bulletins, and training programs. However, the *Journal of Accountancy* is the profession's principal published organ and therefore an appropriate source for evaluating relative communication to and from members. The subjects that the *Journal* emphasized, or deemphasized, suggest what the Institute considered important. Therefore, *Journal* content was analyzed from the date of its inception in 1905 to 1989, a period of nearly nine decades.

An abstract was prepared for each published item identified as relating to governmental accounting regardless of length. An attempt was made to differentiate between the many news or update items, usually 1-2 pages or less in length, and the more substantive papers, four pages or more in length. It seemed relevant to the task at hand to distinguish between those items published simply to keep readers informed of developments and those which in a substantive way attempt to record, even influence, the extent and direction of such developments. As might
be expected, this task was made more difficult by the changing Journal formats over the nearly 90-year period. The file of abstracts was then analyzed for content to classify developments in governmental accounting by topic and by time period. Therefore, the analysis is an evaluation of materials based on their relationship to current governmental accounting developments, the perceived stature of the author(s), and other qualitative aspects.

The content analysis is divided into three periods: the four decades preceding the outbreak of World War II (1900-1939); the four decades of the war years and the years following World War II (1940-1979); and the 1980s.

It was deemed important to analyze the 1980s separately since it was in this period when so many of the important changes, delineated above, were actually taking place. This period's published papers tend to reflect the changes of the time, rather than influence these changes.

CONTENT ANALYSIS: PRE-WORLD II

*The Journal of Accountancy* began monthly publication in 1905 under the auspices of a forerunner association of what today is the AICPA. The first papers on governmental accounting were published in 1906. Throughout the early years of the Journal, the papers on governmental accounting addressed concerns of municipalities, mostly as they pertained to technical accounting treatments and subjects. This level of attention continued throughout the pre-World War II period. A 1906 item was an account of the work of a committee of the American Association of Public Accountants, today's AICPA, to recommend improvements in the methods and practices of governmental accounting (AAPA, 1906). Papers appearing in the period 1900-1909 dealt with attempts to design uniform classification systems for accounts and technical accounting problems, usually in specific cities—New York, Philadelphia, Buffalo, Minneapolis, and San Francisco, among others. The first decade of the 1900s also produced papers on governmental auditing. The June 1907 issue of the *Journal* includes J. Goodloe's report on investigations of governmental entities in western states; the investigations exposed gross neglect, bribery, and corruption, as well as the lack of records. Goodloe suggested that the American Association of Public Accountants should lead a campaign for mandatory audits of all public entities (Goodloe, 1907). A
1909 auditing paper discussed problems with the selection process for and qualifications of those conducting governmental audits (Smith, 1909). Additional papers in 1906, 1907, and 1908 touched on a broader range of familiar issues, such as recognizing differences between governmental and commercial accounting; the need for the postal service to raise rates; and New York City's poor accounting practices and credit concerns.

The attention to municipal accounting continued in the next decade, the 1910s. Municipal accounting papers addressed the need for recognition of the role of a CPA, the problem of municipal debts, the need for a municipal general ledger, and the desirability of a uniform classification system for municipal accounts. Cases specific to other cities were also included. The focus on municipal accounting was supplemented during the period as papers began to appear on accounting needs in counties and states (Rawlings, 1916; Fullington, 1916). During these years authors continued to explore familiar issues including comparability of compensation for accounting work and comparative procedures between the governmental and commercial sectors.

About this time a significant shift in topics toward the financial framework for the U.S. federal government began to appear. For example, papers addressed the need for a national budget. One of the most notable of these, "What is involved in the Making of a National Budget? by Frederick Cleveland, appeared in May 1913. Cleveland, a scholar and practitioner of public financial management during this era, led efforts to achieve passage of the Budget and Accounting Act of 1921, which created the Office of Management and Budget as well as the GAO (H. S. Chase, 1914). Editorials in 1921 indicated the profession's hopes for the adoption of the new national budget act and continued to express concerns about waste in the federal government. The submission of a budget for the federal government became a legal requirement in 1921.

Another significant topic addressed in these early issues concerned the difficulty in determining whether, in the absence of the profit motive, public entities effectively used taxpayer funds. Recognizing this difficulty, one Journal article specified that the accounting system capture statistics on program results. Another paper noted the need to develop cost accounting systems that assist in evaluating the efficiency and "quality" of public programs. A third author explored the use of unit costs,
including a "person-day" measure for several public programs. The similarity of such issues to those of performance auditing found in the 1960s and of the GASB's current research into "service efforts and accomplishments" is apparent (Tanner, 1914; Staub, 1912; Mucklow, 1917).

The *Journal* did not contain extensive coverage of governmental accounting topics in the 1920s and 1930s, but from a substantive viewpoint, the concerns during the 1920s remained issues of municipal accounting. Illustrative of these was the 1923 paper "Municipal Accounting" by J. O. McKinsey. An accounting faculty member of the University of Chicago, McKinsey was president of the American Accounting Association (1924) and founder of the consulting firm of McKinsey & Co.

One of the first papers addressing substandard work in governmental accounting and auditing appeared in 1926. It recounted the disagreements between the Department of Treasury and two accounting firms whose members were not associated with the American Institute.

The 1930 editions of the *Journal* included relatively few items on governmental accounting. Municipal accounting, including auditing municipal accounts, remained a dominant theme. Addressing the differences between governmental and commercial accounting also continued to be emphasized. Two 1937 papers described the work and progress of the National Committee on Municipal Accounting. This group was a predecessor to the National Council on Governmental Accounting (NCGA) and the GASB.

During the 1930s, one new issue, competitive bidding, was identified. Two papers criticized the movement toward, and the dangers of, competitive bidding by accountants for government engagements.

A brief overview of the key topics occurring with some degree of regularity in the *Journal* during these four decades is presented in Table 1.

**CONTENT ANALYSIS: 1940-1979**

Only a limited number of papers dealing with the public sector appeared in the 1940s. The first papers on the subject of governmental accounting (as contrasted with wartime topics) were published in 1947. However, a subtle, definite shift began thereafter; although about half of the papers addressed issues of
Table 1

Key Governmental Accounting Topics Appearing in the Journal of Accountancy 1900 - 1939

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Accounting and Reporting</td>
<td>74%</td>
</tr>
<tr>
<td>Focus Almost Exclusively on State and Local Governments, Including Specific U.S. “Cities”</td>
<td></td>
</tr>
<tr>
<td>Beginnings of Attention to Federal Financial Practices</td>
<td>16%</td>
</tr>
<tr>
<td>Need For a National Budget</td>
<td></td>
</tr>
<tr>
<td>1921 Budget and Accounting Act</td>
<td></td>
</tr>
<tr>
<td>Auditing, Especially Municipal Auditing</td>
<td>6%</td>
</tr>
<tr>
<td>Needed Qualifications of Auditors</td>
<td></td>
</tr>
<tr>
<td>Need for Municipal Audits</td>
<td></td>
</tr>
<tr>
<td>Other, Including Beginnings of Interest In Performance Measurement (now Service Efforts and Accomplishments)</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

municipal accounting, most others concerned federal financial management. Of the latter papers, most dealt with the deliberations of the first Hoover Commission and its report. Significantly, one paper dealt with accounting control in the national military establishment, a theme that gained importance from this point. A 1948 comment paper discussed a recurring problem of audit independence. The paper asserted that it is not enough to have governmental units audited; audits must be provided by officials independent of those who prepare the accounts (AICPA, 1948).

The shift toward federal financial management topics was "fashionable" in the 1950s; such topics offered evidence that the CPA profession was engaged in addressing the consequences of the massive structural changes to society and economic institutions and markets brought about by the great depression, the New Deal, and World War II. Infrequent papers did appear on

---

1Popularly known as the Hoover Commission, the Commission on the Organization of the Executive Branch is the formal title of two commissions headed by former President Herbert Hoover.
state and local accounting; among the more significant was a report on a study by the American Institute on audit practices in states. The study reported that state laws were not uniform and generally did not specify that professional independent audits be performed by trained/qualified personnel (AICPA, 1950). Federally-related topics covered during the 1950s included:

- Accounting and auditing for defense agencies and related industries.
- Commentaries on the two Hoover Commissions.
- Federal government internal activities such as the Joint Financial Management Improvement Program.

Several papers presented topics that were the forerunners of issues that would arise during subsequent decades, including inefficiency in federal government operations and controlling federal expenditures. In the early 1950s, the Institute called for the creation of a committee of accountants, representing the various national accounting groups, to study and make recommendations to help control federal expenditures (AICPA, 1951, 1952). Anticipating the difficulties of dealing with the federal bureaucracy, the Institute also cautioned practitioners to prepare and keep memoranda on all important discussions that occurred during engagements since a review of their actions could occur many years later (AICPA, 1953). An April 1959 paper commented on a model policy promoted by the AICPA regarding accounting and auditing for public funds. The proposal "protecting the Public Purse" recommended that legislation requiring independent audits include specifications of the professional qualifications of the auditors, and further that audits be conducted in accordance with generally accepted auditing standards (GAAS).

Through the 1960s, the majority of Journal items again addressed governmental accounting for federal issues. This offered a contrast to the relative emphasis of content items published prior to World War II. Among the few items on the subject of local accounting was a comment announcing the release in 1968 by the Municipal Finance Officers Association (MFOA) of its "Blue Book" on Governmental Accounting, Auditing and Financial Reporting. The "Blue Book" was the forerunner in many respects to current GAAP for government. The item pointed out
that the MFOA directs auditors to be in conformity with the "Blue Book."

The focus of the 1960s was so concentrated on federal issues that by the end of the decade, a paper appeared that reminded accountants that federal accounting was only one part of the field. Local accounting, the paper stressed, was equally important to the nation's welfare (Joplin, 1967).

The comprehensive scope of the topic coverage during the 1960s related to federal accounting included the following:

- The federal budget.
- The Joint Financial Management Improvement Program.
- The introduction to accrual accounting.
- The need to improve governmental accounting systems while upgrading accounting skills.

A 1962 item described the creation, by Agriculture Secretary Orville Freeman, of an Office of Internal Audit and Inspection, headed by an inspector general, in the U.S. Department of Agriculture, one of a series of early developments that would lead to the passage of the Inspector General Act in 1978 (Bryan, 1962).

A significant development suggested by the writings during the 1960s was the rapid increase in the audits of federal grant entitlement programs. A series of papers estimated that the number of government-related audits increased from 12,000 per year in the 1950s to nearly 50,000 annually by the later 1960s. Some authors prophesied that this would become one of the most significant sources of demand for CPA audit practice (Lytle, 1964; Bryan, 1963). With this growth came corresponding concern as to who could competently perform the services. Several items noted that audit-related provisions called for CPAs or licensed public accountants to conduct federal audit work.

A 1967 item, "Social Accounting," commented on a bill pending in Congress to create a council of social advisors. The concept was received favorably, at least with regard to accountants participating, and served to point out that until that time, little attention had been given to the subject of social accounting.

Also during the 1960s, there was a return to a theme begun many years earlier in the literature, the rationale for the development of performance measures and performance auditing in the public sector. Today this topic is among those on GASB's research agenda (Morse, 1961; Fluckiger, 1963).
During the 1970s, the Journal’s governmental accounting literature had two principal themes. First, the rapid increase in federal program audits received wide coverage; this interest resulted in the identification of difficulties in conducting those audits and the need for more relevant and useful audit standards. Second, a concern over accounting problems associated with local governmental entities was once again expressed. The Journal also covered an important event of the 1970s, the release in 1972 of the initial version of the GAO “Yellow Book,” the manual of generally accepted governmental auditing standards. This document expanded the concept of governmental auditing from traditional financial audits to audits and tests of legal compliance, as well as program efficiency and effectiveness. A 1974 report in the Journal reviewed and interpreted these standards for the readership. During the decade, the Journal included more materials on this topic.

In 1975, the GAO reaffirmed its position, after an inquiry by the Congress, that only CPAs (and a “grandfathered” group of licensed public accountants) should perform governmental financial audits (AICPA, 1975). The GAO’s expansive view of governmental auditing, including performance auditing, was related to the concept of performance measurement. Given this impetus, the Journal in the 1970s published several articles that renewed and extended the discussion of performance measurement and auditing (Henke, 1972; Staats, 1976; Pomeranz, 1978). Journal issues also reported a number of items on social accounting (Marlin, 1973) and an account of a Congressional hearing on problems of governmental auditing (Hrisak, 1979).

In the mid-1970s the GAO preached its “gospel” to state governments and developed a “model state auditing act” patterned after its own activities, for state audit functions. Some states copied the model, others borrowed portions of it, and another group of states rejected it. Also in 1975, an item detailed the 1974 release of the AICPA’s audit for state and local units, providing further evidence of the interest in extending national lessons to the state-local level (AICPA, 1975).

During the 1970s, local government accounting writers sought to develop consensus and once again addressed issues at the local level and to resolve issues that first arose fifty to sixty years earlier. This attempt toward resolution reflected two developments: (1) the progress being made at the federal level in areas of financial management and (2) a desire to transfer an
emphasis on accountability to those cities that had experienced widely publicized financial problems. In the 1970s, the crises in New York City, as well as other state and local entities, were covered extensively by the media, including professional journals. Indicative of the reaction to such difficulties was the December 1976 Journal item "Governmental Financial Statements—A New Look," which questioned the content of government financial statements (Hepp, 1976). At the same time, Coopers & Lybrand, working with researchers at the University of Michigan, documented problems with municipal accounting practices (AICPA, 1976). This attention to municipal government accountability in the late 1960s led to a series of papers related to settling general accepted accounting principles (GAAP) for municipal governments (see March 1979 edition). It seemed that the pendulum had completed its swing from fundamental topics, improving municipal accounting, to a consideration of federal matters and then back, again, to municipal essentials. It is important to note that GASB, which of course establishes accounting principles for state and local government, was established only a short time later, in 1984.

Table 2 presents a brief synopsis of governmental accounting areas receiving most attention during the period 1940-1979.

**CONTENT ANALYSIS: 1980-1989**

The opening pages of this paper offer considerable detail on the many important developments in governmental accounting in the late 1970s and the 1980s, including passage of the Inspector General Act, Federal Managers' Financial Integrity Act, Single Audit Act, and Chief Financial Officers Act (actually passed in 1990); substantial revision of the GAO's "Yellow Book"; and creation of GASB and establishment of its research and working agenda. To a considerable extent, these developments represent the culmination of a lengthy period of research, political activity, and sheer historical evolution in governmental accounting. Thus, the content of the Journal in the 1980s largely reflects the nearing culmination and implementation of these events, rather than a building toward these changes.

In the 1980s, nearly all issues of the Journal reflect intensive, if brief, coverage of news items such as: the activities surrounding the creation and progress of GASB; bond rating firms' advice and counsel to municipalities on accounting practices; the progress of legislation relating to single audit and other fi-
Table 2

Key Governmental Accounting Topics Appearing in the
Journal of Accountancy
1940 - 1979

<table>
<thead>
<tr>
<th>Important Shift to Federal Financial Topics</th>
<th>46%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Hoover Commissions</td>
<td></td>
</tr>
<tr>
<td>Accounting in Defense and Other Federal Agencies</td>
<td></td>
</tr>
<tr>
<td>Articles about Joint Financial Improvement Program</td>
<td></td>
</tr>
<tr>
<td>Federal Budgeting</td>
<td></td>
</tr>
<tr>
<td>Inspector General</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Auditing (Largely Federal)</th>
<th>29%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Growth in Federal Programs and Need for Audits</td>
<td></td>
</tr>
<tr>
<td>Qualifications of Auditors; Need for Independence; Auditing Standards</td>
<td></td>
</tr>
<tr>
<td>GAO’s “Yellow Book” of Generally Accepted Auditing Standards for Government</td>
<td></td>
</tr>
<tr>
<td>Performance and Compliance Auditing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuation of and Return to Concern with Municipal Accounting (Especially Toward End of 1970s)</th>
<th>14%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFOA’s “Blue Book” of Accounting Principles</td>
<td></td>
</tr>
<tr>
<td>Financial Crisis in U.S. Cities</td>
<td></td>
</tr>
<tr>
<td>Renewed Attention to Municipal Accounting Practices</td>
<td></td>
</tr>
</tbody>
</table>

| Performance Measures; Social Accounting; Other | 11% |

| 100% |

nancially related bills before Congress; federal program audit quality problems; the release of various NCGA and GASB pronouncements; etc. In short, the Journal appears to have done an excellent job of keeping its members informed about current developments important to professional governmental accounting practice. Such coverage was usually a few paragraphs in length; on occasion a page or two of discussion was presented.

Viewed another way, however, a different story emerges. If an assumption is made that any given issue of the Journal of Accountancy contains only five major papers on all subjects (papers, that is, of at least 4-5 printed pages in length), then a year’s worth of Journal issues could include about 60 major papers (5 papers x 12 issues). Analysis of the 1980 issues of the
Journal in this manner indicates that in any given year within this decade an average of only about three papers appeared in the Journal on governmental accounting. This is about five percent of a year’s major papers. This analysis includes reports on lengthy interviews with officials, but excludes papers in which there was only brief coverage of governmental accounting. Admittedly one cannot conclude too much from this statistic unless a comparative study were completed of Journal coverage of other industry groups. However, it is interesting to reflect upon this point since one may assume that it is through such substantive papers that the Journal and profession go beyond merely reporting accounting developments to inform members and instead influence the direction of the field itself.

From a content perspective, the papers appearing in the Journal in the 1980s offer a rather balanced blend of attention to financial accounting and reporting, and auditing, issues, and to federal government and state and local government accounting issues. The largest number of papers was in the auditing field, including extensive coverage of single audits, compliance audits, operational auditing, federal program grant audits, and relevant auditing standards. Illustrative of these papers is the article by Dale Flesher on operational auditing, and the papers during the decade by Steinberg and Broadus on single audits (Flesher, 1980; Steinberg, 1981; Broadus, 1985, 1987).

Financial accounting and reporting coverage was devoted largely to state and local issues and included papers on the important differences between business and government accounting, defining the governmental reporting entity, the going concern concept as it relates to government, and recognition issues. Martin Ives’ piece, “Accountability and Governmental Financial Reporting,” and the paper by Freeman and Shoulders, “Governmental Fund Operating Results: Three Formats,” are indicative of this coverage (Ives, 1987; Freeman and Shoulders, 1985).

In addition, a few papers appeared on broader topics relating to the role of the GAO and federal financial management. (Collins, 1987; Bowsher, 1987). The papers in this decade are authored by an impressive list of governmental officials, public accounting, academic, and other individuals. Many of the individuals are either current Board members of GASB or played a key role in its formation, or were instrumental in changing and improving governmental auditing during this decade.
Table 3 presents a summary of the topics covered in the major papers included in the *Journal* during the 1980s.

**Table 3**

**Key Governmental Accounting Topics Appearing in the *Journal of Accountancy* 1980 - 1989**

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditing</td>
<td>41%</td>
</tr>
<tr>
<td>- Federal Grant Audits</td>
<td></td>
</tr>
<tr>
<td>- Operational Auditing</td>
<td></td>
</tr>
<tr>
<td>- Single Audit</td>
<td></td>
</tr>
<tr>
<td>- Auditing Standards</td>
<td></td>
</tr>
<tr>
<td>- Role of the GAO</td>
<td></td>
</tr>
<tr>
<td>- Improving Audit Quality</td>
<td></td>
</tr>
<tr>
<td>- Compliance Auditing</td>
<td></td>
</tr>
<tr>
<td>Financial Accounting and Reporting (Largely State and Local)</td>
<td>32%</td>
</tr>
<tr>
<td>- Differences Between Business and Government</td>
<td></td>
</tr>
<tr>
<td>- Defining the Entity</td>
<td></td>
</tr>
<tr>
<td>- Going Concern Concept</td>
<td></td>
</tr>
<tr>
<td>- Reporting Budget Information</td>
<td></td>
</tr>
<tr>
<td>- Reporting Formats</td>
<td></td>
</tr>
<tr>
<td>- Recognition Problems</td>
<td></td>
</tr>
<tr>
<td>Accountability of Government</td>
<td>27%</td>
</tr>
<tr>
<td>- Improving Efficiency</td>
<td></td>
</tr>
<tr>
<td>- Federal Financial Management</td>
<td></td>
</tr>
<tr>
<td>- General</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY**

This study of scores of *Journal* articles relating to governmental accounting spans an era which included two world wars, a severe economic depression, and conflicts in Korea and Vietnam. In general, these times marked the departure from simple local government accounting concerns to national governmental issues and consistent accountability within myriad federal agencies and programs.

Prior to World War II, most *Journal* items addressed the technical content of accounting for municipalities during the period when the U.S. was becoming urbanized. Items which
covered federal matters were chiefly concerned with the issues relating to the need for a national budget and similar concerns which were addressed in the passage of the Budget and Accounting Act of 1921 — a watershed event which established the Bureau of the Budget, the executive budget function, and the U.S. GAO, the congressional audit agency.

Following World War II, *Journal* literature began to reflect a preoccupation with federal financial management. The decades of the 1950s, 1960s, and 1970s witnessed an explosion of federal programs and expenditures, accompanied by a growing concern over the accounting for an auditing of the funds associated with these initiatives. By the later 1960s, the number of federal audit engagements per year was estimated to be 50,000, an increase from approximately 12,000 such audits a decade earlier. Such growth has had a profound impact on the profession's economic structure and its expected base of skills, knowledge, and competence. An increased number of public accounting firms had begun to participate in governmental accounting opportunities. These developments also led to passage of federal legislation such as the Inspector General, Single Audit, and Chief Financial Officers acts.

By the close of the 1970s, as increased federal expenditures were receiving political attention, innovations were being experienced at the state and local levels rather than at the federal level. *Journal* authors again turned their attention to the state and local scenes. A series of papers on accounting standard setting for state and local governments appeared in the late 1970s in anticipation of, for example, the GASB.

The papers appearing in the 1980s, an average of about three a year, represent a rather even balance of federal, and state and local accounting issues, revolving around two main concerns: a continuation of the focus on federal grant program audits and related auditing matters; and considerable coverage of state-local accounting and reporting topics. Thus, papers of the 1980s often directly related to the major events of the period, including the creation of GASB in 1984 and its working agenda.

Those contributing much of the literature during this period of nearly nine decades reads like a list of "who's who" in U.S. governmental accounting: comptrollers general, state auditors, other governmental officials, and leading academics and practitioners — individuals well-established in the profession —
contributed major papers. To this extent, the quality of the work appearing in the Journal is commendable, written as it was, by knowledgeable and experienced people.

However, considering the growth of the public sector, its importance to all other spheres of American life, the complexity of governmental financial administration, and the events of the times, governmental accounting does not appear to have received an overabundance of attention in the AICPA's journal. A numeric computation of such coverage showed that during the 1980s major papers on governmental accounting topics averaged about three a year, out of a possible 60 papers, or about 5 percent of the total number. Estimates for earlier decades, while cruder, indicate percentages below even this level. This limited quantitative coverage suggests a minimal amount of attention to governmental accounting matters within the profession, which may be due in part to the fact that governmental accounting, until recently, was not a principal component of the profession's scope of services. This was due to the fact that governmental auditing engagements were not initially mandatory, nor were they seen to be priced to be the most attractive economic option for accounting firms. As mentioned earlier, such conclusions must be tentative since it is nearly impossible to suggest an optimal amount of such coverage in the Journal. Also, government-related contract activities were often attended by publicity and more public attention than CPAs were accustomed to receiving. This, too, was a negative influence on CPA firm interest.

CONCLUSIONS

Aside from any quantitative considerations, what might one conclude with regard to the Journal's coverage of governmental accounting topics? First, in terms of keeping its readership informed as to current developments which would likely influence those in the practice of governmental accounting, the Journal appears to have performed at a rather high level. Most issues contained brief updates on pronouncements, legislation, and other occurrences of importance to the practitioner.

From a more substantive viewpoint, the record is less clear. A professional or academic journal would seem to be many things, but it surely reflects to a considerable extent what its readers or members believe to be important as measured by the papers they submit for review. Moreover, a journal also makes a statement about what it thinks is important by the decisions it
makes with regard to the acceptance or rejection of certain papers or topics. In addition, most journals selectively, if quietly, seek out manuscripts on topics they deem timely and important. Thus, the content of the *Journal of Accountancy* in the area of governmental accounting is a rough approximation of what at least a significant part of the profession believes to be worthwhile at the time. Tables 1, 2, and 3, presented earlier, summarize the recurring topics covered between 1905 and 1989.

The pre-World War II coverage of the *Journal* clearly was devoted in large measure to the details of municipal accounting. The national mobilization and events of global conflict caused this momentum to be transformed by World War II and it is significant that only now, even in the 1990s, is the profession returning to basic municipal accounting issues raised in the early part of the century, including the appropriate basis of governmental accounting (accrual, modified accrual, etc.), and the format of financial reporting. Indeed, the GASB even now continues to struggle with issues raised early in the century. In any event, following the War, the *Journal's* attention largely turned to federal financial matters. It is interesting to speculate about the status and evolution of state and local accounting if the nation's economy had not been so abruptly changed.

The explosion of the federal government following the War diverted the attention of the profession, and perhaps all professions, to things federal in nature. The *Journal's* coverage reflects this preoccupation — papers included extensive detail and advice on, among other things, successfully conducting federal program audits. This attention by the profession, at least in part, led to the passage of several pieces of important financial legislation during and around the decade of the 1980s. Then, without necessarily abandoning federal accounting issues, the 1980s witnessed a return to state and local accounting matters.

As significant as the materials included in the pages of the *Journal* during this period were, the material not included, or at least included in very limited amounts, is at least as important as that published. Although some papers, reports, and editorials advised readers of the ways to perform high-quality governmental engagements prior to the 1980s, little, if any, coverage was given to reporting concerns or critical reports on substandard audit work or of those penalized for performing such substandard work. Yet this issue was a significant concern in the 1970s.
and continues even today, given the recent GAO and Congressional inquiries into this problem.

Similarly, one of the major developments of the 1960s and 1970s was performance auditing at all governmental levels. Due to the interest on the part of officials and the electorate to have such information, auditors were engaged to assess efficiency and effectiveness, often without adequate background education or an information base to assist them. However, the pre-World War II attention to performance measurement was not fully developed by the leaders of the education and practice communities (Brown, 1982). The Journal supplied few papers on the topic of performance measurement and auditing, most occurring late in the evolution of performance auditing. That this is not an unrealistic expectation is shown by the leadership exerted by the profession in Canada in the area of value-for-money auditing. And, finally, minimal Journal coverage was provided on topics such as social accounting and social responsibility.

As evidenced by this research, the Journal of Accounting seems to have served its readers-members by keeping them current on the happenings of the time. It is not at all clear that the Journal has served the profession as well as to identifying more controversial and unsettled issues.

This paper has provided a fundamental outline of the development of professional accounting literature in the United States as it relates to governmental accounting. The methodology used was an archival content analysis methodology to assess the topical and qualitative significance of items published in the Journal of Accountancy over most of the twentieth century. Future research to affirm or refute the initial assessments of this content outline should assist scholars and policy makers in developing a better understanding of the origins of governmental accounting in the United States. Such research could include similar analyses using other practice and academic journals and could also include a breakout of topic coverage by funded and unfunded research. Additional projects could raise in even more basic ways the fundamental question of the extent to which the profession should lead or simply react to needed and sweeping changes in governmental accounting.
REFERENCES


THE GERMAN ACCOUNTING PROFESSION — 1931 AND BEFORE: A REFLECTION OF NATIONAL IDEOLOGIES

Abstract: The purpose of this paper is to examine how the demand for independent audits and the German accounting profession evolved from the late 1800s to the early 1930s despite the absence of competitive market forces. The paper posits that cultural ideologies, specifically with respect to nationalism, paternalism and anti-individualism, provide reasons for the unique configuration of not only the German corporate/banking structures responsible for originating financial reports but the accounting profession that audited them. As the German accounting profession was in an embryonic stage, it was not capable of successfully confronting the corporate/banking alliance to significantly impact financial reporting or the demand for audits. Economic crises served as the dominant pressure for business reform and legislation mandating audits in Germany.

In 1931, a Presidential Decree and the ensuing Company Law mandated annual audits for large public firms in Germany (Aktiengesellschaften, or AGs), and gave government sanction to the German accounting profession.¹ Perhaps due to their importance for the national economic good, the AGs were the only non-service companies subject to mandatory audits. The limited liability companies (Gesellschaften mit beschränkter Haftung or GmbHs), and the sole proprietor operations escaped the effects of the new Company Law. Tax law, however, regulated the accounting of these latter two entities [Düring, 1939; Beuck, 1939].

Although the German legislature had made numerous attempts to amend the Company Law as early as 1926, stock-

¹The 1931 Company Law not only changed the accounting profession but also further regulated financial reporting by specifying classification formats and valuation techniques for balance sheet and profit and loss accounts. The 1931 Commercial Code also contained regulations related to the general shareholders meeting and to management's responsibility for annual reports [Voss, 1933].
company and bank failures precipitated the emergency Presidential Decree and rapid enactment of the revised Company Law [Grossmann, 1930; Düring, 1939; Abel, 1967]. The draft of the 1931 Company Law cited the recent collapse of various enterprises, including the second largest insurance company FAVAG, to illustrate the need for mandatory audits [Dykxhoorn and Sinning, 1989a]. Semler [1939] argued that the new law was a direct effort on the part of the government to prevent future company failures.

From World War I (WWI) to the 1930s, the German government struggled with critical national economic problems such as reparation payments and Kapitalnot [Schmidt, 1934]. Kapitalnot refers to the shortage of capital that followed WWI as a result of reparation payments to the victorious Allies, German investment in tangible goods to fight hyperinflation, and the importation of foodstuffs and raw materials. A disconcerted public placed pressure on the legislature for economic reorganization that redefined auditor accountability and provided the framework for the reform of accounting and auditing standards [Düring, 1939; Semler, 1939; Stolper, 1940; Abel, 1967; Dykxhoorn and Sinning, 1989a].

Several explanations exist for the emergence of audits and an accounting profession to provide auditing services. Wallace [1985] and DeAngelo [1981] depict audits as a commodity, subject to the same laws of supply and demand as any other commodity in an unregulated competitive market. They suggest that audits serve as a monitoring device for outside stockholders to deter management stealth and management decisions contrary to owners' interests. Audits possess value because they provide a means to improve the quality of financial statements for both investors and management, thereby enhancing user confidence in the audited information. Both authors argue against the need for mandatory audits, stating that government regulation may be inefficient since private mechanisms of contracting and pricing may serve to supply society's informational needs. If audits

---

2See Jensen and Meckling [1976] for a discussion on the demand for audits as a monitoring device.

3Authors such as Previts and Merino [1979] offer evidence that private market mechanisms do not provide a sufficient supply of financial information to investors. A corporate philosophy that equates secrecy to success, such as that found in the Ivar Kreuger case [Flesher and Flesher, 1986], suggests that the business sector may withhold information requisite for investor decisions.
possess value in unregulated markets, as Wallace [1985] and DeAngelo [1981] suggest, then such markets also require an accounting profession to provide the audit services.

Germany's financial markets lacked a strong competitive atmosphere and did not exhibit a compelling demand for independent audits during the first three decades of the twentieth century. Harmony among the German corporate, banking and government interests and lack of widespread ownership served to diminish the need for monitoring and external access to information [Abel, 1971; Dykxhoorn and Sinning, 1989a; Gallhofer and Haslam, 1991]. Thus, audit demand does not appear to provide a strong basis for the emergence of the German accounting profession.

Theories drawn from the sociology of professions literature offer arguments other than audit demand for the emergence of an accounting profession. During the 1960s, sociologists began to take a new approach that viewed professions as political groups which can influence economics, markets, the state and class systems [Freidson, 1986]. Some sociologists posit that members of occupational groups employ specialized knowledge, credentialism and closure to establish professions that externally delineate their disciplines from other occupations [Larson, 1977]. If a profession can control the educational requirements and admission to its field, it can optimize its position of power in the market by controlling the supply of labor.

Freidson [1986, p. 35] warns that the term profession must be employed as "a historically and nationally specific 'folk concept'." He claims that professions only arise in industrial countries influenced by Anglo-American institutions. After the arrival of industrialization in England and the U.S., strong market economies, decentralized passive governments and laissez faire attitudes enabled successful occupations to achieve monopolistic professional power in competitive, unregulated markets.

---

4Freidson [1986] describes credentials as items that provide information regarding the ability of a worker. Examples are diplomas, professional certification, licenses and personal testimonials. Closure refers to the ability of a profession to exclude unwanted outsiders in order to achieve market control [MacDonald, 1985].

5Individuals entering the preindustrial professions of law, medicine and religion achieved status through attending respected universities and through elitist stations acquired by birth [Freidson, 1986].
These conditions, Freidson [1986] argues, did not exist in industrialized continental Europe where occupations did not have to campaign for status. The middle class achieved status through education at elite, state sponsored educational institutions [Freidson, 1986]. Graduates often obtained positions in civil service organizations or technical jobs in large cartels. Bureaucratic entities, not market position, offered occupational security and protection. Freidson’s analysis suggests that accounting professions only emerge in conjunction with competitive market forces and would not appear under a bureaucratic government and communal ideology such as that found in Germany.

The arguments of Wallace [1985], DeAngelo [1981] and Freidson [1986] pose the question:

Does only one form of economic system, i.e., competitive markets, generate a demand for independent audits and an accounting profession?

Abercrombie et al. [1986] provide evidence that may explain how audits and the German accounting profession existed in the absence of competitive market forces. They submit that capitalism can surface under diverse ideologies and suggest that these ideologies affect the way capitalism is implemented. Thus, the form of capitalism found in a given country usually reflects the dominant ideology in that country. Using Japan as an example, Abercrombie et al. [1986] illustrate how cooperative capitalism can co-exist with the societal attributes of nationalism, paternalism and anti-individualism that stress collective responsibility rather than individual competitive effort.

Abel [1971] offers an additional explanation for the emergence of the German accounting profession. He argues that throughout the history of Germany, economic collapses, not the evolution of accounting theory, have been the chief motivating factor for Company Law adjustments. Economic crises, not competitive market forces, may have been the motivation in the demand for external audits. This study suggests that the universal concepts of nationalism, paternalism and anti-individualism, found in Abercrombie et al. [1986], provide contextual richness for understanding how economic events are reflected in the structural evolution of institutions such as the corporate/banking alliance in Germany, and in turn, the accounting profession. The analysis attempts to understand how political, economic
and social conditions impacted the emergence of the accounting profession in Germany despite the lack of competitive market forces to demand audits.

Awareness of the interaction among political, social and economic forces may assist in the current effort towards harmonization of accounting standards. Dykxhoorn and Sinning [1989b] note that Germany delayed adoption of the European Economic Community (EEC) Fourth Directive for seven years. The intention of the Directive was to harmonize accounting practice within the EEC. One means of European harmonization was the extension of mandatory audits to limited liability companies. The authors state that the Directive, rather than promoting unanimity, fostered discord within the German accounting profession. Sensitivity to the ideological history of the German accounting profession may have provided insight into conflicts over EEC directives and the resistance of the German accounting community to accounting and auditing harmonization.

This paper first defines the analytic narrative methodology [Porter, 1981] that the analysis employs to examine the emergence of the German accounting profession. Next, the paper discusses the ideologies of nationalism, paternalism and anti-individualism and explains how these three concepts influenced German institutions. Included in this discussion is an analysis of the impact of the corporate/banking alliance on accounting practice and the evolution of the accounting profession. The study then traces the evolution of the German accounting profession from the nineteenth century, but focuses on its development during the first three decades of the 1900s. The analysis ends with the economic crises of the 1930s, the accompanying federal legislation mandating audits and the establishment of the new professional accountant, the Wirtschaftsprüfer (WP). Wirtschaftsprüfer can be translated literally as economic examiner [Summary, 1939, p. 96]. These accountants are licensed statutorily much as Certified Public Accountants (CPAs) in the United States (U.S.) today. The analysis concludes that despite an environment of cooperative capitalism, a demand for independent audits evolved. Economic crises provided the need for

---

6As most early accountants also performed auditing duties, this study uses the term practitioner in a universal sense that includes accountants and auditors without attempting to differentiate between the two roles. The paper does not include an examination of managerial accounting.
business and accounting reform, while Germany's ideological interpretation of the universals of nationalism, paternalism and individualism structured the accounting profession in a culturally unique way.

**METHODOLOGY**

The study employs the literature from Porter's [1981] theory of emergence to trace the evolution of the German accounting profession and its interaction with the socioeconomic factors of the period. Emergence refers to the “process of organization through which each entity becomes temporarily and spatially connected with its antecedent world” [Porter, 1981, p. 74]. Porter [1981] explains that the historical event consists of a unique pattern of emergence where each event singularly interacts with antecedent conditions by culling specific attributes which pertain solely to itself. Porter's [1981] methodology consists of an analytic narrative designed to focus on the chronological pattern of similar occurrences followed by a backward contrasting between subsequent and prior events to analyze their association. The retrospective process highlights discontinuities, or unexpected relationships, that may be marked by the initial sequential analysis.

The first step in an analytic narrative is to identify a phenomenon of interest which in this study is the emergence of legislation mandating audits. Then, in explaining the temporal sequence of an event, the researcher should examine the ascending hierarchical interaction of individuals, groups, institutions, concepts (ideas and principles), fields (disciplines such as economics) and the “most abstract level of thought, universals, involved in a specific event's organization [Porter, 1981, p. 86].

This analysis treats the accounting profession as an institution that interacts with other institutions such as the corporate/banking community and the national government (see Figure 1). Three primary accounting groups: academics, book examiners and audit companies, constitute the institution of the German accounting profession during its evolutionary period in the first three decades of the twentieth century. Throughout the study, the analysis considers the interaction of these groups and institutions with concepts, such as secrecy, disclosure, and monitoring, socioeconomic phenomena, and lastly with the cultural attributes of nationalism, paternalism and individualism, which it treats as universals.
FIGURE 1
Porter's [1981] Ascending Hierarchy of Elements Applied to the Emergence of the 1931 Germany Company Law

EVENT: 1931 Germany Company Law Mandating Audits and Establishing a New Class of Accountant, the Wirtschaftsprüfer.
THREE PREVAILING IDEOLOGIES AND THEIR IMPACT ON GERMAN INSTITUTIONS

Abercrombie et al. [1986] suggest that three cultural elements: nationalism, paternalism and individualism, influence the form of capitalism, and other societal structures, extant in a nation. The analysis employs Abercrombie et al.'s [1986] approach in suggesting that the German accounting profession emerged in an economic and political atmosphere that reflected communitarian concepts rather than an ideology based on individualism.

Nationalism as a Characteristic of Germany

The coexistence of nationalism with capitalism in modern Germany demonstrates the contradiction inherent in the evolution of German political ideology. Free-trade and social democracy co-existed. During the eighteenth century, national Prussian policies promoted the growth of Cameralism (Mercantilism) that supported the protection of the markets from foreign intrusion. Cameralism, the predominant economic policy of the period, was synonymous with the creation of a state institution embodying a national economy [Schmoller, 1967]. Liberalism, while used to justify arguments for free trade, always remained shrouded in a tradition of state involvement that shielded market positions. Industries and trade groups frequently looked to the government for protection.

The evolution from feudalism to industrialism promoted the formation of joint-stock companies during the 1800s. Throughout the first three decades of the twentieth century, large German corporations maintained an interactive relationship with the Reich government. The German government actively promoted consolidation, perceiving cartels as more effi-

7Liberalism in Germany referred to a policy of individual freedom, but unlike that found in England or France. German liberalism remained cloaked in "the Cameralist tradition of state intervention" and a sense of community [Hasek, 1925, p. 90]. Industries and trade groups, economically depressed by unregulated competition, looked to the government for protection. The state frequently intervened by nationalizing particular industries, such as the railroad and the utilities, considered essential for the country's good. Direct government supervision, however, did not ensue until the banking crises of 1931 and did not become the norm until the advent of National Socialism [Stolper, 1940].
cient than a free market. Turner [1985] and Gallhofer and Haslam [1991] suggest that cartels depended on the German government for financial survival; the Reich's purpose in preserving the large corporations was to maintain industrial production and employment.

Gallhofer and Haslam [1991] conclude that the German government condoned conservatism and secrecy over disclosure to promote corporate stability. Banks became so powerful that they were able to compel secrecy while simultaneously earning the trust of the public. The public generally did not have an abiding faith in laissez faire economics, therefore, corporate concentration and secrecy did not generate vigorous criticism, until a time of crisis [Semler, 1938; Gallhofer and Haslam, 1991].

The Impact of Paternalism

Paternalism evolved from the Junker feudalistic perception of noblesse oblige [Stern, 1975]. Nobility conferred an obligation to behave charitably towards all people. Hegel's notion of the subordination of the individual to the State to promote the communal good may have been an evolutionary consequence of the early feudal tenet of noblesse oblige. The government responded to the social problems of industrialization by enacting paternalistic social reforms such as health insurance and work-hour improvements in an effort to repress further labor revolt [Ullmann, 1981; Gallhofer and Haslam, 1991]. Paternalism helped to justify establishment of a modified corporate welfare system in Germany.

Executives of the large corporations also exhibited the characteristic of noblesse oblige in attempts at improving worker welfare. However, Hay [1981] argues that after WWI German industrialists dropped social welfare as a positive tactic to prevent strikes and maintain production when the social programs failed to increase worker efficiency and preserve peace. Despite the limited degree of welfare reform, an ostensible paternalistic attitude enabled bankers and industrialists to avoid recrimin-
tions of greed and self-interest. The State assumed that executives and cartel directorates would exercise effective paternalistic control that would protect the public and promote the national good. Corporate stability would benefit all.

The Impact of Anti-individualism

Abercrombie et al. [1986] define three types of individualism: political liberalism, economic or classical liberalism, and individuality or Romanticism. Political liberalism implies equal rights for each person. Economic liberalism, represented by a utilitarian laissez-faire perspective, posits that market self-regulation will maximize the well being of a nation. Prussians were not egalitarian and classical liberalism never existed even as a rudimentary ideology [Stern, 1975]. The only form of individualism found in Germany was that of the Romantic which stressed individual genius, not individual rights. German individualism accepted rigid controls through bureaucracy as long as society permitted freedom of thought.

German Romantic individualism, tempered by a strong nationalistic and paternalistic tradition, enjoined everyone to work for the communal good and led to cooperative capitalism. Cooperative capitalism did not provide an environment conducive to individual competition where professional market protection through the achievement of status and credentials were requisite to professional survival.

The Impact of the Corporate/Banking Alliance On Accounting Practice

Two major institutions, stock corporations (AGs) and banks, interacted with the accounting profession in establishing accounting and audit practice. Germany’s system of cooperative capitalism sustained a climate of anti-individualism whose laws supported cartels and failed to protect individual shareholders or encourage widespread stock ownership [Gallhofer and Haslam, 1991]. The Prussian Commercial Code of 1884 ostensibly protected minority shareholders by furnishing the right to challenge accounting statements at general assembly meetings [Gallhofer and Haslam, 1991]. However, minority shareholders

---

10 For examples of thoughts on the freedom of individual genius within the Romantic Movement, see Schlegel [1968] and Schleiermacher [1977].
rarely marshalled sufficient support to meet the Code ownership percentage requirements for protests. Disclosure of financial data to protect the average investor did not become a major issue. Abel [1971] concludes that the primary intent of government regulation was to protect the creditors, not the shareholders.

*Kreditbanken*\(^{11}\) were closely linked with the AGs and served in the dual roles of creditors and majority stockholders [Neuburger, 1977]. Their main purpose before WWI was the long-term capitalization of industry. *Sparkassen*, similar to U.S. savings and loan institutions, supplied credit to individuals and small businesses [Northrop, 1938]. Banks owned the majority of corporate stock, served on corporate boards, were involved with stock market speculation and had little concern with the interests of individual minority shareholders [Northrop, 1938; Baker, 1970]. By 1933, only six banks controlled all financial institutions. Banks had a competitive advantage. They collected all necessary financial information via ownership and supervisory board representation and through their own audit companies, the *Treuhandgesellschaften* [Abel, 1971; Gallhofer and Haslam, 1991]. Therefore, they did not favor independent audits and full disclosure.

Interlocking directorates, encouraged by the government to maximize the nation’s well being, provided a mutually supportive linkage between corporations and banks. German supervisory boards, composed of management from banks and other stock corporations, were responsible for internal auditing, the presentation of reported earnings at the annual shareholders’ meeting, and approval of certain business arrangements [Gallhofer and Haslam, 1991; Dykxhoorn and Sinning, 1989a].\(^{12}\)

The institutional structure may have precluded supervisory boards from being effective monitors when corporate management was involved with fraud, embezzlement and deceptive balance sheets. Interlocking directories meant managers of one company served on supervisory boards of other companies. If

---

\(^{11}\)Although the main purpose of the *Kreditbanken* was the long-term capitalization of industry, they performed a variety of functions including those of stock broker, underwriter, and supplier of short-term credit [Neuburger, 1977].

\(^{12}\)See Dykxhoorn and Sinning [1989a] for a more detailed discussion of German corporate directorates. The authors translated H. Gottschalk, *Die Lehren aus den Aktienkandalen der Nachkriegszeit*, (Frankfurt, 1934) for their analysis.
the boards, who selected management, exposed fraud, then their judgement would have been called into question. Thus, directors rarely challenged management directly [Dykxhoorn and Sinning, 1989a].

Gallhofer and Haslam [1991] explain that corporate and banking institutions actively promoted secret reserves and conservatism for stability. Corporate management, supported by national protectionism, promoted conservative accounting. Numerous reasons existed for creating secret reserves, i.e., the limitation of profit distributions to minority shareholders, protection of creditors (the Kreditbanken), independence from the Reichsbank credit system, and the hiding of WWI profits obtained from government contract work [Gallhofer and Haslam, 1991; Northrop, 1938; Stolper, 1940]. However, Abel [1971] asserts that protection of creditors remained the dominate reason for government permissiveness on secrecy regarding capital accumulation until World War II. Secret reserves solidified and amplified the position and power of one group, the banks (Kreditbanken).

Voss [1933] explains that while secret reserves would preclude an auditor from conferring a certificate that the accounts were correct, they would not prevent the examiner from confirming that the accounts agree with the legal requirements. Secret reserves“... are in principle allowed by the law” [Voss, 1933, p. 532]. Gallhofer and Haslam [1991] agree that the German government not only condoned, but encouraged secrecy to ensure capital accumulation as well as confidentiality. Forrester [1984] implies that companies still employ secret reserves in financial reporting, compelling analysts to adjust published German profits upward for these surpluses.

The complex interrelationships between banks and AGs precluded the use of an audit as an effective monitoring device. The
failure of one institution would impact a host of related companies; thus, disclosure of fraud or ineptitude might result in a chain reaction that would threaten the whole economic system. Bank speculation was flagrant enough in 1927 for the Reichsbank to threaten credit restriction [Northrop, 1938]. The warning went unheeded as both corporations and banks obtained foreign funding. When the foreign supply of credit ceased with the growth of National Socialism, economic collapse occurred [Schmidt, 1934].

Only the failure of the corporate/banking structure to function effectively for the national good brought state intervention resulting in the 1931 Presidential Decree and ensuing amendment to the Company Law requiring audits. The citizenry looked to nationalism and a planned economy for a cure to economic hardship. The public no longer accepted corporate/banking paternalistic expertise and anti-individualism as criteria to maintain the traditional situation of conservation and secrecy. The paper next discusses the dominant accountant groups involved in the emergence of the Presidential Decree and the following legislation.

GROUPS INVOLVED WITH THE PRESIDENTIAL DECREE OF 1931

Following Porter's methodology, the analysis highlights the interaction between primary groups involved with the formation of the Company Law that required mandatory audits. First, this section identifies three main accounting groups, academics, the book examiners and audit companies. Then the analysis explains how the three groups interacted with the political sector in drafting the Company Law that established the new Wirtschaftsprüfer profession.

The Evolution of the Book Examiners

The auditing profession evolved through a slow and controversial process. Both Dykxhoorn and Sinning (1989a) and Buchholz (1939a) discuss the emergence of auditors. The book examiner (vereidigte Bücherrevisor) originated through the German court system as an expert witness and trustee in liquidation disputes. As with the development of Company Law, Prussia was the leader in accounting and auditing regulation. Länder (province) courts originally swore in auditors, but by
1900 the Chambers of Commerce assumed the responsibility for swearing in and appointing book examiners, although they maintained varying admission criteria [van Dien, 1930; Gallhofer and Haslam, 1991].

The Prussians began regulating book auditors as Certified Book Examiners (CBEs) in 1926 [Dykxhoorn and Sinning, 1989a]. An examination served as the means of certification and admission to practice. The Prussian Chamber of Commerce law, which introduced rules for the examination and admission of auditors, served as the regulatory body. Chambers in other Länder soon followed the Prussian example [Buchholz, 1939a].

Schourp [1930] and van Dien [1930] assert that accounting groups developed numerous associations to address professional interests.\(^\text{15}\) The Verband deutscher Bücherrevisoren (V.D.B.), representing certified (sworn-in) auditors, originated in 1896 and became the major accounting organization, besides audit and trust firms, to supply practitioners [Schourp, 1930; Gallhofer and Haslam, 1991; Buchholz, 1939a]. Besides requiring that the applicant be certified by a chamber of commerce or other official authority, the V.D.B. required that the potential member pass an examination given either through the certification process, the Leipzig Commerce College or by the V.D.B. itself [van Dien, 1930; Schourp, 1930].

**Audit and Trust Companies**

The most powerful group of accountants that competed with the book examiners for control of the profession were the bank auditors. Bank auditors became an effective force through large audit and trust firms, the Treuhandgesellschaften. Banks first created the companies in the beginning of the twentieth century to obtain financial information for credit decisions and for monitoring the operations of their obligees. Dykxhoorn and Sinning [1989a] and Schourp [1930] cite as an example the founding by the Deutsche Bank of the Deutsche Treuhandgesellschaft, a public accounting firm that is still in existence today.

Buchholz [1939a] adds that with growing industrialization and increasing demands for audits, joint-stock audit firms de-

---

\(^{15}\) Locke [1984], however, maintains that the early German accounting profession had no powerful cohesive associations, as did the British, to regulate the occupation. German organizations were more like collegial brotherhoods whose members possessed similar occupational and educational backgrounds.
veloped that were independent from the banks. The book examiners (vereidigte Bücherrevisoren), perhaps a remnant of German liberalism, urged the development of an auditing profession independent from other businesses, i.e., the banks [Dykxhoorn and Sinning, 1989a]. The predominant universals of protective nationalism and paternalism, inherent in German cooperative capitalism, however, supported the bank/cartel relationship and the existence of the bank-controlled audit firms. While van Dien [1930] asserts that bank influence on auditors had ended by the late 1920s, Forrester [1984] concludes that the banks never lost control, even after WWII.

The Treuhandgesellschaften also founded an organization, the Verband Deutscher Treuhand-und Revisionsgesellschaften (V.D.T.R.), in 1919 to promote mutual interests of bank audit firms. By 1929, this group consisted of approximately 80 audit and trust firms [van Dien, 1930, p. 16].

The Role of German Academics in the Accounting Profession

Academics influenced both book examiners and bank auditors in molding the German accounting profession. Locke [1984, p. 215] concludes that academics "were the driving force behind the discipline." They developed accounting theory, devised curricula, instructed the practitioners and were influential in the auditing profession. Academics joined both the V.D.B. and the V.D.T.R.16

Locke [1984] concludes that in Europe the greatest professional impact on business management occurred in Germany, and mainly through the accounting profession. Abel [1971] notes that accounting was included in the discipline of business economics (Betriebswirtschaftslehre). Business management and accountants did not receive their education at universities but at commerce colleges, which initially taught a form of cameralist administration. The first commercial college was established in 1898 at Leipzig and the second in Cologne in 1901 [Locke, 1984]. Other colleges became established in major German cities from 1901 to 1919 [Forrester, 1977].

16Van Dien [1930] notes that accountants frequently belonged to more than one organization and that most auditors who were members in local associations also belonged to the V.D.B. These smaller organizations probably were not effective in instituting changes within the profession.
Leading professionals, such as Schmalenbach and Bünger, perceived of college as the means to standardize knowledge and to achieve status through public recognition as a technical expert [Schourp, 1930; Voss, 1930]. Schourp [1930] implied that practitioners who received no accounting training, except through apprenticeship, were considered inferior to those with specialized academic backgrounds.

By 1926, standardization became legitimized when legislation instituted a uniform exam for CBES which was graded by a board that consisted of at least two members of the V.D.B. [van Dien, 1930; Schourp, 1930]. Although a college education was never a condition for admission to the profession per se, an aspirant practically required a college education to pass the exam.

Accounting academics both exemplified and sustained German ideology. Abercrombie et al. [1986] argue that education serves as a primary means of introducing and maintaining a dominant philosophy of a nation. Business economics, emerging from the discipline of cameralist administration in the universities, sanctioned nationalistic protectionism in industry. The accounting emphasis on expertise reflected German Romantic individualism that stressed the human intellect. The existence of business economics at the German colleges, in particular the specialized accounting program at Leipzig, and German societal regard for professional expertise were primary factors in enabling the accounting profession to be so influential in industry.

The Influence of the Three Groups on the 1931 Decree

Academics, book examiners and bank auditors interacted through conflict, then compromise, to establish the new exclusive tier, the Wirtschaftsprüfer. The newly approved auditors were those who had a power base through the V.D.B. and the Treuhandgesellschaften. These two groups already had demonstrated proficiency and had a large share of the audit clients.

While most factions of the profession united to champion standardized educational requirements among the Länder

17Note that the U.S. certification exam first appeared in 1896 just prior to the turn of the twentieth century, but was not uniform across all states until 1952 [Carey, 1969].

18Academics were also prevalent in the new profession. Government statistics as of June 30, 1938, report that out of 1126 Wirtschaftsprüfer 568 (50.4%) were academicians [Buchholz, 1939a, p. 122].
hostility between the CBEs and the bank-controlled audit companies hampered a consolidated effort to promote mandatory audits [Dykxhoorn and Sinning, 1989a]. Dykxhoorn and Sinning [1989a] explain that while the CBEs and the independent Treuhandgesellschaften, both desiring to expand their list of clients, supported mandatory audits for all stock companies, the Kreditbanken opposed the compulsory examinations. Bankers, who frequently were also shareholders and directors of major corporations, feared losing control of management through disclosure and external audits.

By 1929, however, the V.D.B. and the bank auditors had compromised sufficiently to propose a bill that would merge the two audit groups into one profession, that of the "Public Accountant and Trustee" (Revisor und Treuhänder) [van Dien, 1930], later to become the Wirtschaftsprüfer. Despite the attempt in the 1920s at self-regulation, van Dien [1930] and Grossmann [1930], recognizing professional internal conflict, predicted that the German legislature would never adopt the Bill. The drafters themselves were not completely satisfied with the results and many Länder still opposed a unified profession. Most of the admission and professional regulations, however, included in the newly proposed bill were the same as those finally instituted in the 1931 Presidential Decree.

Although reflective of an increasing German propensity towards nationalism, the 1931 Decree and ensuing legislation also provided evidence of professionally advocated self-regulation that employed federal licensing and a dual system of supervision. The law divided the responsibility for monitoring the profession between the government Chambers of Commerce and a new professional organization, the Institut der Wirtschaftsprüfer (IdW). The Chambers appointed Wirtschaftsprüfer and forwarded complaints to admissions boards that investigated and tried cases [Voss, 1933]. Later the WP Chamber of Auditors (Wirtschaftsprüferkammer) became the public sector organization responsible for oversight of and disciplinary action against

---

19 Van Dien [1930] notes that the original draft was in existence as early as 1926.

20 The profession, not waiting for federal enactment, founded a national association in 1930, the National Institute of Auditing and Trustee Work [Forrester, 1977 and Lück, 1984]. The national association established in 1930 was the predecessor to the IdW.
members of the profession [Dykxhoorn and Sinning, 1981]. The IdW represented the Wirtschaftsprüfer on matters of standard setting, self-regulation and public accounting affairs [Voss, 1933]. Buchholz [1939a, p. 117] referred to the IdW as the "... overall professional check." The monitoring function of the two organizations became practically inseparable and indiscernible. As Dykxhoorn and Sinning [1981] explain, the affiliation between the IdW and the Wirtschaftsprüferkammer, is extremely close even today. Both main offices are housed in the same building in Düsseldorf.

By 1937, an amended Company Law officially ranked the CBEs at a middle tier, below the prestigious Wirtschaftsprüfer. While both groups competed for general accounting services, only the elite Wirtschaftsprüfer could perform the mandatory audits of stock corporations after implementation of the 1931 Company Law [Buchholz, 1939a; Voss, 1933]. In 1933, the National Socialist Federal Rights Union (NSRB) dissolved the V.D.B. A newly formed Institut der Wirtschaftsprüfer had replaced the V.D.B. as the representative organization of accountants.

Although German accountants emphasized technical expertise as a means of fostering objectivity in financial reporting, they lacked the organizational cohesiveness to promote uniformity in accounting principles [Voss, 1933; Singer, 1943]. The crusade for uniform cost accounting to enhance national productivity never carried over extensively to financial reporting [Abel, 1971; Singer, 1943]. Lack of widespread corporate ownership and government confidence in the corporate/banking alliance precluded national interest in standardization of financial accounting. The 1931 Company Law was generally vague regarding implementation of accounting principles such as "reasonable" depreciation and "fair" value of assets [Voss, 1933]. Additionally, few auditing rules existed. Even after the 1931 Presidential Decree establishing the WP, the profession’s representative organization, the IdW, provided little guidance on the issuance of audit reports or on conducting examinations [Voss, 1933; Niehus, 1969].

The originally drafted bill demonstrated that, despite internal conflicts, the auditing profession, not the German government bureaucracy, initiated professional regulation. Buchholz [1939b] and Schourp [1930] depicted the profession as independent (auditors were never civil servants), but accepting of the
State through national regulation. Only the lack of cohesiveness among the book examiners and the bank auditors, and a government preoccupied with overwhelming economic issues had delayed legislation until the economic crises of the early 1930s. While disclosure was more defined than under previous codes, protectionism and conservatism were still in evidence. The Government still operating under a penchant for secrecy continued to condone secret reserves [Semler, 1938].

The Permeation of Nationalism, Paternalism and Anti-individualism in the German Accounting Profession

German capitalism might be best described as cooperative capitalism. The private sector produced the goods and services while the State condoned consolidation to ensure economic stability and the nation’s well being. Germans did not eulogize market competition, which they regarded as inefficient and destructive, engendering conflict not consensus. German nationalism created a climate conducive to cartelization and the use of accounting as a tool to promote economic stability and to enable those who controlled cartels to accumulate capital.

German paternalism made acceptance of cartels possible and industrialists’ and bankers’ claims, that they subordinated their own interests to society’s, plausible. The cameralist tradition, exhibited in the commerce colleges, reflected the spirit of noblesse oblige. Nationalism, paternalism and Romantic individualism enjoined Germans to work for the common good; resulting in cooperative capitalism that formed an ideological framework under which the institutions of cartels, banks and the accounting profession operated. A harmony of interests between the Kreditbanken and the cartels and a lack of concern for individual property rights, precluded a concern for minority shareholders, financial disclosure, and independent monitoring.

Education reinforced the concept of paternalism and Romantic individualism, by permitting individuals to develop their minds and talents to improve society through technical expertise. The German accounting profession promoted expertise as its predominate attribute. The introduction of business economics, Betriebswirtschaftslehre, into the commercial colleges contributed to the standardization of accounting education, and empowered the accounting profession to assume the role of “expert” in the business community. Accounting served as the tool to gauge efficiency. Despite emphasizing technical expertise and
standardized rules as goals in financial accounting, however, no uniform professional auditing standards existed in Germany until the 1930s.

By the 1930s, the German accounting profession was just beginning to emerge from a nascent state. Practitioners sought to gain professional status and influence through enhanced education and federal licensing. Evolution towards professional maturity was exemplified by the fact that by the late 1920s, German accountants had drafted legislation not only mandating audits, but establishing an elite national profession. The lack of cohesiveness, however, commonly found in the early stages of group evolution, prevented the German profession from uniting to achieve legislative recognition until the economic crises of the 1930s. Nationalism, by then more completely entrenched in German politics, became evident in federal licensing and by 1931 resulted in a unified profession under the IdW.

CONCLUSION

The emergence of the German accounting profession shows that the cultural attributes described by Abercrombie et al. [1986] provide explanations of political actions. The lack of competitive market forces per se does not imply a corresponding lack of demand for audits or the absence of an accounting profession. Without widespread stock ownership and a free market to allocate resources, monitoring of management operations can be provided by other methods. In the case of Germany, bank auditors furnished this mechanism until economic crises proved internal examinations suspect.

This study concurs with Abel's [1971] conclusion that business reforms evolve only if economic needs arise. Economic crisis, not the nascent accounting profession, resulted in legislative action mandating audits. The emerging accounting profession was not capable of successfully confronting the existent corporate/banking alliance to significantly impact financial reporting or the demand for audits.

The role of the German banks, not only as creditors, shareholders and speculators, but as interlocking directors of cartels, meant the economic collapse of one institution, the banks, affected the other, the cartels. The German government could no longer continue a hands-off approach. Secrecy no longer functioned to maintain stability but had resulted in financial collapse. Independent monitoring became mandatory to protect
the nation, but Germany had to look to the expertise of the public accounting profession for the watch-dog mechanism, now acquiescent towards national regulation. The economic crises of the 1930s precipitated federal legislation, but the propensity in Germany to focus on communality made national control acceptable to the members of the accounting profession.

REFERENCES


---


---


---


Niehus, Rudolph J., “Generally Accepted Auditing Principles in Germany”, The International Journal, of Accounting Education and Research (Spring 1969) 113-124.


HISTORICAL INSTANCES OF INNOVATIVE ACCOUNTING PRACTICES IN THE CHINESE DYNASTIES AND BEYOND

Abstract: The purpose of this paper is to explore special features of the diffusion of ideas and, subsequently, of innovative practices in Chinese accounting and then to examine early instances of the introduction of auditing. Three general periods of accounting innovation are identified which coincide with the establishment of certain dynasties. Some conclusions are then drawn about the main reasons underlying accounting changes occurred during this long period of time. Also examined are relationships between the long-term evolutionary conditions for the growth of Chinese accounting. Possible phases of development in the present of generally accepted practices of financial accounting and reporting are traced to opportunities for innovation which have arisen in the past.

Chinese accounting and auditing has had a long history. Historical records indicate approximately 6,000 years ago the people of China were numerically literate. Calculations, memoranda and records (notched on wood) have shown aspects of the embryonic stage of Chinese accounting [Feng, 1933]. During its ancient period of development, Chinese accounting reached a peak of sophistication in the Western Zhou Dynasty (1100-771 B.C.) [Fu, 1971]. At that time, accounting practice became more advanced than elsewhere in the world.

During the long centuries of feudal society after the Western Zhou Dynasty, accounting in China experienced only a slow development. However, there were some advances. For example, there was use of the Bi-Bu system—an auditing system developed in the Tang Dynasty (618-907 A.D.) — and also invention of the elaborate government accounting system of the Song Dy-
nasty (960-1279 A.D.) [Guo, 1988]. These instances can be regarded as significant achievements in Chinese accounting and denote contributions that the Chinese have made to the world. Chinese accounting development, as a part of the overall history of accounting development, is significant. It deserves close attention by theorists, historians, researchers and, particularly, practitioners of the accounting discipline. The last mentioned group can benefit greatly through a knowledge of the evolution of practices over long periods of time [Hopwood, 1987] and the relation of such a history to both developments in other disciplines and to present trends in accounting practice.

A MODEL OF GOVERNMENT SPONSORED ACCOUNTING IN THE WESTERN ZHOU DYNASTY (1100-771 B.C.)

Chinese accounting formally originated in the Western Zhou Dynasty.¹ According to the Rites of Zhou² “the controller general, who administers the country in accordance with certain laws and principles, must pay heed to accounting” [Zhou, 1966]. This reference could be the earliest known mention of accounting in Chinese literature. The Western Zhou was the third dynasty of China and it was much more fully developed as a civilization than the earlier dynasties of Xia (2000-1500 B.C.) and Shang (1500-1100 B.C.). The Western Zhou achievements are highly regarded by historians [Hsu and Linduff, 1985] and the feudal economic institutions established then were to remain

¹Some scholars hold the view that Chinese accounting was originated in the Xia Dynasty (2000-1500 B.C.). China was transformed from a primitive state to a slave society in the Xia Dynasty and this slave society lasted almost 1,000 years, covering the Xia and Shang Dynasties, for example: according to Maqian Si, Book of the Record of History, Taipei. Their conclusions were based on events in the Xia Dynasty, where people started to record economic activities. The authors argue that such recording had not become an independent function because of social and economic conditions in the Xia Dynasty. Therefore, the authors agree that Chinese accounting formally originated in the Western Zhou Dynasty. This opinion is in line with the idea that Western Zhou was much more fully developed as a civilization than the earlier dynasties of Xia and Shang.

²Rites of Zhou is a book describing government posts, official duties, and the structure of Zhou governmental administration. Although the author is unknown, the ideas in the book are attributed to the King of Zhou by many scholars. Rites of Zhou is highly valued by scholars both in China and abroad. For example, see Friedrich Hirch, The Ancient History of China to the End of the Zhou Dynasty, New York: Columbia University Press, 1908. The author writes: “As an educator of the nation, Rites of Zhou has probably not had its like among the literatures of the world, even excepting the Bible.”
influential. Achievements of the Western Zhou Dynasty included the following developments.

(a) Agriculture
Agriculture implements were improved and people started to use simple irrigation systems. Also, land fertilization was introduced at this time. The role of fishing and hunting in the society decreased as the role of agriculture was increased.

(b) Handicraft and technology
Production of china, jewelry and bronzeware grew quickly. The use of iron, which was of revolutionary importance to the development of human society, also appeared during the Western Zhou Dynasty.

(c) The economic society and commerce
There was a systematic hierarchy of fief and sub-fief holders. Each lord's land was divided into (1) his personal land and (2) that which was parcelled out as sub-fiefs. The whole system was organized as a complex family, each lord owing allegiance, tribute and service to the King, being the family's head. The King periodically was to check on the lords and punish them for various offences. There was also recognition of the need for regular trade with allied states.

(d) Literature and philosophy
In the Western Zhou, many philosophers arose including Mencius, Lao Tse and Confucius. Their influence is known to have had an enduring impact upon Chinese civilization.

Many historians have explored the historical and cultural foundations of accounting (Jones, 1989). Among them DR Scott (1931) and A.C. Littleton (1933) were pioneers. Scott tried to classify the sequence of historical events into cultural phases or patterns of a society's development and to find a relationship between this framework and the growth in importance of accounting functions. He stated:

There are two schools of thought about the start of the long Chinese feudal system, one holding that it began in the Western Zhou as early as about 1100 B.C., (see Coulbern, R., Feudalism in History, Princeton: Princeton University Press, 1956); the other believes that the Qin Dynasty, which began in 221 B.C., represents its beginning, (see Guo, Daoyang, The History of Accounting Development, Beijing: Chinese Broadcasting and Television University Press, 1986).
The designed orientation of accounts has proved to be obtainable only through an interpretation of cultural organization which places accounts at the very center or pivotal point of that (p. vi).

In Accounting Evolution to 1900, Littleton asserted his view of the function of historical analysis in accounting research and identified an evolutionary element of accounting development with its historical environment or culture:

Accounting originated in known circumstances in response to known needs; it has evolved and grown in harmony with its surroundings; its changes can be explained in terms of forces current at the time (p. 361).

The accounting developments in the Western Zhou Dynasty were significant because of their support of economic, cultural and technological achievements. Associated changes in accounting will now be classified and examined under (1) government accounting, (2) government revenue and expenditure accounts, (3) bookkeeping and reporting, and (4) auditing.

Government Accounting System

A fairly complete government accounting system was formed. Chatfield (1977) writes:

Perhaps more than any other pre-Christian nation, the Chinese reduced their public finance to a civil service routine in which accounting was used chiefly to evaluate the success of government programs and the efficiency of personnel (p. 8).

In the Western Zhou government structure (Table 1) there were, under the control of the King, six officials: the Official of Heaven, the Official of Spring, the Official of Summer, the Official of Autumn, the Official of Winter, and the Official of Earth. In modern terms, these six officials would be called the Prime Minister, the Minister for Religion, the Minister for Crime, the Minister for War, the Minister for Labor, and the Minister for Education. The Official of Heaven was appointed by the King to be in charge of two main areas: the management of properties; and financial management and accounting. Under the Official of Heaven, Xiao-Zai (the Stock Controller) was responsible for national stock; Si-Kua (the Controller General) was directly responsible for financial management, government revenue collection and expenditure. In this domain, four divisions were es-
established: Si-Shu (the Official Superintendent of Records), Zhi-Bi (the Official of Revenue), Zhi-Shui (the Official of Disbursement) and Zhi-Nei (the Official of Surplus). The last mentioned was in charge of the calculation of the government surplus. All reports were available for scrutiny by Zai-Fu, an auditor independent of accounting.

**Government Revenue and Expenditure Accounts**

As with other countries in the world during this period, the Western Zhou government account titles usually referred to revenues and/or expenditures [Zhang, 1939]. According to Fu [1971], “five kinds of resources were set aside . . . these funds may be classified as general revenue funds, special revenue funds, welfare funds, relief funds, and reserve funds” (p. 41). General revenues and special revenues, each of which had nine sub-items, comprised nine forms of taxes and nine tributes. The nine forms of taxes were levied on different regions and items; and the nine tributes were those which noblemen and other leaders gave to the King annually under nine categories. Financial expenditure consisted of nine streams or classifications. Nine was regarded as a lucky number (there were, for example, considered to be nine types of occupation and, indeed, nine heavens). Tables 2 and 3 clarify the nature of revenues and expenditures.

It is interesting to note that: (a) the nine forms of taxes were mainly used for government spending and the nine tributes went mainly to government reserves; (b) under general revenue and expenditure, each revenue source was reserved for a specific expenditure, e.g., land tax from the region within 400-500 Lis from the capital city was particularly used for worship and sacrifice (it was a special purpose fund).

**Bookkeeping and Financial Reports**

The single entry bookkeeping method was first used in government accounting. Before the Western Zhou period, the account book took the form of a day book. In the Western Zhou Dynasty, the account books had two forms: Cao Liu and Zong Qing. Cao Liu was used to record transactions roughly as they

---

4 In the Western Zhou for the first time, ancient China was divided into six regions according to their distances from the capital city.

5 In China, initiatives in government accounting occurred earlier than for non-government accounting.
Table 1

Diagram of the Western Zhou Government Accounting Structure

King

the Official of Spring

the Official of Summer

the Official of Autumn

the Official of Earth

Si-Shu (the Official of Superintendent of Records)

the Official of Heaven

Xiao-Zai (the Stock Controller)

Si-Kua (the Controller General)

Zhi-Nui (the Official of Surplus)

Zhi-Bu (the Official of Revenue)

Zhi-Shui (the Official of Revenue)

Zhi-Bu (the Official of Revenue)

Zhi-Shui (the Official of Revenue)

Zai-Fu (the Auditor)
### Table 2

**Revenue**

<table>
<thead>
<tr>
<th>Nine Forms of Taxes (General Revenue)</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Land tax from the region of capital city</td>
</tr>
<tr>
<td></td>
<td>2. Land tax from the region within 100 Li(^6) from capital city</td>
</tr>
<tr>
<td></td>
<td>3. Land tax from the region within 100 - 200 Li from capital city</td>
</tr>
<tr>
<td></td>
<td>4. Land tax from the region within 200 - 300 Li from capital city</td>
</tr>
<tr>
<td></td>
<td>5. Land tax from the region within 300 - 400 Li from capital city</td>
</tr>
<tr>
<td></td>
<td>6. Land tax from the region within 400 - 500 Li from capital city</td>
</tr>
<tr>
<td></td>
<td>7. Revenues from commerce and market taxes</td>
</tr>
<tr>
<td></td>
<td>8. Taxes on forestry, fisheries and miscellanies</td>
</tr>
<tr>
<td></td>
<td>9. Proceeds from sales of government surplus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nine tributes (special revenue)</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Revenues from animal and wine tributes</td>
</tr>
<tr>
<td></td>
<td>2. Revenues from silk, cloth tributes, etc.</td>
</tr>
<tr>
<td></td>
<td>3. Revenues from metal, musical stones, red paint tributes, etc.</td>
</tr>
<tr>
<td></td>
<td>4. Revenues from embroidered garment tributes</td>
</tr>
<tr>
<td></td>
<td>5. Revenues from timbers tributes, etc.</td>
</tr>
<tr>
<td></td>
<td>6. Revenues from pears, gold, and other precious materials tributes</td>
</tr>
<tr>
<td></td>
<td>7. Revenue from material used for ceremonial tributes</td>
</tr>
<tr>
<td></td>
<td>8. Revenue from feather, hair tributes, etc.</td>
</tr>
<tr>
<td></td>
<td>9. Revenue from overseas luxury tributes</td>
</tr>
</tbody>
</table>

\(^6\)Li is a Chinese distance measurement. One Li equals about half a kilometre.
<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diplomats and state guests</td>
<td>1. Land tax from the region of the capital city</td>
</tr>
<tr>
<td>2. Military expenditures</td>
<td>2. Land tax from the region within 100 Li from capital</td>
</tr>
<tr>
<td>3. Public construction</td>
<td>3. Land tax from the region within 100 - 200 Li from capital city</td>
</tr>
<tr>
<td>4. Salaries and pensions</td>
<td>4. Land tax from the region within 200 - 300 Li from capital city</td>
</tr>
<tr>
<td>5. Ceremonial presents to priests and guests</td>
<td>5. Land tax from the region within 300 - 400 Li from capital city</td>
</tr>
<tr>
<td>6. Worship and sacrifice</td>
<td>6. Land tax from the region within 400 - 500 Li from capital city</td>
</tr>
<tr>
<td>7. Maintenance of royal family</td>
<td>7. Revenues from commerce and market taxes</td>
</tr>
<tr>
<td>8. State funerals and emergencies</td>
<td>8. Taxes on forestry, fisheries and miscellanies</td>
</tr>
<tr>
<td>9. Complimentary gifts to King’s relatives and</td>
<td>9. Proceeds from sales of government surplus</td>
</tr>
<tr>
<td>feudal princes</td>
<td></td>
</tr>
</tbody>
</table>
occurred, like a day book. Entries were transferred to Zong Qing every ten days or monthly. In non-government accounting, the accounts were in persons' names; while in government accounting, which was more advanced than non-government accounting at that time, the accounts were usually named after financial revenue and expenditure items. The Chinese characters for "Ru" (input) and "Chu" (output) were used as recording symbols. Because of the lack of a single stable monetary unit, entries in the two account books were quite descriptive and the inventories were identified by their weight and size instead of currency value. To check the balance, the Three Column Method was used. The formula was:

New Receipt - Amount Paid Out = Balance

It is notable that, at this time, financial reporting was required by the King. Four kinds of accounting reports were prepared throughout the budget cycle. These were called Ri-Cheng (ten day report or Xun report), Yue-Yao (monthly report), Shui-Kua (annual report) and Da-Ji (triennial report). The Xun reports were descriptive, while the monthly and yearly reports were summaries [Guo, 1986]. Every government agency was required to prepare a yearly report on its accomplishments. These reports were finally summarized by the Si-Kui (Controller General) for the King. The King then decided who should be punished or rewarded, his decision to be based on those reports. This system was further developed into the Shangji system, a reporting and checking system in the Han Dynasty (206 B.C.—A.D. 221) which was then to be used for more than 400 years during the ancient period of the Chinese dynasties.

Government Auditing

There was also a special official, called Zai-Fu, who was in charge of checking all revenues and expenditures (see Table 1). This was the earliest form of auditing in China [Lau and Yang, 1991]. Usually Xun reports were audited on a random basis of selection, while the monthly and yearly reports were audited in detail within the accounting department, a kind of internal auditing. People, at that time, began to appreciate the importance of independent auditing [Lu, 1936]. Although the reports were

7The Zhou dynasty used the lunar calendar, which had been established in the Shang Dynasty, and which divided the year into twelve months of twenty-nine or thirty days each, and each month into three ten-day periods called Xun.
inspected by the Controller General, the Zai-Fu was an official who was independent from the accounting department; and although his rank was lower than that of the controller General, he could report directly to the Official of Heaven or even to the King. This type of auditing had a profound long-term influence on Chinese auditing development. From the Western Zhou dynasty onwards, several recording systems were established under a variety of dynasties, with different auditing systems being developed. For example, the famous Shang Ji systems of reporting and checking was developed in the Han dynasty.

**THE TREASURY SYSTEM IN THE QIN AND HAN DYNASTIES (221 B.C.—221 A.D.): THE SHANGJI SYSTEM OF REPORTING AND CHECKING; AND NON-GOVERNMENT ACCOUNTING IN THE HAN DYNASTY**

The Financial and Treasury System in the Qin and Han Dynasties

From the Qin Dynasty (221-206 B.C.) to the Han Dynasty (206 B.C.—221 A.D.), China experienced unification after a long period of disunity [MacGawan, 1973]. This is historically part of the Spring and Autumn and Warring States Period (770 B.C.—221 A.D.). In the Han Dynasty, Chinese civilization advanced significantly.

Under the emperor of the Qin, the central feudal system included a Zha-Xiang (Premier) to help the Emperor with national affairs; a Yu-Shi-Da-Fu (Vice-Premier and Inspector) to be in charge of government administration and inspection; and a Da-Wei (Military General) to be in charge of military affairs. Under these three officials (Gong), there were nine ministers (Qin). Historically this was called the Three Gong and Nine Qin system. Among the nine ministers, Zhi-Su-Nei-Shi (Government Financial Minister) and Shao-Fu (Royal Financial Minister) were responsible for governmental finances and royal financial affairs respectively. This was the first time in Chinese history that these duties were to be separated. Under Zhi-Su-Nei-Shi, there were Tai-Cang-Ling (Superintendent of the Government Granaries), Da-Nei (Cashier) in charge of financial expenditure, and Ji (Accountant).

The Han Dynasty's financial system was based on that of the Qin Dynasty but was improved to some extent [Zhang, 8See Table 1. The structure of the Western Zhou Dynasty.
1939]. Because tax was now the major source of governmental funds and royal revenues, the tax levy was increased. There were four kinds of tax: land, artisan-merchant, capitation (a tax levied on all males, ages 15 to 56), and miscellaneous [Chou, 1974]. The government's accounting system at that time was based on government revenues and expenditures.

**Standard Characters, Currency, Weights and Measures of the Qin Dynasty**

Before the Qin Dynasty, the competing powers had engaged in political and military quarrels and thus there existed a lack of standardized weights and measures and written languages. The great contributions which the Emperor of the Qin Dynasty made were cultural and technological advances and the unification of the nation [Needham, 1954]. Unification fostered the use of standardized Chinese characters, currency, and a system of weights and measures. Also, the Emperor promoted the use of standardized accounts throughout the nation.

**Invention of Paper and the Abacus**

By the end of the Eastern Han Dynasty (25-220 A.D.), paper had been invented and was being used to keep accounts. In ancient times, the account books had been called "Bushu." Before the invention of the paper, Bushu were made of bamboo slips (see Table 4) or silk pieces. The evolution from bamboo slips to the use of paper marked a great development in human achievement. Also, it led to a breakthrough in the development of accounting. In this same period, the abacus was used. One historical record described the early abacus as follows:

An abacus was divided into two parts. The upper part comprised one-third of the abacus, while the lower part comprised two-thirds. Each abacus ball could be moved within a certain space, and one fen space (equal to about 3 centimetres) was kept in the middle between the left and right in order to determine the numerical space [Xu Yue, 1987].

---

9The Great Wall was completed under the Qin Dynasty by constructing new walls and connecting existing walls.

10According to historical records, paper was invented by Lun Ce. This is also one of the four Chinese ancient inventions, see Kwangchih Chang, *7000 years of Chinese Civilisation*, Milan: Silvana Editoriale, 1983.
A typical Chinese abacus contains several rods mounted in a frame, the upper part of each rod has two beads each representing 5, and lower part has 5 beads each representing 1.

Just as the use of computers has transformed accounting in recent decades, so the use of the abacus during nearly two thousand years after the Han Dynasty was a crucial element in the development of accounting from ancient times to the modern era in China. The use of the abacus facilitated calculations and thus the ensuing preparation of annual, quarterly and monthly reports. The abacus is still widely used in China and some scholars believe that computations of plus and minus can compare with modern computing [Yang, 1988]. It is clear that the invention of paper and the abacus created unprecedented change in both recording and calculation. These two inventions were of great importance to the development of accounting in China.

**The Shangji System of Reporting and Checking in the Han Dynasty and the Shangji Law**

In the Han Dynasty, the Shangji reporting and checking system was used regularly. It consisted of a special conference held by Yu-Shi-Da-Fu (Vice Premier and Inspector) which the Emperor attended. At the conference, officials from different regions presented their reports and could be asked questions. In this way, the officials' work could be judged; and might be rewarded or punished accordingly.

The Shangji system was so important that it was later written into a law called Shangji Law\(^\text{11}\) which listed penalties in accordance with the accounting and reporting records. It had a significant impact on the establishment of accounting and auditing law at that time and in later periods. From the Han Dynasty, this system was carried on by almost every dynasty and was improved greatly over the years through practice.

**Non-government Accounting in the Han Dynasty**

China's non-government accounting originated from the development of handicrafts and commerce. According to historical records, even in the Shang Dynasty (1500-1000 B.C.) there were some kinds of commercial activity such as the long distance

\(^{11}\text{He, Xiao, in the Han Dynasty, wrote Jiu Zhan Law in which one part deals with the Shangji Law.}\)
transportation and trading of luxury goods, salt and other basics. Merchants needed to calculate their profit or loss. This was the initial period of non-government accounting. During the Han Dynasty a national market was opened and commodities exchanges and currency usage were developed rapidly [Kirby, 1953]. Salt and iron dealers often became as wealthy as the nobility. Usually transactions were very large, so the dealers began to employ people as part-time or full-time bookkeepers.

The Chinese characters for *Shou* (Receipt) and *Fu* (Disbursement) were used as the recording symbols in non-government accounting, while *Ru* (Input) and *Chu* (Output) were still used in government accounting, as in the Zhou Dynasty. At that time, people started to pay more attention to the calculation of profit and loss. There were special account books used to record goods purchases, goods sales, expenditure and profit and loss, so that the total of purchase, sales and expenditure could be obtained. Because of the complexity of business, merchants also were beginning to record receivables and payables more clearly [Wei, 1984].
THE USE OF THE FOUR COLUMN METHOD
AND THE AUDITING SYSTEM IN THE
TANG AND SONG DYNASTIES
(618-1279 A.D.)

The Financial and Treasury System
in the Tang and Song Dynasties

Under the Tang (618-707 A.D.), central government’s powers consisted of three super ministries: Shan-Shu-Shen (the Administration Super-ministry), Zhong-Shu-Shen (the Decision Super-ministry) and Men-Xia-Shen (the Censorate Super-ministry). These were set up to help the Emperor handle national affairs. Generally, national affairs were discussed by the Censorate Super-ministry, then sent to the Decision Super-ministry for ratification. Finally, Administration Super-ministry enforced these national practices. Under the Administration Super-ministry, there were six Ministries: Li-Bu (the Personnel Ministry), Hu-Bu (the Statistics and Finance Ministry), Li-Bu (the Foreign Ministry), Bin-Bu (the Defence Ministry), Xing-Bu (the Justice Ministry) and Gong-Bu (the Construction Ministry). Hu-Bu, the Statistics and Finance Ministry, was mainly in charge of preparing statistics about land use and population change, levying taxes and overviewing accounting practices and financial management. Under Hu-Bu, there were also four departments. These were called Ben-Si which was responsible for preparing the census and land usage statistics; Du-Zhi-Bu, which was responsible for national budgeting and accounting; Jin-Bu, which was responsible for the treasury; and Cang-Bu, which was in charge of stock control. Jin-Bu and Cang-Bu made reports to Du-Zhi-Bu regularly. The relationship of these three departments was similar, in terms of modern equivalents, to that of the accounting department, purchasing department, the inventory control and cashier.

In the Song Dynasty, a series of reforms were carried out [Naite, 1948]. These were based on the Tang system. The reasons for such reforms were: (a) that local governments had too much power in their jurisdictions over finances, which thus led to military capabilities reducing the central government’s power, and (b) the premier of the Administration House had too much power. The position of premier had military, financial, personnel and judicial power. Historically, these caused AnShi
At the beginning of the Song Dynasty, GaoZhu as emperor had learned lessons from the previous emperors and had set up a system in which all administration, jurisdiction and financial powers were placed under the control of the central government. This was a change from the Three Super-ministries and Six Ministries system to a Two Super-ministries and Three Departments system. The Two Super-ministries system—Zhong-Shu-Sheng (the Decision Super-ministry) and Shu-Mi-Yuan (the Military Super-ministry)—was supported by the Three Departments system—Yan-Tie-Bu (the Salt and Iron Department) to be in charge of the selling of salt and iron and the levying of taxes on these; Du-Zhi-Bu (the Accounting Department) and Hu-Bu (the Census and Land Department). These two Super-ministries and three departments were formally defined and each premier had less power than previously held in the Tang Dynasty. This arrangement became the structure adopted early during the Song Dynasty but a series of reforms were carried out over time by the emperors during the Song Dynasty. All these reforms enhanced the status and role of accounting in the society. The premier of Du-Zhi-Bu (the Accounting Department) was for the first time ranked at the same level as premier of Zhong-Shu-Sheng (the Decision Super-ministry) and Shu-Mi-Yuan (the Military Super-ministry).

Accounting Developments During the Tang and Song Dynasties

The Tang and Song Dynasties excelled both in cultural achievement and economic development. They represented the Golden Age in the history of Chinese feudal society [MacGawan, 1973; Latrourette, 1964]. Woolf summarized accounting's role as "the laws which govern the history of accounting are those which govern the progress of the human race" [Woolf, 1912]. Also, Chatfield [1977] writes:

Whether the progress of ideology governs the development of social institutions or vice versa, there are obvious connections between ideas and the conditions under which people live. A study of their evolution suggests that accounting processes are reactive, that they

---

12AnShi Chaos refers to the rebellion of An, Lushang An and Shi, Siming between 755 and 763 A.D., which marked the end of the Tang's flourishing period. From then on, the Tang experienced the period of decline. For more details, see Kenneth Scott Latourette, The Chinese: Their History and Culture, New York: The Macmillan Company, 1964.
develop mainly in response to business needs at any given time, and that their growth is relative to economic progress generally. In general, the higher the level of civilization, the more elaborate the bookkeeping methods. And as record keeping needs multiply, the ability of accounting data to promote or hinder economic development also increases. (p. 27)

During the Tang Dynasty, three major trade routes were established which branched off from Dunhuang\(^\text{13}\) and reached, by land and sea, to the Mediterranean. The diplomatic preliminaries for trade with Japan were initiated. It is said that Master Jian-Zheng went to Japan by sea bringing both Chinese merchandise and his native culture. By the end of the Seventh Century, the Tang had reduced much of Central Asia and Korea to tributary status. Traders bought and sold goods from these areas and so filled the great city markets. The Tang's military victories helped to secure commerce, particularly with Central Asia. Commercial law became more formalized, with penalties prescribed for not using standard measures. Some large government and private businesses engaged in trades such as weaving, dyeing and wine making to meet the imperial household's needs. In the Song Dynasty, the government encouraged commerce more than ever before, preventing tax increases from being levied on commercial activity and occasionally reducing taxes or removing them altogether from minor items. Foreign trade flourished more than in any previous dynasty. Trade was engaged with Korea, Japan, Continental Europe and Arabia. Exports included gold, silver, strings of coins, cloth and porcelain. Imports included spices, ivory, coral and tropical hardwoods. Paper currency appeared with the development of commerce in the Song Dynasty. It replaced the heavy and inconvenient iron money.\(^\text{14}\) Under these economic conditions financial and accounting systems were allowed to progress in order to meet the needs of economic management. The accounting system estab-

\(^\text{13}\)Dunhuang is in the western part of China on the way used by the ancient Chinese silk trade.

\(^\text{14}\)With the development of commerce, merchants invented paper currency which was then called Jiaozi. At the very beginning, it was issued by an alliance of sixteen trading firms. It could be circulated in markets and also be cashed by the issuing firm. For more details, see Philip Fu, *A Study of Governmental Accounting in China: With Special Reference to the Song Dynasty*, Ph.D. dissertation, University of Illinois, 1968.
lished in the Song Dynasty is regarded by accounting historians to be the most elaborate accounting system in Chinese history [Fu, 1968]. In the Tang Dynasty, there appeared a Four Column method of recording which, in the Song Dynasty, became very popular [Lin, 1992]. The formula is:

\[ \text{the old + the newly received = payment + balance} \]

This was more advanced than the Three Column method which was widely used in the Zhou Dynasty. Before the Tang Dynasty, Chinese accounting reports mainly took the form of literal interpretation which was very descriptive. Since the use of the Four Column method, accounting and reporting were advanced to the form of numeral interpretation in which the old, the newly received, the payment and the balance were listed in terms of currency. The Four Column method also settled the foundation of Chinese double entry development.\(^{15}\)

During the Tang Dynasty in 736 A.D., Li Lingpu, an official who worked in Hu-Bu (the Statistics and Finance Ministry) asked the emperor to promulgate Chang Xing Zhi Tiao. In this, all items and sub-items of revenues and expenditures in central and local government budgets were standardized. It was the first uniform system of accounting in China.

Under one modern view, the more advanced the accounting practice, the greater the necessity for the accounting measures that are used to be disclosed adequately to the public [Brown, 1968]. Both the Tang and the Song Dynasties published some famous accounting reports, e.g. National Account Book and Account Book.\(^{16}\) In both of these books, there was also some accounting analysis. This included (1) the financial comparison between the current year and the previous year and (2) analyses

\(^{15}\)Under the Chinese double entry method or Longmen Account, all economic transactions were divided into four categories—receipt, payment, keeping and owing. Under each category there were some subcategories. The basic recording rule is: it must have a receipt and disbursement side for each transaction and the amount for both sides should be equal. The accounting equation was Receipt — Payment = Keeping — Owing. Longmen accounting was the beginning of the development of Chinese double-entry accounting.

\(^{16}\)Some scholars view the appearances of these two reports to have been the most influential accounting events in the Tang and Song Dynasties. They cover the following information: (1) the statistics on land and population, (2) the annual revenues and expenditures, and (3) analysis of the annual performance. For more details, see Chingwei Shou, Democracy and Finance in China: A Study in the Development of Fiscal Systems and Ideas, New York: Columbia University Press, 1926.
about causes of revenue and expenditure variations. These books have become famous in Chinese historical literature not only in terms of accounting history but also in art and culture [Guo, 1986].

It is important to note that non-governmental accounting was emphasized because of the economic development which was occurring during the Song Dynasty. Personal names were used in accounts titles although such titles were also classified according to the contents and nature of transactions.

The Auditing System—Bi-Bu in the Tang Dynasty

The most important development during the Tang Dynasty was that the auditing function was separated from the Finance Ministry and thus became an independent organization. This was called Bi-Bu (the Auditing Department) and it was placed under the direction of Xing-Bu (the Punishment or Justice Ministry). Before this, auditing had been performed by the accounting officers of the Finance Ministry, and later by a specific audit functionary who was ultimately to remain under the jurisdiction of the accounting office. The latest change gave auditing to a judicial authority and its conclusions were regarded as judicial decisions [Lau and Yang, 1991].

Further Development in the Later Dynastical Period

During the Ming Dynasty (1369-1643 A.D.), the Premier’s position was discarded because the Emperor himself was also Premier. The six departments were controlled directly by the Emperor himself. Among them, Hu-Bu (the Accounting Department) was in charge of financial management and accounting. At that time, there were thirteen provinces in China. Thus within Hu-Bu, there were thirteen departments, each of which was responsible for one province. Each department had four divisions. These were to be in charge of the census, accounting functions, treasury and policy and stock control. Each local government area had departments of accounting and taxation. The Qing’s (1644-1911 A.D.) system later became based on that of the previous Ming Dynasty. Together these systems covered the

17In 1380, the first emperor of the Ming Dynasty, Zhu, Yuanzhang, sentenced the premier Hu, Weiyong to death, accusing him of conspiracy. From then on, the premier’s position was discarded. For more details, see Shen Meng, History of the Ming Dynasty, Taipei, 1957.
later dynastical period (1369 A.D. to 1911 A.D.). Because of the influence of foreign trade and customs, an analysis of the development of accounting in China during this period is not included in the present paper.

CONCLUSION

Since the emergence of accounting and its elaborate development in the Western Zhou Dynasty, Chinese accounting experienced a long and slow development over thousands of years under the feudal dynasties. Two conclusions can be drawn from such developments in early Chinese accounting and auditing.

First, during this long period of tedious development overall, there emerged spasmodically some inventive accounting systems and methods: the government sponsored accounting system and Chinese single entry bookkeeping developed during the Western Zhou Dynasty, the Shangji system of reporting and checking started in the Han Dynasty and Bi-Bu which became the system of the Tang Dynasty. These would be used for a span of years until they absolutely could not be fitted to technological and economic change and, ultimately, began to retard economic development. The development of accounting in China was linked strongly with the development of Chinese feudal society. Major influences on the development of accounting practices can be summarized as:

Political Influence

Chinese feudal society was typical of a mature feudal system. The structure was fixed and could not be changed easily. In such a culturally diverse society, accounting could not achieve initiatives quickly. In the long history of Chinese feudal society, especially in the initial period of every dynasty, there was no doubt that new emperors wanted to strengthen their powers and so they started economic and social reforms. At that time, accounting could be advanced in response to the economic and social changes. After a period of time, things became fixed, the Emperor seemed to indulge himself, and the economic and social conditions worsened. At such times accounting could not be advanced quickly.

Cultural Influence

One feature of Chinese culture over several thousands of years is the high degree of state control exer-
cised over the people who obeyed the will of the head of the state [Fitzgerald, 1961]. The government had played a major role in managing and regulating the economy which was based on central planning, e.g., control of irrigation and water works, industries and commerce. Because China did not have a vigorous class of economic entrepreneurs independent of the government, the development of accounting in China to emphasize government accounting which was more advanced than non-government accounting. As mentioned, the development of non-government accounting depended largely on changes in commerce, for example, in the Han, Tang and Song Dynasties. In Chinese feudal history, the policy of stressing agriculture and looking down upon commerce was associated with every dynasty. In the meantime, because of the domination of Confucius Philosophy in the Chinese feudal society, gentlemen were not allowed to speak about money, otherwise they would be regarded as mean. As mentioned, people liked to be regarded as gentle folk. In some dynasties, merchants were even classified as criminals. They were forced to serve in the army along the border areas. Court officials and scholarly officials often viewed accounting as a non-skilled profession. All of these conditions continued to obstruct the development of non-government accounting in China, particularly in the later years of the Ming and Qing Dynasties (1369-1911) [Meng, 1957; Xu, 1955].

Economic Influence

Accounting development is often linked with economic conditions. As mentioned above, when political conditions were relaxed, the economy would grow quickly and then accounting, especially non-government accounting, would be developed further. During the Song Dynasty, non-governmental accounting was emphasized because of important economic developments.

Technological Influence

The development of technology has often played an important part in accounting development [cf. Hopwood, 1987]. During the Han Dynasty, paper was invented. This substituted for bamboo slips and silk pieces in the recording process. The development of paper and the abacus created important changes in ac-
counting in China. During the Song Dynasty, copper coins and paper notes facilitated transactions and were used for paying taxes related to commerce and land. Currency became the main form of commercial measurement and allowed exchange transactions to be captured for government and private operations relevant to accounting and finance.

The second major conclusion is that in the long evolution of Chinese accounting during the more ancient of the dynasties development was unbalanced. Sometimes accounting practice would be pushed forward because of the economic situation. Some accounting methods and systems would be merged at that time. Eventually accounting became more sophisticated than anywhere else in the world, including the accounting system of the Western Zhou Dynasty and the Bi-Bu system in the Tang Dynasty. These systems represent contributions of Chinese accounting to world accounting. Chinese accounting also had a significant influence on accounting development in other Eastern cultures [Jong, 1979], for example, in Japan and Korea. This was due to a prosperous trade that took place between China and eastern countries.

This history of early accounting in China has traced aspects of progress over long periods of time. This history tends to support the recent hypothesis of Mokyr (1990) with respect to developments of economic history. It is a hypothesis which in its turn follows that of the palaeontologists (cf. Gould, 1982) with respect to basic patterns of the evolution of life on earth, as analyzed also in biological science. There will be long periods of dominance by entities, species and/or ideas under conditions which are subject only to marginal modification. However, under the notion of "punctuated equilibrium" organisms find a need for adaptation to a changing environment. In this context, mutations, theories and alternative practices will arise.

A revolutionary change may occur in the form of a response by accounting practitioners to crucial associated changes in cultural, legal and economic phenomena. Progress will, under this strongly confirmed hypothesis of evolution, be brought about by changes in the direction of relevant thinking in society itself. A practical purpose of any history of accounting development is to convey to present day practitioners scenarios for improvement. Historical ideas, when linked to relevant prospectives, can forewarn collective deliberations. Agreements may then arise about
the likely nature and extent of present and future disciplinary changes to generally accepted practices, given observed cultural and legislative changes in the society. This thrust for progress may become confirmed further as accounting in China reacts to opportunities and challenges of the present, particularly those associated with new ventures and with international trade.

REFERENCES

Feng, Liutang, "Ancient Chinese Accounting System", *Accounting Research*, No. 6 (June, 1933).


Meng, Shen, History of the Ming Dynasty, Taipei (1957).


Scott, DR, The Cultural Significance of Accounts, Mississippi: Lucas Brothers (1931).


Xu, Fu, The Political System of the Qin Dynasty, Shanghai Press (1955).


DATA PROCESSING TECHNOLOGY
AND ACCOUNTING: A
HISTORICAL PERSPECTIVE

Abstract: Accounting has evolved over thousands of years from record keeping systems designed to document to systems designed to measure changes in economic activity. Similarly, the technology used to manage economic data has evolved from clay tokens and jars to punched card and computer systems. Throughout their development, changes in data processing technology and accounting frequently have been interrelated. Punched card and computer systems, in particular, have led to significant changes in many of the data management and information system functions of accounting. Current advances in information technology indicate that more profound changes may occur in the future. Insights into how information technology may impact accounting can be gained by examining the historical relationship between data processing technology and accounting.

Archaeological evidence indicates that record keeping was an integral aspect of man's early economic activity. Record keeping in early societies was implemented through clay tokens and pictorial markings on clay tablets [Schmandt-Besserat, 1978, p. 52 and Green, 1989, p. 51-53]. Today, records are maintained on magnetic storage devices and processed on microprocessors made of silicon. Discussions of the evolution of accounting generally stress the commercial and societal factors influencing its development. While attention to these factors is crucial to understanding the current state and possible future directions of the discipline, scant attention has been devoted to its data processing aspects. Because accounting is a data management function dependent upon information technology, the evolution of accounting reflects, in part, advancements in the methods and methodology of data processing.

During this century, the term “data processing” has become synonymous with the application of the computer. However, data processing was an integral aspect of accounting prior to
the computer and earlier punched card systems. Accounting is a system for organizing, storing, retrieving and processing recorded data. These data management functions are the means through which accountants maintain financial records to account for economic activity.

The data management functions which underlie accounting are implemented through data processing technology. This technology is frequently thought of in terms of material objects such as mechanical devices. However, it encompasses much more than this. Westrum notes that "technology consists of those material objects, techniques and knowledge that allow human beings to transform and control the inanimate world" [1991, p. 7]. Rogoff [1990, p. 51] suggests that many technologies support learning and problem solving and that objects, such as an alphabet system and paper, are material support for these activities. The definition of technology that will be used throughout the paper is the use of ideas that are embodied in physical objects, techniques and knowledge to solve problems. Thus, advances in written communication during antiquity would be considered data processing technology in the same sense as computer hardware from the twentieth century.

The purpose of this paper is to trace the historical development of data processing technology and to examine its impact on accounting. The paper will discuss the development of data processing technology from antiquity to the present and will examine the evolving role of computer technology and accounting. An understanding of this history is needed for interpreting and understanding the evolution of accounting from record keeping during antiquity to modern computer based information systems. The evolution of data processing technology provides a perspective needed for the analysis of technological developments and trends that have shaped and been shaped by the accounting profession. It may also aid in understanding the background of many of the problematic issues facing accounting today, such as the profession's concern with internal control in an electronic data processing environment. Finally, this may provide insight into the implications of current computer technology for accounting in an information-based economy.

The remainder of the paper is organized as follows. The first section reviews the historical development of data processing technology and record keeping during antiquity with the major contributions of selected societies briefly examined to
provide an overview of this period. The second section examines the development of the double-entry accounting model and discusses its data management implications. The next two sections trace the successive evolution of mechanical and computer technology. This is followed by a discussion of their impact on accounting and emerging issues with respect to information technology. The paper closes with a summary and a discussion of further research issues with respect to accounting and information technology.

**EARLY HISTORY**

Record keeping appears to have begun prior to a written language and numeral system. Oppenheim hypothesized that small tokens found throughout the Middle East, dated around 8000 B.C., were used to represent and quantify commodities such as sheep or measures of grain [Schmandt-Besserat 1978, p. 52]. This representation of an economic transaction or data was stored in clay jars and may have been processed by adding or removing a container's tokens to reflect an entity's account balance [Schmandt-Besserat, 1978, p. 52]. Despite its simplicity, this method of record keeping included the essential data management functions required of all accounting systems—i.e., organizing, storing, retrieving and processing representations of economic activity.¹

The application of clay tokens and jars to represent economic activity slowly evolved into tractable mediums and methodologies for managing data.² Pictorial notation replaced physical representation in Babylon between 3500 and 2900 B.C.

¹A similar record keeping scheme was used by the ancient Incas, Hawaiians and Chinese. A knotted string or "quipu" was used in place of the Mideast jar and tokens to represent economic objects and other information. For example, Hawaiian tax gatherers used the quipu with its associated loops, knots and tufts of different shapes, colors and sizes to maintain accurate accounts of each person's taxes within a district [Jacobsen, 1983, p. 56].

²Falkenstein was among the earliest researchers to examine the development of writing during the early Sumerian period [Schmandt-Besserat, 1986, p. 32]. Amiet and later Schmandt-Besserat have hypothesized that the use of clay tokens and jars to record and store representations of economic events may have led to the development of written language [Lieberman, 1980, p. 351]. This claim has been criticized by Lieberman [1980, p. 339] and DeFrancis [1989, p. 73-74]. However, the development of written language appears to be linked with the need to maintain records [Driver, 1976, p. 2-3].
[Driver, 1976, p. 4]. During this period, scribes made cuneiform marks that recorded pictorial representations of economic activity on clay tablets. Commercial transactions were accomplished with exchanges in kind and the use of valuation based on weights of precious metals.¹ These transactions were frequently recorded in specific columns of a clay tablet with totals and subtotals used to summarize account balances [Jones and Snyder, 1961, p. 240-241, Postgate, 1974, p. 84-235 and Green 1989, p. 53]. Jones and Snyder [1961, p. 239] referred to this system as the “Sumerian form of double-entry bookkeeping.” However, as noted by Snell, they did not claim that Sumerian texts were double-entry accounts [1982, p. 53]. Rather Jones and Snyder appear to have meant that Sumerian accounts fulfilled the need for explicit and easily understood accounting. In Egypt, a similar pictographic system (hieroglyphs) was used to record transactions on papyrus. In both societies, financial records were maintained to protect assets and to prove that those who administered them had done their job properly [Chatfield, 1974, p. 4]. Stewardship and asset protection were major objectives of record keeping to aid governmental and ecclesiastical officials and merchants in the management of their fiscal affairs.

The limitations of pictographic representation gradually led to the use of alphabetic systems. The Greeks and later the Romans used their respective alphabets and numeric systems to record economic transactions on storage mediums such as papyrus, parchment, pottery (ostraca) and wooden boards coated with wax. In the Greek and Roman societies, the widespread use of coined money facilitated economic exchange. The use of coined money represented a transition from earlier societies use of valuation systems based on commodities and weights of precious metals. Thus, coined money may have been much less of an advance in the measurement of economic activity that was once thought.

¹See for example, cuneiform account texts described by Sigrist and Gavin [1988]. The elaborate lists of animals and commodities evident in ancient Sumerian and Babylonian texts represented the means by which goods and services were valued. Later, silver was used as a standard measure of value without an actual exchange of silver taking place [Saggs, 1962, p. 297]. See Snell [1982] for an extended discussion of the role of silver in valuing and recording economic transactions.
In the Roman Empire, Roman numerals were used to record economic transactions. Computations with Roman numerals have been criticized for the system's lack of place value [De Ste. Croix, 1956, p. 52]. However, computations with Roman numerals were frequently accompanied with an abacus [Durham, 1992, p. 28]. This simple device incorporated the concept of place value by the organization of its counters used in representing numerical amounts. Computations with Roman numerals may, therefore, have been more tractable than commonly thought. The abacus represents one of man's earliest attempts to supplement human processing of data. Consequently, it represents the precursor of later punched card and computer systems.

Greek and Roman records were generally a listing of transactions combining monetary measures with a detailed narrative describing economic events [See for example, reproductions of Greek and Roman records provided by De Ste. Croix (1956, p. 24-40)]. A notable exception was a cash account from Karanis dating about 191 A.D. which listed receipts and payments amounts aligned in a separate vertical column. Other advances such as the use of petty cash and cross-referencing of recorded transactions have been suggested [De Ste. Croix, 1956, p. 34-35]. De Ste. Croix also notes that improvements in accounting during the Roman period "when they do appear, are not consistently maintained and are confined to isolated papyri or groups of papyri" [1956, p. 34].

Despite a stable monetary system, financial records during the Roman period were frequently maintained in physical as well as monetary measures. This may have reflected the goal of early record keeping systems to record economic transactions to prevent fraud and abuse rather than measure attributes of underlying economic activity [De Ste. Croix, 1956, p. 32]. A notable exception to Roman practice were bankers who maintained and periodically balanced customer accounts [Brown, 1968, p. 30]. This procedure would have required classifying

These assertions may reflect the lack of archaeological evidence documenting commerce, government and accounting during this period. For example, the preparation of annual budgets to manage the fiscal affairs of the Roman Empire may have require fairly elaborate developments in governmental accounting. Evidence of these developments, however, is limited. Similarly, the limited archaeological evidence of commercial records in other societies such as ancient Egypt restrict our knowledge of commerce and record keeping during antiquity.
transaction data and organizing it to facilitate the determination of a client’s account balance.5

After the fall of the Roman Empire, the feudal system emerged throughout much of Europe. During this period, record keeping became much more localized and centered around institutions such as the Church and manorial estates [Chatfield, 1974, p. 19-20]. The record keeping practices of Medieval England are particularly well understood. In England, parchment, papyrus, wooden boards and tally sticks were used as mediums to organized and store financial data. A tally was a short stick with notches cut to document the payment and receipt of funds. The tally stick was cut in half, with each party using his half as evidence of the transaction. It was used widely throughout Northern Europe during the eleventh through nineteenth centuries [Grandell, 1977, p. 101] and was used by the English Exchequer as a kind of bill of exchange [Baxter, 1989, p. 53]. Thus, the tally stick served essentially the same role as earlier clay jars and tokens.

During this period, financial transactions recorded on parchment and other mediums were organized in the form of lists much like earlier Greeks and Roman financial records [Chatfield, 1974, p. 24]. The records of manorial estates were combined and balanced during an audit [Oschinsky, 1956, p. 91-92], perhaps indicating that more elaborate classification and summarization of financial data may have been required. The sophistication of manorial record keeping may have reflected the need of estate owners, who were often absent from their estate, to closely monitor the financial behavior of agents (stewards) entrusted with economic resources. Similarly, the Exchequer's use of the tax rolls and tally stick provided a simple but efficient means of organizing financial data [Chatfield, 1974, p. 19-23].

During antiquity, the technology of data processing evolved over thousands of years from primitive to more powerful and tractable forms. However, record keeping after the Babylonian period appears to have advanced very little despite significant developments in the methods of representing, storing and pro-

---

5 Banking was practiced during the Babylonian period [Oppenheim, 1964, p. 85]. The requirements of bankers to maintain customer accounts and the use of classification and summarization during this period may indicate that Babylonian bankers may have maintained and balanced their client’s accounts thousands of years prior to Roman bankers.
cessing data. The failure of ancient societies to develop more systematic record keeping is frequently attributed to their lack of need for more advanced systems [Chatfield, 1974, p. 7]. The restrictive property and contractual rights of early agricultural-based societies limited commerce with its associate need for advanced record keeping systems. The potential for the development of more advanced record keeping systems was hinted at by the practices of Roman banks and English estates. However, record keeping throughout antiquity remained primarily a documentation activity used to supplement man's memory and to aid in exposing losses due to fraud or inefficiency [De Ste. Croix, 1956, p. 32].

DOUBLE-ENTRY BOOKKEEPING

During the tenth and eleventh centuries, commercial activity in Northern Italy became more sophisticated than that of earlier eras. Changes in property rights and contractual obligations, together with increased commerce stimulated, in part, by the Crusades created a large and sophisticated merchant class [Luzzatto, 1961, p. 29-71]. Italian merchants, trading through consignment agents and using short-term partnerships and credit instruments, required record keeping systems to monitor

---

6In the Roman period, one of the major obstacles to commerce was psychological [Lopez, 1976, p. 8]. Trade was regarded as an occupation of low social standing and unworthy of a gentleman. This low esteem in which commerce was held may have restricted advances in the development of record keeping. As noted by Littleton, all of the antecedents of double entry were present during antiquity but failed to produce bookkeeping [1933, p. 16]. He notes that changes in the outlook and aspirations of society following the Dark Ages may have facilitated the subsequent development of double-entry bookkeeping [1933, p. 16].

7During the tenth and eleventh centuries, the feudal system in much of Italy, with its emphasis on a self-contained agrarian economy, weakened as a system of city states with an economy based on trade and commerce grew in importance [Luzzatto, 1961, p. 29-71]. This was the result of changes in the legal, social and economic system. For example, during the tenth and eleventh centuries, the status of tenants who worked feudal estates was established by law and custom rather than personal bond [Luzzato, 1961, p. 61-62]. Similarly, property rights were extended to lower nobility and merchants [Luzzatto, 1961, p. 61-70]. These and other changes facilitated the development of a large and powerful merchant class and accumulation of business capital. The development of double entry may have reflected the increased importance and sophistication of commercial activity in Northern Italy during this period as well as the changing legal and social aspects of commerce.
business ventures in various stages of completion. To meet these needs, record keeping evolved between roughly 1250 and 1440 A.D. into the double-entry system of bookkeeping [De Roover, 1956, p. 117].

Relative to earlier record keeping systems, double entry or the Italian model evolved into a more sophisticated model for representing and managing economic data. In Pacioli's treatise on bookkeeping, published in 1494, concepts such as assets, capital and profit and the relationships among these concepts [Brown and Johnston, 1963, p. 66-97] were used to model economic activity. Recorded transactions were processed by means of a set of data structures—i.e., journals and ledgers—for organizing and storing financial data—and a set of procedures for transforming recorded data into the concepts of the Italian model.

As noted earlier, fraud detection and accuracy had been major objectives of record keeping throughout antiquity. Earlier systems had relied on procedural techniques such as the records

---

8 The role of Arabic numerals and paper in the development of double entry appear to be minimal. Prior to the fifteenth century, Arabic numerals were seldom used in commercial records [Durham, 1992, p. 38]. Littleton has suggested that Arabic numerals facilitated commercial computations that were subsequently recorded and maintained with Roman numerals [1933, p. 21]. The use of Arabic numerals for record keeping were limited by statutes such as the Florentine bankers' guild statute of 1299 that forbid the use of Arabic numerals in accounts [Murray, 1978, p. 170].

During the thirteenth and fourteenth centuries, paper was widely substituted for parchment as the primary material for writing [Murray, 1978, p. 301]. Thus, during much of the period in which double entry was being developed, parchment and other materials were used for record keeping. Paper, as well as parchment, are mentioned in Pacioli's treatise on bookkeeping published in 1494 [Brown and Johnston, 1963, p. 88-101]. This may indicate that as late as 1494 parchment was still widely used and was not problematic for record keeping purposes.

9 An earlier manuscript on double-entry bookkeeping had been written by Benedetto Cotrugli in 1458 but was not published until 1573 [Chatfield, 1974, p. 50].

10 In Pacioli's treatise on bookkeeping, the ledger was the end product of the accounting process. The closing of the revenue and expense accounts to the profit and loss account and closing it to the capital account represented the culmination of the record keeping process [Brown and Johnston, 1963, p. 96-98]. The development of financial statements separate from the ledger was well under way by the end of the nineteenth century [Littleton, 1933, p. 149]. As a result, the ledger became a data structure for organizing and storing financial data to support subsequent financial statement preparation.
of one governmental official agreeing with the records of another official or an audit of the most minute detail of receipts and expenditures. In the Italian model, internal control features such as the duality of recorded entries and balancing requirements were incorporated within its data structures. These features made the detection of errors and omissions an integral aspect of the management of financial data. The purpose of double-entry record keeping as noted by Pacioli was to "know all about your business and whether or not it is going well" [Brown and Johnston, 1963 p. 75]. However, throughout his text, Pacioli noted that double entry was useful for preventing fraud and documenting financial activities [Brown and Johnston, 1963, p. 78-101]. Double entry thus served the documentation and control functions of earlier record keeping systems within a much more sophisticated model for managing economic data.

The double-entry model developed in Northern Italy during the late Middle Ages became the dominant record keeping system used in Britain and the United States and has become the underlying framework within which accountants have developed modern accounting. The preeminence of double entry may reflect the power and appeal of its abstract representation of a firm's financial activities. It may also be due, in part, to the power and flexibility of its data management model for providing a comprehensive and systematic means of managing financial data. As noted by Yamey, "double entry is basically a classifying device or technique of considerable efficacy, adaptability and versatility . . . in a sense, all the system does in the field is to ensure consistency between the profit calculation and net changes in recorded asset values" [1956, p. 11]. Double entry provides a flexible framework for managing financial data within which accountants have developed and refined conventions and standards for measuring concepts such as profit and capital over time. Finally, the continued use of double entry may reflect the integration of the data management and the internal control functions which are needed to ensure the reliability and integrity of financial data.

While double entry provides a powerful and flexible model for managing data, it has several limitations for meeting the informational needs of organizations today. First, the Italian model was developed to manage transaction data that could be expressed in monetary or near monetary terms. Consequently,
double entry is limited in the types of economic activity that it may be used to record. For example, double entry is not amenable to recording and processing qualitative data such as customer preferences or product reliability attributes. This may explain why operational functions such as marketing and production often maintain their own data and information systems.

Second, double-entry's chart of accounts is not always appropriate for recording economic events today and may result in data's not being recorded or recorded in a way that hides its nature from non-accountants [McCarthy, 1982, p. 555]. Double-entry's chart of accounts and their interrelationships represent a perspective of an enterprise's economic reality. However, the Italian model's chart of accounts in organizations today has been described as useful taxonomies, classification schemes or naming conventions rather than real entities [Everest and Weber, 1977, p. 342]. Consequently, double entry may be restricted in the economic activity that it may be used to represent.

Third, the double-entry system stores data in a highly aggregated form that does not facilitate its use across a wide range of applications. Finally, the data processing aspects of the double-entry system were developed, in part, to emphasize internal control. This objective was achieved by imposing considerable structure on how data is recorded, organized, stored and manipulated. Consequently, double entry is constrained in the data it may be used to manage in modern organizations.

Record keeping prior to double entry had been concerned primarily with the documentation of economic activity. Double entry represented a more sophisticated system for representing economic activity and data management system for transforming recorded data into concepts such as profit and capital that summarize underlying attributes of economic activity. However, like earlier record keeping systems, double entry was also used to document economic activity to prevent fraud and abuse. Double entry appears to have develop in response to the changing nature of commerce created by changes in the legal, social

11In Pacioli's day, accounting data did not exist independent of the uses to which it would be put. Today data is frequently organized and stored independently of the applications that will use the data. This permits data to be used across a much wider range of applications. The limitations of double entry arise from using a model designed for the late Middle Ages in meeting many of the informational needs of the twentieth century.
and economic structure of Northern Italy during the tenth and eleventh centuries [Luzzatto, 1961, p. 29-71]. Despite significant changes in law, society and commerce since its development, double entry has remained the dominant form of accounting used by Western Society to support economic activity since the Renaissance.

ACCOUNTING MECHANIZATION

From its development in Northern Italy to the end of the nineteenth century, double entry was implemented with human labor. Clerks with pencil or pen and paper and, in some instances an abacus, to perform needed calculations, recorded and processed commercial transactions within the double-entry system of bookkeeping. The labor-intensive nature of record keeping through the nineteenth century was a limiting factor in its application. Human beings are relatively slow and error prone in processing data [Coleman, 1949, p. 8-9]. For example, Pacioli noted that bookkeeping errors occur through absent-mindedness and other causes and indicated the need for accountants to correct them with diligence [Brown and Johnston, 1963, p. 90-98].

During the nineteenth century, firms in industries such as railroads, steel and banking increased in size and economic complexity, unknown in previous periods. This resulted in both an increase in the volume of commercial transactions to be processed as well as an increased demand for information for planning and controlling economic activities. During this period, the limitations of human labor as the primary means of processing data became a constraint in meeting commercial needs [Coleman, 1949, p. 10].

The limitations of manual processing of data, led to the introduction of mechanical devices in the late nineteenth century [Coleman, 1949, p. 8-9]. Writing boards, peg boards and document control registers were developed to integrate, repetitive data processing tasks, thereby increasing clerical efficiency. The mechanical capabilities of the typewriter and adding machine were extended, creating the cash register, posting and accounting machine. The cash register was an adding ma-

12The typewriter was developed during the 1860s by Christopher Sholes [Romano, 1986, p. 6], while the modern adding machine was invented in the 1880s by William Burroughs [Coleman, 1949, p. 5-11].
chine mounted within a metal or wooden case for storing and securing cash. It served the dual functions of aiding in processing a transaction while recording and accumulating summary data for accounting purposes. Similarly, a posting machine was an adding machine adapted for entering financial data and posting it to journals and ledger forms. A movable carriage, multiple registers and alphabetic keyboard were quickly added to the posting machine which was marketed as an accounting machine and later as a computer. The computing capabilities of later model accounting machines were quite impressive. However, their reliance on mechanical technology precluded many of the functions associated with computers, such as an internal memory and ability to read and store data processing instructions.

Posting and accounting machines were stand-alone devices designed for specific record keeping tasks such as journalizing and posting transaction data. These machines did not change the nature of double-entry accounting. However, they did improve the efficiency with which data were processed and may have contributed to the quality of record keeping through mechanical computations and posting of transaction data. The adding machine, in particular, facilitated the use of batch totals and other controls needed to insure the accuracy of processed data.

Delays in completing the national census of 1880 led Herman Hollerith to mechanize its data processing function [Bashe et al, 1986, p. 2]. Prior to mechanization, completing the census was a slow and tedious process of manually counting each attribute or combination of attributes of the census on tally sheets or writing census attributes on slips of paper which were sorted and counted according to one grouping of facts and then according to another [Hollerith, 1889, p. 133]. Hollerith introduced a series of machines to encode, organize and tabulate census data on punched cards. The Secretary of Commerce and Labor in reviewing the 1890 census using punched cards machines indicated that their use had enabled statistical undertakings “to be completed in at least one-tenth the time required to do it by hand, at about one-third the cost and with a marked increase in efficiency” [Austrian, 1982, p. 182]. Despite the success of his system in completing the 1890 and 1900 censuses, economic considerations induced Hollerith to redesign the system for accounting [Bashe et al, 1986, p. 5].
Hollerith's system initially consisted of a keypunch, a gang punch and a tabulating machine.\textsuperscript{13} International Business Machine (IBM), the successor to Hollerith's Tabulating Machine Company, later added a verifier (1917), a sorter (1925) and a collator (1937). Each device was successively modified and redesigned over time. The tabulating machine, in particular, evolved from a primitive counting device into a mechanically sophisticated programmable machine for processing and printing data encoded on punched cards.

Accounting applications of Hollerith machines had begun in 1895 with the use of tabulating machines to process freight tickets at the New York Central Railroad [Austrian, 1982, p. 124]. The use of punched card systems spread and were used in bookkeeping and cost accounting applications by 1907 [Austrian, 1982, p. 205-252]. Later model tabulating machines incorporated accounting related features such as printing a sum of transactions as either a debit or credit balance and cross-footing accumulated data [Bashe \textit{et al}, 1986, p. 12 and 14]. The 80 column punched card which would be used in later computer applications was designed to meet the data storage requirements of accountants [Bashe \textit{et al}, 1986, p. 11]. In 1939, IBM began marketing several of its tabulating machines as accounting machines [Bashe \textit{et al}, 1986, p. 18].\textsuperscript{14} These machines would continue to be used in processing financial data through the early 1960s [Meall, 1990, p. 70].

In a punched card system, transactions were processed on successive machines organized like an assembly line. Lower level data processing tasks previously performed by skilled clerks and accountants were delegated to machines designed to perform these tasks more accurately and efficiently. For example, a punched card system during the 1920s used a keypunch operator to keypunch account payable data from batches of vendor invoices [Schnackel and Lang, 1929, p. 306-309]. The

\textsuperscript{13}A gang punch is a device for punching data onto several cards at one time. A tabulating machine reads data encoded on punched cards, accumulates transaction totals and prints encoded data and accumulated totals on journals and ledger forms.

\textsuperscript{14}In tracing the history of punched card machines, Bashe \textit{et al} frequently note that these machines were used in performing accounting functions [1986, p. 5-20]. In addition, they note that these machines were widely used by the armed forces, railroads and insurance companies, without specifying the nature of their use.
punched cards were then keypunched a second time using a verifier to assure their accuracy, sorted by store and account number and summarized on a tabulating machine. Ledger accounts were posted manually from totals accumulated on a non-printing tabulating machine [Schnackel and Lang, 1929, p. 309].

Hollerith's punched card system was developed for data management in general and later redesigned specifically for accounting. Its conceptual and comprehensive approach to data management transformed the organization, storage and processing aspects of double-entry bookkeeping. In a punched card system, financial transactions were recorded in binary code on punched cards, a format and medium designed for machines rather than humans.\textsuperscript{15} Data on punched cards were stored in a relatively disaggregated form and could be reorganized and used for alternative applications. Conversely, data stored in traditional journals and ledgers were severely restricted in this respect. For example, sales transactions recorded on punched cards could be used to update the firm's general ledger accounts and then resorted and tabulated on a different set of fields for analysis of sales by product, territory, or customer. Punched cards facilitated recording transaction data once and then using it for multiple applications. Furthermore, punched card systems were not limited the way journals and ledgers were to specific types of data or data processing operations. For example, data recorded on punched cards could be accumulated on a specific field or set of fields while double entry is generally restricted to accumulating data by its chart of accounts. Consequently, punched card systems represented a far more powerful and flexible model relative to double entry for organizing and storing data.

\textit{Accounting Implications}

The change in the data management aspects of double-entry accounting with punched cards had several implications for accounting that have become progressively more significant.

\textsuperscript{15}Decimal numbers in punched card and later computer systems are recorded as a pattern of bits (binary digits). Computers convert this decimal representation into an equivalent binary representation for internal storage and computational purposes.
with the advent of computerization. Punched card systems began the separation of accounting and data processing technology. Prior to Hollerith’s machines, the data processing technology used to manage financial data was relatively simple to apply. Punched card machines required substantial technical expertise to understand and operate. Consequently, they were delegated to technical personnel who would over time develop into a separate operational function known as data processing. The data processing capabilities of punched card machines and the development of a separate professional group for their implementation would have a profound influence on accounting. Many of the data management functions formerly performed by accounting were now performed by data processing professionals. Equally important, the technical skills of data processing professionals would enable them to lead in the application of this and emerging computer technology. For example, data processing professionals would lead in applying punched card machines in developing and managing non-financial applications such as production planning and scheduling [Nelson and Woods, 1961, p. 404-420]. Punched card and later computer systems represented a technology for developing information systems to support functional areas throughout the firm. The technical skills of data processing professionals enabled them to begin developing these applications.

The application of punched cards necessitated the use of controls outside the framework of double entry. As noted by Schnackel and Lang, machine and operator controls were needed to insure the accuracy of machine processed data [1929, p. 297]. Accountants’ concern with internal controls outside the framework of traditional double-entry accounting began with punched card systems.

Hollerith’s machines and mechanical devices, such as posting and accounting machines, represented the application of principles from the Industrial Revolution to clerical work. These machines began the transformation of double entry accounting from a manual to a mechanical system for processing economic data. Advances in punched card machines were frequently developed to meet the data processing requirements of the accounting profession. These changes in accounting and data processing technology reflect the frequent interaction between developments in the two disciplines upon each other.
COMPUTERIZATION OF ACCOUNTING

The computational needs of World War II accelerated earlier advances in computing technology and led to the introduction of the first large scale digital computer in 1946 [Meall, 1990, p. 69]. From this prototype, the first generation of computers designed for commercial purposes were introduced in the early 1950s. The IBM model 650 (1954) was the most popular first generation main-frame business computer. It replaced earlier tabulating machines for processing data encoded on punched cards.\(^\text{16}\) The application of first generation computers, thus, represented, in many ways, an extension of earlier punched card systems.

A second generation of computer development began in 1959 with the application of transistor technology. Although the data processing capabilities of first and second generation computers were quite slow by the standards of today, they represented a significant advance over earlier punched card and mechanical devices. Accounting was traditionally one of the first functional areas to implement computerized or electronic data processing (EDP) on a large scale with either first or second generation computers. Gibson and Nolan note that firms initially used computers in cost-reduction accounting applications [Gibson and Nolan, 1983, p. 27]. Applications cited by Gibson and Nolan include payroll, accounts receivable, accounts payable and billing. The computer applications implemented during this period were frequently journal or ledger specific and represented a continuation of earlier mechanical and punched card systems to make the data management aspects of double-entry accounting more efficient. For example, accounting information system texts of the period emphasized automating manual aspects of accounting [Nelson and Woods, 1961 and Johnson, 1959].

A third generation of computer development began in 1964 with the introduction of IBM’s System 360. The System 360 and related advances in disk storage, computer terminals and minicomputers led to the application of computers on a much more extensive scale than prior generations. One of the most signifi-

\(^{16}\)The model 650 was one of the few computers during the early 1950s to offer punched card as an input and output medium [Bashe et al, 1986, p. 171]. As noted by Long [1987, p. 45], the success of the model 650 was due, in part, "to its logical upgrade to existing punched-card machines."
cant aspects of third generation technology was the development of data base management system (DBMS) software. A DBMS is a computer-based system for managing a database, set of databases or data files [Everest, 1986, p. 14]. DBMS evolved from a means of assisting in the manipulation of data files in the early 1960s to a philosophy that data should be managed independently of application programs and users. As noted earlier, the double-entry system is a highly specialized model for managing economic data. DBMS software represents a far more powerful and flexible set of data structures and operations for managing quantitative as well as qualitative data through the computer.

The data processing capabilities of third generation computers were used by many firms to integrate computer applications around broad operational functions and transaction cycles. These systems aided clerical and operational personnel in processing successive events in a transaction cycle while simultaneously recording, updating affected records and storing data for subsequent analysis. This enabled transactions to be journalized and posted to subsidiary and general ledger accounts as an economic event occurred. While beneficial to accounting, third generation computers were even more significant for other functional areas. During this period, many firms developed EDP applications on an extensive scale for non-financial functions such as production, marketing and personnel [Walsh, 1981, p. 37].

During the 1960s, systems to support management decision making were developed [Meall, 1990, p. 70]. This application of

17 Prior to DBMS, all aspects of data management were implemented through application programs. This created a dependence between data and application programs. For example, a change in how data was physically stored necessitated a change in every program using the data. It also frequently made much of the firm's data inaccessible to new applications. Data in a DBMS is stored in a highly disaggregated form and is managed through the data structures and procedures of the DBMS. In effect, data is stored in a central repository, the data base, and application programs and users share this data through the DBMS.

18 See for example, Leitch and Davis who note that many firms began to integrate transaction processing around major organizational functions such as production, marketing and finance with on-line input, storage and processing capabilities [1992, p. 174]. This required random access of disk storage devices which were available with third generation computers [Long, 1987, p. 47].

19 See Leitch and Davis for a more detailed discussion of these issues [1992, p. 173-178].
the computer became known as management information systems or MIS. The concept of MIS evolved from a monolithic information system to a federation of subsystems designed to support the management of an organization [Davis and Olson, 1985, p. 10]. Firms implementing MIS during the late 1960s frequently experienced problems with cost overruns and often realized disappointing results from attempts to develop an MIS [Dickson and Wetherbe, 1985, p. 5]. However, MIS represented a new paradigm for defining the role of computer technology. It represented a transition from using the computer to process data more efficiently to using it to support the management of information. Consequently, it also represented a transition in the role of EDP personnel from computer technicians to developers and managers of information systems.20

The introduction of computers utilizing large scale, integrated circuits in 1971 is frequently cited as beginning a fourth generation of computer development [Long, 1987, p. 47]. One of the most significant aspects of this technology was the development of microcomputers. These desk-size machines quickly evolved from kits assembled by hobby enthusiasts into inexpensive computer systems capable of providing main-frame resources and capabilities. However, unlike earlier computer tech-

20Little and only fragmented information is available about the early developments of the EDP profession and its impact on the evolution of computer applications in business. The number of EDP professionals —i.e., computer operators, programmers and system analysts—rose from an insignificant number in the late 1950s to over a million by 1981 [Hiltz, 1981, p. 219]. The rapid increase in the EDP profession was frequently accomplished by taking employees without a degree in computer science and using on the job training and training by equipment manufacturers [Lundell, 1973, p. 2]. Managers of EDP installations frequently rose from the ranks of programmers and system analysts. The technical orientation and frequent lack of business experience of EDP professionals were often problems in the development and management of software applications [Crane, 1982, p. 98].

A review of computer journals such as Datamation and Computerworld in the 1970s and 1980s suggests that factors that influenced the evolution of computer applications in business were advances in technology that decreased the processing cost per transaction and the interaction of EDP professionals and managers as they became aware of the potential of computer technology for developing advanced applications [Benson, 1980, p. 32-34]. One of the major contributions of EDP professionals to the maturity of data processing was the development of the management skills necessary to plan and control software development [Benson, 1980, p. 31]. An alternative explanation proposed by Noble suggests that the evolution of computers in business was an extension of science and technology to control human behavior [1984, p. 142].
nology, microcomputers were delegated to users [Davis and Olson, 1985, p. 12] rather than EDP professionals.

Many of the trends discussed earlier with respect to third generation computers continued with fourth generation technology. DBMS were used by system developers to integrate business applications around one or a small number of data bases shared by applications and users throughout the firm. The analysis and interpretation of recorded data were extended through the development of decision support and expert systems.

While MIS developed information systems from an organizational perspective, microcomputers provided a more user-oriented data processing environment. Microcomputers represented a shift in the control and application of data processing resources from EDP professionals to users [Davis and Olson, 1985, p. 12]. The early limitation of microcomputers as a stand alone computer were removed with the integration of microcomputers and data communication technology to form local area networks (LAN). This technology was used initially by large corporations and gradually spread to other users as the technology matured. LANs enabled microcomputers to access organizational data and data processing resources stored on a centralized computer such as a main-frame. This enables microcomputer users to communicate with each other as well as share data processing resources and tasks. Unlike predecessor technology, microcomputers connected to the LAN remained under

21During the early 1980s, the development of large DBMS applications and the microcomputer were countervailing forces. DBMS were largely restricted to a main-frame environment due to the insufficient memory and processing speed of microcomputers of the period. DBMS, thus, represented a movement towards centralization of data processing resources while microcomputers represented a movement towards decentralization of these resources. Recent advances in microcomputers and DBMS packages designed for the microcomputer have made the two technologies complimentary. DBMS enable microcomputer users greater access to the firm's data and the ability to process financial data in ways that were impossible with double entry or earlier generations of computer technology.

22Decision support systems enable users to access corporate data bases and quantitative models to process data interactively to aid the decision making process. Expert systems are programs with the knowledge of an expert in a domain of interest embedded in the software. Users can apply an expert system to learn the domain modeled by the software or use it as an aid in formulating a decision.
the control of the user. Thus, LAN technology made the decentralized data processing environment of microcomputers compatible with the centralized data base environment of a DBMS. This led to an evolving form of decentralized or distributed data processing in which the microcomputer provided users with expanded access to corporate data and data processing resources.

Currently many firms have begun to delegate responsibility for application development and maintenance to users. This is the result of nonprocedural or fourth generation languages that facilitate application development by users while reducing development time and cost [Davis and Olson, 1985, p. 424-427]. Firms delegating application development to users frequently require compliance with company software standards and controls to ensure the reliability and integrity of processed data. The delegation of responsibility for application development to users represents a continuation of an earlier trend begun with microcomputers. It enables users to interact directly with computer technology rather than through EDP professionals to meet their information needs.

Fourth generation hardware, software and LAN technology integrate computing, data base management and communications creating a synergy among these functions and forming a larger system of information technology. Organizations are increasingly applying this technology to their business processes to improve product quality, decreasing product development and production life cycles and reach global markets [Elliott, 1992, p. 64]. Information technology leverages human capabilities and enables firms to redesign business processes and activities to achieve organizational objectives more efficient and effectively. Information technology is becoming a primary resource for the creation of value in the production of goods and services.

---

23 A microcomputer connected to a LAN is frequently limited in its access to network resources. Authorization and password systems are used to control user access to network data, software and other resources. A network workstation may be disconnected and used as a stand alone computer system. In effect, a microcomputer connected to a LAN may be used in a multiuser mode within the constraints imposed by the network's supervisory system and in a stand alone mode independent of the network.
THE IMPACT OF COMPUTER TECHNOLOGY ON ACCOUNTING

The application of each successive generation of computers has accelerated trends which began with earlier punched card systems. Computers increasingly have become the primary means of managing financial data. Consequently, accounting's dependence upon EDP technology and professionals for the management of financial data has increased. Frequently, financial data is managed as part of a larger data base [Page and Hooper, 1992, p. 188] administered by a data base administrator (DBA). The DBA is responsible for the content, structure, security and management of the data base [Everest, 1986, p. 589-600]. In this arrangement, the objectives of the DBA and accounting may conflict. For example, the data base goals of greater data access and shareability may conflict with internal control objectives of accounting such as restricted and controlled access of a firm's financial data. While sophisticated authorization and password systems are frequently used to mitigate these conflicts, a data base system opens the firm's data up to abuse by lax implementation or by unauthorized users with the necessary technical skills required to defeat these controls. The cumulative effect of computer technology has been the further absorption of much of accounting's traditional data management function by EDP professionals. Thus, accounting has become increasing separate from the technology and data used to implement its function.

MIS has transformed EDP from a data processing into an information system function. Accounting's traditional information system role has been absorbed, in part, by EDP professionals [McKinnon and Bruns, 1993, p. 35]. Furthermore, MIS has extended the role of EDP professionals to encompass the management of information including financially related data. For

---

24See Everest [1986] for an extended discussion of the role and responsibilities of a DBA. While the DBA may rely heavily on guidance from accountants with respect to controls needed for financial data, it is the DBA who is responsible for the implementation and performance of these controls. In many instances, the firm's DBA may be an accountant. However, their role is much broader than that of a traditional accountant and he or she is responsible for managing the firm's data, including its financial data, from a firm wide rather than traditional accounting perspective.

25Davis and Olson note that accounting is frequently a major subsystem within an MIS and that financial data is managed as part of a larger data base used in implementing an MIS [1985, p. 15].
example, MIS has come to encompass much of the traditional content of managerial accounting [Davis and Olson, 1985, p. 13].

Related technology such as DBMS software has had a more subtle impact on accounting. The double-entry accounting model served for centuries as the primary framework for managing financial data through manual and later mechanical means. Modern DBMS products provide a much more powerful and flexible set of data structures and operations for managing financial data. DBMS are increasingly being used to implement information subsystems such as accounting.26 Frequently, the journals, ledgers and procedures of manual accounting systems are maintained and implemented through the data structures and operations of the DBMS. However, this represents an inefficient use of computer and DBMS resources because accounting systems can be implemented more efficiently through the data structures and operations of the DBMS rather than those of double entry [Everest and Weber, 1977, p. 341-342]. DBMS stores data in a highly disaggregated form and can create journals and ledgers as virtual files for reference and auditing purposes. In effect, the data structures and operations of DBMS make the traditional structures and operations of double-entry accounting increasingly obsolete.27

Emerging Issues

Current advances in information technology, like earlier generations of computers and punched card machines, pose a new set of opportunities and challenges to the accounting profession. Information technology makes it feasible for accountants to expand their role along several potentially useful avenues. DBMS make it technically and economically feasible to

26Software Digest in its review of twelve multiuser accounting packages noted that "an accounting package is a data base management system with an accounting application built on top of it" [1991, p. 4]. Accounting packages such as Great Plains, Macola Accounting Software and MICA IV are based on DBMS such as Novell's Btrieve [Software Digest, 1991, p. 4-5]. Firm specific accounting systems are frequently developed from database systems such as Oracle, DB2, Dbase and other commercial packages.

27McCarthy [1979, p. 668-684] and Everest and Weber [1977, p. 350-356] discuss the development of accounting systems using the data structures of DBMS rather than traditional structures of double entry such as journals and ledgers.
prepare financial reports with different levels of data aggregation, reporting formats and valuation method(s) to better meet the informational needs of specific users or groups of users. It also enables accountants to implement alternative forms of double entry such as Ijiri's multidimensional [1978] and triple-entry accounting [1982] models. Finally, DBMS enable accountants to prepare financial reports over shorter time periods and with less delay to provide users with more timely information.

A more fundamental question that accountants will have to address concerning the current technology is whether double entry is an appropriate model or the only model accountants should use for preparing financial reports. Data base modeling methods such as Chen's [1976] entity-relationship techniques enable different views of economic activity to be constructed. McCarthy [1982] demonstrated the application of this technique in developing an accounting system independent of many of the constraints of double entry that modeled the resources, events and agents involved in economic activity. Similarly, emerging technology such as object-oriented programming enable users to link libraries of software to model real world processes and activities. Object-oriented software may be used to model economic events to better reflect the entities, relationships and activities of interest to users. These technologies may be used to develop alternative accounting models as well as develop accounting systems to support management concepts such as JIT, TQM and activity based management outside the traditional framework of double-entry accounting.

Information technology represents the advance of computers and related technology to the point that substantial technical expertise is no longer required for its application. These advances enable accountants to play a more active role in the

---

28The technical skills required to apply punched cards and later computer systems were formidable. Microcomputer technology requires limited knowledge of computer hardware and software to perform tasks that previously only EDP professionals could perform.

Similar to the evolution of computers, the early system of writing invented by the Sumerians was thought to be too complex for the layman and was delegated to a professional class of scribes [Driver, 1976, p. 62]. With the emergence of alphabetic systems of writing, layment began to assume the functions performed by scribes. User controlled technology represents a similar shift in the application of information technology from EDP professionals to users. One of the significant aspects of the development of computer technology is the relatively short time span in which this transition has occurred.
development and management of information systems; a role that prior to punched cards and computers constituted such an integral aspect of their domain. Equally important, they provide opportunities to expand the domain of information produced by accountants. Current changes in organizational structure such as the movement of many firms to a decentralized or network organizational structure and the impact of strategic initiatives such as downsizing, outsourcing and reengineering are creating new and emerging informational needs. Information technology provides accountants with the means of developing and managing information systems to meet these needs.

One of the emerging concerns with respect to information technology is the potential for external users to prepare their own financial reports. Beaver and Rapport have suggested that a data base approach to financial reporting be adopted [1984, p. 16]. Their proposal is similar to an events approach to financial reporting [Sorter, 1969, p. 13]. Under this approach, firms would provide stockholders, creditors and other interested parties with access to their DBMS and they would compile their own financial reports. In effect, firm's would provide external users with access to their data instead of traditional financial reports to assess their operating and fiscal activities. While there are significant regulatory and legal liability issues with respect to this form of financial reporting, it is rapidly becoming feasible for many firms [Cushing, 1989, p. 30]. In effect, the technology that enables accountants to prepare financial statements tailored to the needs of external users also permits users to perform this same function. Given the competitive advantage of accountants in financial statement preparation and the potential for users to incur excessive cost and construct potentially misleading reports, accountants should be proactive in the development of user specific financial reporting. This approach can significantly expand the usefulness of accounting while diminishing the need for users to assume this function.

Another concern with respect to end user computing is the problem of internal control. Users, with little knowledge of information systems or internal controls, may develop applications that contain significant errors and control weaknesses. For example, some business professionals estimate that one out of three spreadsheets (one of the earliest and simpler forms of user developed applications) contain errors [Creeth, 1985, p. 92]. While EDP professionals have well developed standards for re-
viewing, testing and documenting software, end users are frequently unaware of the need for performing these activities or the level of rigor needed for their implementation. Consequently, software developed by users may have substantial potential for errors and omissions that may affect decisions developed from information using these applications. 

**SUMMARY AND CONCLUSIONS**

Record keeping began around 8000 B.C about the time of man’s transition from a nomadic to an agricultural based economic system. Data processing technology evolved over thousands of years from clay tokens and jars to alphabetic and numeric systems capable of abstract representation and quantification of economic activity. Despite these advances, record keeping remained primarily a documentation function throughout much of the agricultural era, 8000 B.C. to 1650 A.D. [Elliott, 1992, p. 61]. During the later stages of this period, the double-entry form of record keeping was developed in Northern Italy and represented the beginning of a shift from documenting to measuring changes in economic activity. During the later stages of the industrial era, 1650 to 1955 [Elliott, 1992, p. 63], mechanical devices were introduced to mechanize the data management aspects of record keeping itself. The introduction of the computer in the 1950s is cited as beginning an information era [Toffler, 1980, p. 30]. The computer has been used during the initial stages of this era to automate the data management aspects of double-entry accounting.

The evolution of data processing technology and accounting over the thousands of years of their development are interrelated. For example, the need to keep records is thought to have influenced the development of writing, likewise accounting influenced many of the subsequent developments in punched card

---

29One of the emerging issues with respect to information technology is the expanded need for the internal auditing function. Evaluation of data base controls is essential in a data base environment. Data recorded incorrectly or stored in an inappropriate manner may cause errors that cascade through applications using the data. Similarly, a review of user developed software may be needed to insure compliance with corporate software standards. Review and testing is needed to insure that user developed programs are free of erroneous assumptions and faulty logic that frequently lead to software failure. Independent review is also needed to insure proper documentation and control of user developed applications.
technology. One of the significant aspects of this later relationship was the delegation of punched card and later computer systems to EDP professionals. This led to non-accountants assuming many of the traditional data management functions and information system role of accounting. Equally important, it led to EDP professionals developing and managing large integrated information systems such as MIS that frequently included accounting as a subsystem.

Accounting and other business functions are currently in a transition between the final stages of the industrial and the initial stages of an information era. This creates significant uncertainties as these functions evolve from the business practices and activities that were successful in an industrial era to those needed in an information based economy. Current advances in computers, DBMS and communication networks enable accountants to play a more active role in the application of information technology to meet new and emerging information needs. For accounting this represents a continuation of its historic role in applying data processing technology prior to punched card and computer systems and a continuation of its historical role in supporting economic activity.

The evolution of data processing technology and accounting reflect many of the social and economic aspects of the agricultural, industrial and information eras. However, the interaction between social and economic changes and the transition between economic eras upon accounting is poorly understood. Additional research into these factors can aid in understanding why accounting arose around 8000 B.C. and remained relatively unchanged throughout much of the agricultural era. Double entry has remained the primary model for supporting accounting despite the transition to an industrial and information based economic system. An analysis of the factors that have contributed to its use over time and its adaptation to different economic eras could be useful for understanding its continue application in supporting economic activity. These insights might aid in understanding the usefulness and shortcomings of double entry in future stages of an information based economy.

Research also appears needed into the application of mechanical devices and punched card systems in accounting. These systems were a precursor to the information age. However, studies of their application and analysis of their impact on the emergence of an information era are limited. Additional re-
search also appears needed into why accountants delegated punched card and later computer systems to EDP professionals. As noted earlier, this represented a break with their historical role in applying data processing technology. Finally, research also appears warranted into the emergence of the EDP profession and its impact on the application of computer technology. EDP professionals have played a significant role in the initial stages of the information era. Yet little is known about factors motivating these developments.

REFERENCES


De Roover, R., “The Development of Accounting Prior to Luca Pacioli According to the Account-Books of Medieval Merchants”, in A. Littleton and B. Yamey,


Kee: Data Processing Technology and Accounting

Luzzatto, G., *An Economic History of Italy From the Fall of the Roman Empire to the Beginning of the Sixteenth Century*, New York: Barnes & Noble Inc. (1961).


WRITING AN ACCOUNTING OR BUSINESS HISTORY: NOTES TOWARD A METHODOLOGY

Abstract: Historical research in accounting and business includes many subject areas, including the writing of histories of accounting and business firms. Each subject area of historical research must be undertaken by utilizing appropriate research methodology. In this article, a research methodology is presented to assist those interested in writing an accounting or business history.

Of all kinds of writing, that of preparing an accounting or business history is the one, in the opinion of the authors, that requires the most patience, fortitude, and attention to detail. Moreover, it is the one that historians often avoid because it has the potential of introducing between the writer and subject a bureaucratic barrier that unless approached skillfully and diplomatically can scuttle the best intentions of the best historian.


Basically there are two categories of accounting and business histories. The first and least complex are those that center on companies that no longer exist and whose executives and employees are deceased. The writer’s task in preparing histories such as these revolves primarily around gathering extant data, including peripheral materials of how the company interfaced with other businesses of the time. Next the job is to assimilate these data, arrive at conclusions concerning the company, and
prepare a manuscript that tells the story of the company. Points to be covered, among others, would be its relevance to the era in which it existed, what the contemporary reader can learn from knowing how that company functioned\(^1\) and what kind of society it reflects.

For accounting and business histories of this kind, where the business is defunct and those connected with it are deceased, the writer does not have the burden of concern with personalities. To be sure, the men and women who guided the company will need to be characterized, but in the event that one of them, say, exerted a negative influence on the business, the writer is at liberty to write about the person's inadequacies with impunity. In short, the writer is free to interpret the company and those who ran it without being held accountable to living people who could influence the final written product (editors and publishers are, of course, the exception).

The majority of accounting and business histories, however, will be of a second kind. These are the ones that center on the contemporary business world. In histories such as these, the writer will be dealing with companies that have prospered with each consecutive managing partner, president, and CEO, as well as other strong company leaders, making his or her contribution to the success of the firm. These are the kinds of histories that lead writers to evaluate performances and assess the importance of people’s contributions, in short, to second-guess those who were involved in the day-to-day operation of their companies, while the writer was, of course, not a participant.\(^2\)

It is the histories from this latter category that prove most problematical for the accounting and business historian. Needless to say, there are countless unpublished histories in countless businesses' archives that are destined not to see print because some individual or group could not tolerate either making sensitive matters public or having people’s personal lives put on display. More importantly, such histories often remain unpub-

\(^1\) Editor's Note: This is a key point.

\(^2\) The discussion in this manuscript is from the perspective of the author of the accounting or business history being a non-participant in the operations of the company. However, accounting and business histories may be recollections by the author such as Carey's [1969-1970] two volumes on *The Rise of the Accounting Profession*, Olson's [1982] *The Accounting Profession—Years of Trial: 1969-1980*, and Moonitz's [1986] *History of Accounting at Berkeley* [Previts, et al., 1990].
lished because the historian and key personnel did not see eye
to eye when envisioning what a given company was or what it
became. It is these histories, and how they can be researched
and written, that are the focus of this paper.\(^3\)

**TWO CAN BE A CROWD: JOINT AUTHORSHIP**

Anyone scanning library holdings inevitably turns up works
produced through joint authorship. The findings of a recent
study by Urbancic [1992, p. 49] suggest that currently the ma­
jority of scholarly accounting research is co-authored. The dif­
ferent viewpoints and expertise of co-authorship tend to im­
prove the quality of the research [Urbancic, 1992]. There can,
however, be problems; and anyone contemplating writing an
accounting or business history should be cautious in entering
into a project with another writer.

In selecting a co-author, "flexibility," "trust," and "honesty,"
are the working words. It is imperative that writers working
together be able to put egos aside and listen to each other's
observations. If one tries to dominate the other, friction will
surface. Moreover, if two writers enter a hastily conceived joint
proposal without coming to an understanding of what is to be
done and how it should be done, they are probably in for future
trouble. Think about how you as authors will interact when
questions have to be answered and problems, many of which
will not surface until the project is underway, have to be solved.
When contemplating a joint-authorship project it is safe to as­
sume that any shortcomings, inadequacies, or personality prob­

---

\(^3\) The research methodology presented in this paper is discussed from the
perspective of writing a history of an accounting or business firm. However,
the methodology presented would be applicable to writing histories of
professional accounting organizations such as Zeft's [1966] *American Account­
Institute of Internal Auditors: Fifty Years of Progress Through Sharing*, Coffman,
of CPAs, Founded in 1905*, Davis's *Certified Public Accountants in Mississippi,
Public Accountants, The First Seventy-Five Years: 1909-1984." Some tips on
writing a state society history are presented by R. Vangermeersch in "Tips for
Writing a History of a State Society of CPAs," *Accounting Historians Notebook*
(Spring 1982), pp. 1, 16.
lems in a prospective collaborator are sure to be magnified as the project progresses. On the other hand, if you locate someone with whom you feel totally comfortable and whom you totally trust, the collaboration might well produce a better history than you could if working alone.

EARLY MEETING OF MINDS BETWEEN COMPANY AND WRITER A NECESSITY

It is essential that a historian preparing to write an accounting or business history be compatible with and have a rudimentary knowledge of the subject he or she is preparing to write about. If there is a fundamental difference between the historian's outlook and the goals of the company, it is unlikely that a satisfactory manuscript will emerge from the labor.

The prospective historian of an accounting or business history would be well served to have a grass roots overview of the company in question: know something about the company before undertaking the task of researching and writing about it. Such an observation might sound parochial, but in the long run if the historian is compatible with those who run the accounting firm or business and if the historian knows how the company works, he or she will find that those in the business will be more willing to cooperate. Business people are neither historians, writers, or scholars, but they can be brought into the process if the historian exhibits a knowledge of what it is they do. Important to remember also is that good business history will rest in large part on myriad interviews. If the historian can bring to interview sessions a grass roots knowledge of the firm, conducting the interviews will be easier.

PRELIMINARIES

One way to gain the trust of management, without whose cooperation and approbation an accounting or business history is doomed, is to build into early negotiations escape routes that can be taken by either party, but only up to a certain point in the project. No matter whether the history is being written for pay or the scholarly contribution the historian hopes to make to the profession, it is wise to have a contract that will free either party should the necessity arise. It is wise also to set a timetable, based on chronology or progress, for review of work completed. Such a schedule might be set so that either party can
terminate the project following review of the outline, completion of the first few chapters, or other convenient divisions in the project.

There must be a point, however, where neither the historian nor company officials can end the project without penalty. This is no more than good business practice, one that forces all concerned to make decisions based on observable data before an inordinate amount of time and money have been expended. Ideally, that termination point should be reached after the historian has been given access to company papers and archives and has had the opportunity to evaluate them and commit himself or herself in prose to at least a rudimentary interpretation of them. By this time, the historian will know whether he or she has the desire to continue the project. In like manner, the company will know whether it can work with this person.

ESTABLISHING A METHODOLOGY

Depending on the size of the company, there are materials to which the historian must be given access. Also the historian should have in the organization a liaison person who is committed to spend the necessary time to see that the historian is routed to the proper offices and people for information and interviews. Materials to be collected, which the company should allow to remain in the keeping of the historian during the time the project is in progress, include: annual reports; responses to APB, AICPA, and FASB exposure drafts; minutes from key committees; full press runs of all company promotional, explanatory, and advertising materials; full press runs of company house organs; informational documents sent to employees; press releases to local, regional, and national media; press stories that relate to the company; files of labor negotiations, if relevant; copies of obituaries of former company members; copies of newspaper feature or news stories centering on employees; copies of speeches given by officials; and copies of any court decisions involving the company. The historian should also have access to personnel files, although this point can often be a sensitive one that may have to be negotiated. The historian should be legally responsible for such documents, and should be prepared to relinquish them periodically when they may be needed by the company. It may be a good idea for the historian to be bonded by the company during the period that the project is in progress.
In situations where the company's internal records are poorly stored, have been lost in transit, or destroyed due to fire or selective retention programs, the historian should seek out buffs (employees who save every company document and in-house publication) and collectors (employees who keep copies of their correspondence at home) [Bennett, 1988; also Previts, et al., 1990].

After the above materials have been collected, the task is to read those documents that will give the writer an overview of the business. Company publications aimed at employees and the public are usually good places to start. This should be followed by reading clipping files, if they exist, that center on what has been written in the media about the company. Annual reports are next to be looked at as they will give the writer an overview of such things as: cash flow, earnings, major board decisions, and changes in accounting principles.

As the reading progresses, questions will arise. They should be recorded, to be answered with the company liaison person. It is a good idea to tape sessions such as these because information that can lead to ideas the historian might not have thought about could otherwise be lost.

By the time the writer has completed the foregoing, he or she has a wealth of information about the company, albeit most of it of a general nature. By this time also, the writer should make it a point to meet as many company personnel, from all levels of company ranks, as possible in order to come to some understanding about how people relate to their jobs, their superiors and subordinates, their colleagues, and the firm at large. At this point, the historian might also consider checking local newspapers in the area in which the firm is located. Many papers have myriad clippings in their libraries and are willing to make them available for a nominal copying fee. Barring the existence of such files, one might have to resort to the time consuming, but often rewarding task of reading through press runs of the newspapers on microfilm. Such materials are available in area libraries, state libraries, or the Library of Congress. For example, obituaries of company personnel often yield more that facts about the deceased. It is surprising how many dates, events, and leads to other sources often turn up in them.

At this point, the historian might consider making contact with present or past business editors of local newspapers. Often these people, who cover a business beat on a day-to-day basis,
have information they are willing to share. Any interview should be taped, providing the subject is willing.

The next thing to be done is to work with the liaison person in order to learn how departments are organized, what company committees handle what kinds of problems, how various programs such as profit sharing arrangements for partners, stock options for employees, and retirement benefits, for example, are handled. Each business will have its own internal structure; therefore the researcher will have to make his or her own list of topics to be covered.

ENLARGING THE AREA OF COVERAGE

If all has gone well to this point, the historian will have accomplished a great deal. He or she has by now a good knowledge of the business, has gained the confidence of people in the company, and has learned the strengths and weaknesses of the liaison person with whom he or she is working. By now, it also has become apparent how important and how valuable the liaison person is. The willingness of that person to work with the historian can make or break the project, and this is the point at which the historian should know if a change needs to be made. A frank discussion of needs and expectations might take place now.

If the company's history goes back a number of decades, the historian might want to pause at this stage and make an effort to interview retired company employees; the longer the historian waits, the fewer of them will be living. Probably all retirees cannot be interviewed, but the historian should make every effort to talk with those who worked at all levels in the business. Former partners and executives as well as rank-and-file employees will have, by retirement time, gained an objectivity that perhaps they formerly did not have. Moreover, because they are in retirement, many of them may be anxious to be involved again. Often too they have information and will be willing to grant interviews about the company as they remember it. Sometimes they will have scrapbooks, itineraries, newspaper stories, or personal papers they are willing to share. The historian should also keep in mind that people who worked in minor positions will often make observations that will dovetail with those a higher-level person makes in a different interview. Taken together, such information helps in building a final three-dimensional picture.
GETTING THE INTERVIEWS UNDERWAY

Care should be given to preparing questions to be asked, and as far as possible each subject should be asked the same questions, because, through this method, themes and trends that can be used in the finished product begin to emerge.

Interviewers sometimes press their subjects too hard, demanding answers to all questions. This may make for sound bites on the six o'clock news, but for the person writing business or accounting history it may serve to alienate. Interviewers working on projects such as those discussed in this paper should be considerate, if not always completely accommodating. If the subject asks that the tape recorder be turned off while he or she tells a confidential or controversial story, the interviewer will get better cooperation later on and perhaps more consequential answers if the request is granted.

Because most interviews of the kinds discussed here will usually run into numerous sessions, subjects will become more candid if they think the interviewer is not trying to pin them down or trick them. As this confidence grows, comments that the subject refused to make early on will often be forthcoming. Often, especially when interviewing senior members of a company, interviews of five hundred pages or more are not unusual. When the time comes to prepare a rough draft such interviews are indispensable.

ASK THE SAME THING AGAIN AND AGAIN ... AND MAYBE AGAIN

A useful format for the interviews might be as follows: First, ask the person's name, place and date of birth, education, and the date he or she joined the company. Second, have the person detail each job held since joining the company, with particular explanations of any technical aspects of the job. Third, ask the interviewee to characterize each major person with whom he or she has worked in the company. (Often observations will conflict between persons. The historian will have to sort this out later.)

If all interviews cover identical ground, however, there would be a tiring sameness in materials gathered; and that sameness would manifest itself in the finished manuscript. For this reason, the historian must elicit from each interviewee his or her unique views of the company. With this in mind, the
A historian would do well to confer with the liaison person before the interview in an attempt to find out something of the personality of the person to be interviewed: Is the person easy to get along with? Does he or she have a sense of humor? Is he or she shy or outgoing? Does he or she have a distinct way of dealing with people? Does he or she have one personality at the office and another away from the office? Is the person modest or garrulous about personal contributions to the company?

In the final stages of the interview, each person interviewed might be asked two questions: What is the worst thing that ever happened to you during your tenure with the company and what is the best thing? These two questions often elicit candid remarks that give useful information.

A WORD ON INTERVIEWING TECHNIQUES

A few years ago, oral history as a method of recording the past made its presence felt. Although oral history has not been used extensively in accounting history [Collins and Bloom, 1990], there is evidence that its use is receiving more attention. In 1986, Leonard Spacek received the prestigious Hourglass Award of Accounting Historians for his book and videotape entitled, The Growth of Arthur Andersen & Co., 1928-1973, An Oral History. The oral interview with Spacek was captured on nine hours of videotape [Accounting Historians Notebook, 1986, p. 10]. Oral history is a valuable research tool in writing accounting and business histories. However, the interviewer should bear in mind that it is easy to intimidate people by sticking a microphone in their faces, or slipping out a tape recorder and placing it on a desk or a coffee table in someone's home. Far more effective is to make contact with the subject in advance, tell him or her what is being requested and supply information about the need to record the session(s). It is also a good idea to supply, also in advance, a written list of the ground to be covered and the questions to be asked. There will be time enough later, providing the interview goes well, to relax and become spontaneous.

---

4 For discussions on the advantages of oral histories, and the process of gathering oral history, see M. Collins and R. Bloom, "A Primer on Oral History," Accounting Historians Notebook (Spring 1990), pp. 32-33.
ON TRANSCRIBING INTERVIEWS: BAD GRAMMAR IS GOOD

Before interviewing begins, arrangements should be made to have someone transcribe them. The same transcriber should be used throughout the project in order that all interviews be uniform. Also, it is important that the transcriber be given instructions to transcribe all conversations verbatim. The transcriber must avoid the temptation to "clean up" subjects' language and grammar. Business histories can be dull, and sometimes a few lively candid words used in appropriate settings can add needed candor or levity. If the historian decides he or she wants a more formal approach, a later decision to regularize grammar and edit out colorful language can be made. By having the transcriber adhere to the felicity of the words in each interview, the writer has the option of deciding how best to use them.

ORGANIZING THE INTERVIEWS

When the interviewing process is complete—and there could be as many as two hundred or more—some order must be imposed on them so that in the writing stage the historian can locate data quickly. The most effective way is for the historian to read each interview and index each according to events, personalities, important facts, and important decisions that affected the company. Interviews should be filed according to last name, but the indices should be kept separate for reference.

WRITING: DID SHE OR DIDN'T HE?

When the historian has reached this stage, two or more years may have elapsed. By now he or she knows the company, its personnel, the way it conducts business, its strengths and weaknesses, where it has succeeded and failed, who the major players have been, and the like. It is now time to put words on paper.

Although it is not necessary to write the history in chronological order, the best way to get the bulk of collected material in hand is to prepare a chapter-by-chapter outline. Careful thought and planning should go into this phase of the project, consulting the myriad sources collected. Any standard writing text can be consulted for the best way to set up outlines, but in any case a great deal of time and effort should be expended
here, with details of the history being worked out before the writing is undertaken.

When the outline is complete, the historian may wish to submit it to the liaison person for evaluation, or he or she may decide to wait until a later time, when sample writings have been completed. In any event, the decision of how to proceed at this point should be a joint one, made by the historian and liaison person and others in the company who have become involved in the project.

Now comes the difficult part: how to accurately interpret data. It goes without saying that an accounting or business history is just that—the history of a company. It must contain such things as facts, figures, trends, company decisions, committee decisions, annual growth, and profits and losses. Data for this part of the history will come from several places, most of which are listed early in this article. A great deal of such data are also to be found in the interviews.

Provided that the writer has been careful in preparing indices to the interviews, large sections of them can often be turned from first person responses to third person prose explanations of varied aspects of the business. For example, if several people were involved in an action or decision and relay this to the interviewer, their interviews could serve as a third person description of that action or decision. As verbal reinforcements for these sections, pertinent quotations taken from the interviews can also be used. Newspaper clippings and committee minute books also come into play here as the historian weaves a verbal tapestry from a multitude of disparate sources.

However, an accounting or business history is more than the retelling of events, trends, and the recitation of figures: it is a history of the people who made the business. The historian must be accurate, but also be fair when dealing with persons who played key roles in the organization. This is where the typed interviews again play a role. Suppose, for example, that the historian must characterize a life-long employee, now deceased, who built up the foreign operations of the company. If all those interviewed say that the person was kind, generous, firm, affable to work with, and considerate of others, the task is an easy one: There is a consensus and the historian has little more to do than reflect that consensus in the manuscript. Suppose, on the other hand, that the executive in question was viewed differently by different people who were interviewed.
Some say that the person was indeed an excellent business person, one who moved the company onto the international stage, who doubled profits, was a good husband or wife, and a faithful church member, and was attentive to the needs of his or her family. Others, however, might report that although such observations are accurate and that the person was good for the company, he or she would have been better without the irascible, mercurial, temperament coupled with a tendency to berate subordinates. Moreover, the person had a drinking problem, kept hidden from associates, that may have impaired his or her efficiency. How does the historian deal with these data?

First, one might answer "carefully," but there is more to it than that. The historian needs to keep in mind that the task in which he or she is engaged is writing a history of a company, and unless a person's personal life influenced business decisions, and such can be proven, personal lives are not the subject of the study at hand. If they did affect decisions, they should be handled as objectively as possible, perhaps buttressing generalities with quotations, which need not necessarily be attributed by name, from the interviews.

HUMOR CAN BE FUNNY . . . IF

If the historian is not careful, he or she can turn out a finished product so pedestrian that few, other than those in the organization, will want to read it. One way to avoid this is by careful and judicious use of humor. For example, Flesher's AAA history used several humorous anecdotes in the section on annual meetings. [Flesher, 1991, pp. 47-57]. When preparing the indices from the interviews, discussed above, the historian might have a separate category for humor. It is surprising how many funny stories, many of which can be used, will surface; but there are a few rules that must be observed.

No humor based on anti-social, racial, ethnic, sexual, linguistic, religious, or physical characteristics should be used. Nor should incidents that reflect contempt for the law or the general well being of society. That is not to say, however, that such humor cannot be rewritten in order to remove such negative connotations. Amusing stories that reflect on executive decisions, working conditions, problems of auditors or salespeople on the road, in short all the little things that make up the day-to-day routine of businesses, can provide moments of levity if judiciously handled.

https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
REWRITING: WHO SHOULD HELP?

In the world of journalism, there is a rule that the subject of a story should not be allowed to see that story and thus influence its content or direction before it is published. The intent of the rule is that objectivity is of prime importance and should not be compromised. Does such a rule apply to an accounting or business history? The question evokes an equivocal answer: yes and no. This problem will be a major one with which the writer must deal.

Ultimately, the writer must make up his or her own mind how much the integrity of the manuscript might suffer if major rewriting is allowed. There are, however, some observations that should be made concerning how much those in the organization can aid the writer.

First, it should be made clear from the outset of the project that “group rewriting” or “committee rewriting” is impossible to perform. When a group gathers with the intent of rewriting a document it is rare for the end product to even equal the original in accuracy, precision, and prose quality. Far better that the historian first take the comments of his or her readers, who have now suddenly become critics, and then perform the necessary rewriting in solitude. When considering committee rewriting, it is wise to remember the old saying: a camel is a horse designed by a committee.

Aside from this caveat, it is impossible to state ironclad rules about rewriting. One method that is particularly effective, however, is to circulate copies of the manuscript to a predetermined group in the company (to be worked out with the liaison person) and ask each person to read it and mark it up just as if it were a student paper that was being graded. The historian can then conflate suggestions and emendations and perform the rewrite he or she feels is necessary. This completed, the historian can meet with the liaison person and perhaps set up a meeting of all concerned, at which time the historian can explain how he or she arrived at the final manuscript—as amended.

Another observation from the world of journalism states that if one reader discovers major flaws with a story, hundreds of others will also. This is an observation that the writer of the accounting or business history should remember. For this reason, he or she should take seriously what readers have to say. It may be that the historian chooses not to incorporate changes suggested by a reader, but if he or she does not, preparations to
defend such decisions are necessary.

After the manuscript has been completed, the writer will, of course, put it through several revisions in order to produce as professional a product as possible. At that point, he or she might work through the liaison person and request a session with the appropriate people in the company who are willing to read and criticize what has been written. A session such as this, which might evolve into meetings over several days, should be looked at by the historian as an aid to ensuring accuracy, rather than as a fault-finding session. Although they might necessitate extensive rewriting, invaluable information can come from such sessions.

BEWARE THE "VANITY" REWRITE

If the historian has done the job properly, the final product should be a manuscript that covers the whole range of the company. He or she has interviewed both executives and employees, and has produced a work that places the company and its operation in the context of the times and also sees it in relation to other companies.

At this point in the project, the historian must be prepared to defend formally what he or she has done, as well as why it has been done the way it has. Although such a defense may be friendly, it should be sufficiently firm that it proves the integrity and accuracy of the study. It should not, however, be so iconoclastic that it closes doors to needed emendations by those in the company who have the knowledge to do so.

The reality is that the most important people in the company are likely to be those who are tough minded and used to giving orders, not taking them. Often self-made, they will view their personal successes as evidence of their business abilities, and they will almost certainly transfer these attitudes to their evaluation of a written history of their companies.

Dealing with the most serious potential problem first, some company readers will likely want to enhance their (or their colleagues’) contributions and qualities. They may want parenthetical superlatives such as “the first,” “the most,” “the originator of,” and so on, inserted in conspicuous places. Or they may want extensive, sometimes irrelevant, biographical data included. It is the historian’s duty to inform such well meaning commentators that additions such as these weaken the effectiveness of an otherwise objective study. Moreover, unless the
manuscript is scheduled for publication by the company itself, editors in publishing houses are almost certain to delete such addenda. Negotiations at this point require the utmost delicacy. It is not the time for the writer to take umbrage or be unduly defensive; rather it is one for patient explanations and a manifest willingness to receive constructive assistance. By now, all parties should know each other well, and all should be committed to producing the best objective product they can.

Two key questions remain: what if one of the readers in the company edits out something because it casts the company in a negative light; and what if a key individual asks the historian to omit something because it could potentially embarrass the company or some individual involved?

If the historian was hired by the company to write the history, then he or she is in actuality working for the company and the products of the labor belong to the company. If on the other hand the historian is an independent researcher and the finished product belongs to him or her, what must be done when such demands are made?

In the first place, the historian should never have allowed the project to get this far without the company's knowing what kind of story is being written. For this reason, the liaison person should be asked to read and make suggestions at all the major steps along the way. However, one must recognize that there could conceivably be a stumbling block toward the end. There are two things the historian can do if such occurs: one is to negotiate calmly and deliberately, and ultimately probably to compromise, at least to some degree; the other is proceed without the approbation of the company. The latter route may well, however, close doors. Only the historian can make this decision.

PHOTOGRAPHS AND OTHER IMAGES

Accounting and business histories are enhanced by images that supplement the words in the text. With this in mind, the historian early in the project should begin collecting art work. Such materials will come from many sources.

If the organization has its own photography department, it might well have a negative file that the historian can consult. Other images can often be obtained from local, regional, and state public and private historical societies, and from local newspapers' libraries. (Newspapers, however, keep no negative files of pictures they do not publish, and they rarely keep those
they do publish longer than five years.) Another important source of images might be older company members' personal scrapbooks. In addition, local portrait studios should be checked to see if they have pictures of company executives. The historian should remember that a professional photographer will be able to produce usable black and white prints from any clear photograph, and that portrait studios keep negatives on file indefinitely.

Photographs, and permissions to use them, can be expensive. Historical societies usually charge one fee (about ten dollars each) to supply clients with an 8" x 10" black and white photograph, but they also charge another twenty-five to fifty dollars for the rights to publish each one. Perhaps the historian should build in such costs at the beginning of a project. The subject company might be willing to pay such costs.

For the most part, color photographs are usually prohibitively expensive, not to obtain initially, but rather to publish in book form. The historian will probably have to settle for one color picture, the frontispiece or dustjacket, if that.

In the event that monies are available and current photographs are needed, the job of making them should be left to the professional, who will use a 4" x 5" negative format. Color slides, in 35mm size, can be used, but the resulting quality is not as good as that obtained from larger format cameras. Unless the historian is a highly skilled photographer, he or she will not be able to shoot publishable images in either black and white or color. A 35mm camera with a 50 or 55mm lens, whose film will be processed and printed by a local photofinisher will not yield adequate results. The problems are to complicated to explain here, but they revolve around composition theory, image size, focal length of lenses used, filters, fine-grain developers, and the ability to crop and print in the darkroom.

Tables, figures, and charts are also usually needed to highlight data that do not lend themselves to words. If funds are available to pay for such work, places to seek advice, and sometimes even assistance, are graphics directors of local newspapers, artists in local companies large enough to employ them, or commercial art and drafting instructors in local trade schools, high schools, and colleges.

**GOING THROUGH THE PRESS**

When completed, the history can be published in one of
two ways. If the company has underwritten the project, it may plan also to cover publication costs. On the other hand, the decision may be to seek a commercial publisher or a university press. The historian should understand the time involved in each case.

If the company acts as publisher, a manuscript can be delivered to the print shop and a galley proof received in about four or five weeks. Page proofs will be delivered in an additional two weeks or so, and the book delivered to the company in about another four weeks. (Books bound in hard cover take additional time because the final printed sheets have to be delivered to the bindery, where the book will be held up an additional few weeks.) If an index is planned (as a general rule, there should be an index), it cannot be prepared until the book is in page proof, and the index itself will then have to be proofread in galley and page format. All things considered, if the company acts as publisher, it will take from about eight to twelve weeks to get the final product after the manuscript goes to the printer.

If a printing company rather than a publisher is the choice, it is imperative that a professional editor be added to the project before it goes to the printer. It is difficult for a writer—even two writers—aided only be secretarial help and volunteers, no matter how willing, to produce the kind of book that would be the result of a professional editorial staff at a publishing house. No matter what the choice, the historian must at this point be prepared to select art work, write captions for pictures, read proof, and perhaps even undertake the onerous chore of compiling the index. One other point to remember is that illustrations should have captions that can be understood without making references to the body of the book.

If the historian goes the university press route, he or she should be prepared to wait sometimes as long as a year before the press makes its decision whether to publish the book. Commercial publishers are much faster, the decision time being about four to eight weeks.

University presses are often good publishers for accounting and business histories, but many such presses have house policies against publishing them. National publishing companies almost always work through agents, rarely accepting unsolicited manuscripts.

In the event the book is to underwritten by the company that is its subject, the historian should look for a printing com-
pany that has experience in producing book-length works. Copying services are ill prepared to offer advice and lend assistance in the many details to be attended to as the book goes through the publishing process.

After the manuscript has been completed, the historian, if looking for a university press, should write a detailed (about two pages single spaced) feeling letter to the Acquisitions Editor, explaining the project, the length of the manuscript, whether it is on disk or hard copy, and include one or two sample chapters plus a synopsis of the remainder of the work.

CONCLUSION

The major conclusion is obviously that business histories take time to negotiate, research, write, and see through the press. The historian should count on at least two years from start to finish for a small to medium size company, but five years would not be uncommon. An international organization, for example a Fortune 500 company, might take even more. An "appreciation" book can be written much more quickly, but if the historian wants to tell the story of an organization from the inside out and the outside in, care and time must be invested. The historian has to get to know the organization and its people almost as well as if he or she worked there. Uncounted people must be interviewed, and their words handled with care and accuracy. Work locales from all levels of the company must be visited, notes taken, impression jotted down or recorded on tape. If such an approach is used, the historian should be able to write a history that will stand the test of time, accurately showing future readers what the business under consideration was like. Company histories, "are increasingly disappearing without a trace, as more companies are restructured, sold off, shut down, or otherwise dismantled. And if corporate evolutions aren't recorded, the lessons of the past will be lost" [Bennett, 1988, p. 19].

REFERENCES


Moonitz, M., *History of Accounting at Berkeley*, Professional Accounting Program, School of Business Administration, University of California, Berkeley (1986).


Abstract: This paper examines historical methodology and suggests ways accounting history may be made more relevant to contemporary accounting researchers. First there is a brief discussion of the "traditional" accounting history method, the documentary model, and an examination of history methodologies that offer alternatives modes of inquiry. This includes the pattern model and rhetorical analysis. This discussion is brief and focused on only issues examined in subsequent discussion of the empirical research. The discussion of the empirical research, including behavioral research, focuses on three issues: retrodiction, with examples concerning securities legislation; belief transference, with examples concerning the demand for auditing; and methodological transference, with examples from the behavioral literature including a discussion of the importance of historical context and sensitivity. The objectives are [1] to show how all researchers need to tell more plausible stories and how historical analyses can clarify and enhance understanding of the complex environment in which accountants function, [2] to suggest fruitful areas for future accounting historical/empirical/behavioral research and [3] to issue a call for diversity, tolerance, and a free exchange of ideas—stressing these as values that cannot be separated from accountants' research activity.

Ball and Foster's [1982] methodological review of empirical research highlights the difficult tradeoffs that empirical researchers face when attempting to integrate the institutional environment of accounting with the constraints imposed by abstract models borrowed from economics, psychology, statistics, and mathematics. Ball and Foster address validity issues and offer several explanations, such as competing world views, as to why this body of research has been less than convincing, concluding that one reason may be that accounting empiricists do not tell "plausible" stories.1 Since, as Williams [1992] points out,  

1Ball and Foster [1982] address four validity issues—internal, construct, statistical conclusion, and external validity—associated with quasi-experimental
accounting empiricists rarely test theories, they use theories to shape empirics into coherent stories, the failure to tell plausible stories is a fundamental failure.

Accounting historians could contribute meaningfully to the ongoing empirical debate. If understanding precedes interpretation in any explanatory research project, then historical analyses of topics of interest to empiricists, as well as historical critiques of empirical models, would be useful contributions to the accounting literature. This paper calls for more historical inquiries to address issues raised in the empirical research, although we do not imply that accounting historians have not addressed these issues, that is not the case. However, given the enormous resources that have been expended within the academic community on empirical research over the last three decades, the inconclusive results should be of concern to all accounting academicians. Our overall objective is to stimulate a dialogue among accounting academicians, particularly between historians and empiricists and between traditional and critical accounting historians.

To enable readers to position this paper, the terms—traditional and critical—historical research are defined. The term traditional refers to historical inquiries that attempt to render the past familiar, the term, critical, refers to those inquiries that try to render the familiar, unfamiliar. These two types of research are complementary, although they often result in conflicting interpretations of the historical record. Traditional in-

design and six world views—the six world views are the Accounting Model View [matching, cost allocation], Economic Reality View [true income theory], Fair Presentation/Comparability View, Economic Consequences/Firm's Stockholders View, Economic Consequences to Management View, and Regulatory Compliance View.

Positive research is one area that has generated a great deal of historical attention, see for example, Tinker, et. al. [1982], Mills [1988], Mouck [1989], to name a few, who have pointed out the limitations of this body of research. See Mouck [1992] for an interesting rhetorical analysis of why positive research has been successful and for discussion of dismissal of criticisms, which could be predicted, given the rhetoric of positivism.

The authors accept Ball and Foster's [1992] characterization of the research they examine as empirical, recognizing that some taxonomies would limit that term to experimental research and label this body of work archival [See Buckley, et. al., 1976]. Since the empirical usage is common in accounting, that label is retained since many readers will associate this term with research that lays claim to scientific status, an important attribute in subsequent discussions.
quiries attempt to examine the past on its own terms; the objective is to gain an empathetic understanding of why people behaved as they did in a particular circumstance. Critical inquiries focus on how discursive practices or dominant institutions have served as filters that enable powerful interests in a society to control others without their knowledge; the objective is to bring to light the negative and silent aspects of a discipline or society.

This examination of the explanations offered by accounting empiricists will be traditional in that the fundamental premise of economic rationality that underpins accounting empirical research, perhaps the most potent discursive filter in contemporary society, is not challenged. The purpose is to show why, even if one examines empiricism on its own terms, the stories that empiricists tell do not always appear plausible. While a critical historical analysis of empirical research is not conducted, to the extent possible, we suggest the questions that critical researchers might ask are indicated. Also included is a brief discussion of the rhetoric of reason to highlight the more fundamental challenge that a critical perspective would engender with respect to empirical accounting research.

The above analysis is presented because it is important to establish a meaningful dialogue between traditional and critical accounting historians. Kuhn's [1970] conclusion that advances in science do not occur through incremental advances within a dominant paradigm, but through sharp breaks with that paradigm, certainly gave impetus to critical work in all disciplines. Accounting has been no exception. By examining how accounting discourses and its calculative techniques serve the dominant economic interests in a society, support class structures, and mask societal conflicts, critical accounting histories have highlighted the complex, interactive, and constitutive nature of the discipline. Critical researchers have rendered the familiar, 

---

4It is not suggested that reenactment is possible; see Martin [1977] for discussion of empathetic understanding and why most historians reject Collingwood's reenactment model. LaCapra [1985] takes a similar position when he writes that a good starting strategy for examining a document is to pretend that the author can talk back and to listen to the argument being presented.

5See Klamer [1989] for discussion of these attributes of critical research; accounting critical research has bee informed by a number of different perspectives, for hermeneutical inquiries (i.e., often called interpretive inquiry, hermeneutics rejects the idea that there is an a historical, objective truth that
strange and in doing so have raised a myriad of interesting questions for accounting historians. This essay is traditional in that the objective is to examine how accountants have arrived at their current state of knowledge.

Outline of the Paper

Our discussion starts with a brief overview of the documentary model, explaining why we do not accept the “extreme” form of that model, as reflective of “traditional” accounting history. Discussed are some aspects of the model that do have widespread acceptance among traditional accounting historians and the problems associated with the implicit directionality of the model. We conclude with a brief examination of two alternative modes of inquiry, the pattern model and rhetorical analysis, that can be used to guard against the consensus and continuity inherent in the documentary model. The discussion of each alternative method is selective in that the focus is only on issues relevant to subsequent discussion of empirical research.

The next three sections focus on particular, contextual issues raised by empirical research in relation to securities legislation, the emergence of audits in the United States, and the effect of comparative world views on interpretation of research. Retrodictive analysis is used to examine securities legislation in order to show why the pre/post SEC dichotomy found in empirical models appears problematic with respect to financial reporting. Some questions are outlined about interpretations of empirical results and we suggest areas for future research. The section concludes with a brief discussion of the rhetoric of reason to highlight how the assumption of economic rationality structures empirical debate and to highlight questions that critical theorists might ask.

Our discussion of the emergence of demand for audits focuses on belief transference, i.e., imposition of current beliefs on a prior period. We examine the reasonableness of the relationships (motivation and causality) implicit in the stewardship

exists independent of human life and culture, instead truth, knowledge and morality are seen as rooted in social practices and tradition), see Arrington and Schweiker [1992] and Boland [1989], for labor value and process theory, see Lehman and Tinker [1987] and Hopper, et. al. [1987], for Foucauldian, see Hoskin and Macve [1986] and Miller and O'Leary [1987], for feminist theory, see Shearer and Arlington [1993]; see Tinker and Neimark [1988] for discussion of historical research from a critical perspective.
and information hypotheses to determine if belief transference has occurred. Then, we focus on one specific audit issue, detection of fraud, to explain why economic analyses of auditing may simply be too narrow to provide an adequate understanding of the demand for audit services. We conclude with a brief discussion of critical research, related to auditing, to suggest areas for future historical research.

In the next section, our focus is on the issue of methodological transference to assess how comparative world views impact interpretation of research results in behavioral accounting research. Ebbinghaus's experimental simplification approach and Bartlett's introspective approach [see Crowder, 1976] are examined to address the issue. We conclude with discussion of the rhetoric of psychology to highlight why it is important for accounting behavioral researchers to be sensitive to historical context and the rhetorical metaphors they use when conducting their research.

The concluding section begins with a summarization of why empirical research has not resulted in plausible stories and the alternative strategies that could be used for future empirical research. Implications of this paper for future historical inquiries are discussed. Our message is simple—the accounting academic literature needs to celebrate diversity and keep conversations open if accounting researchers are going to respond adequately to the challenges facing the discipline. A commitment to a specific criterial standard of knowledge, a scientific method, will not be sufficient to achieve this objective; instead, accounting researchers must make a commitment to scientific mores—tolerance, the free exchange of ideas, and accurate reporting of results.

HISTORICAL RESEARCH

The documentary model has gained almost paradigmatic status in historical research. The model emphasizes collection of data, "objectivity" of sources, and sequential [chronological] analysis. The focus is on identification of regularities that can be used to give coherence and continuity to a narrative account. In its extreme form, as outlined by Elton [1967], the historian becomes an archivist, a simple reporter of facts. This form of

See Megill and McCloskey [1989] who note that the extreme form of the documentary model suggests that a historical accounting is akin to a “lab report to be written up.”
the model has been rejected by most historians for many years; it is considered an inadequate description of traditional accounting history, although some accounting historians might disagree. Traditional accounting history, however, does imply acceptance of some aspects of the documentary model that critical accounting historians would (or should) reject.

For example, the documentary model contains an implicit hierarchy with respect to sources, i.e., primary being more objective than secondary sources. Traditional historians accept this hierarchy. Since the hierarchy ignores the process by which documents may process or rework reality, the privileging of primary sources may mask the reconstructive and partisan use (to legitimize past actions or to close off unwanted prospective alternatives) of historical evidence. Therefore, critical researchers reject this hierarchy for, as LaCapra [1985] points out, there is no reason to value the discovery of a new document over a critical rereading of an old document or the account of a non-participant source. However, if one is trying to understand the actions and motivations of people from their perspective, then the primary/secondary dichotomy remains important [Potter, 1973, Martin, 1977]. The traditional historian's non-problematic acceptance of the documentary model's focus on motive, a rationalistic discourse, also would seem to be a distinguishing feature between critical and traditional historians.

These two aspects (hierarchy of sources and motivation) of the documentary model appear to be integral and appropriate aspects of traditional accounting histories. However, the documentary model's emphasis on sequential analysis, which may be best described as a continuous time series model, creates a directional bias that Mandelbaum [1977] points out may be inappropriate for specialized histories, like economics and accounting, that deal with cultural artifacts. He argues that the model's

---

7See Berlin [1966] and LaCapra [1985] for discussion of why historians have rejected the extreme form of this model. For an alternative view with respect to traditional accounting history, see Hopper and Armstrong [1991], for discussion of critical historiography, see Tinker and Neimark [1988].

8See Brown [1989] for discussion of the implicit rationality of the concept of motive; see Anderson [1989] for discussion of work of ethnomethodologists, who have found that people feel they should be "instructed by reason" so their retrospective reports of their actions are prepared as if they had been "instructed by rationality." The work being done by ethnomethodologists clearly has implications for assessment of "primary" sources.
focus on continuity and coherence makes it difficult for the historian to recognize discontinuities created by cultural importation, a frequent phenomenon in specialized histories.9

Conversely, a sequential analysis that focuses on an event as the terminus of a process, may depict that event as a discontinuity, when it is not. Carr [1961] describes a “critical” historical event (a discontinuity), as an event that significantly changes existing relationships. The pattern model, discussed below, checks the impulse to focus on regularities and provides guidance for determining if an event is a critical event, warranting periodization.

The Pattern Model

Kaplan [1964] suggested the use of the pattern model for explanatory research in the social sciences. This model offers a research tool which enables researchers to deal with complex, interrelated phenomena. This model, like deductive models, constructs explanations; the difference is that the pattern model does so by relating an event to a set of other elements that together . . . constitute a unified system. Kaplan [1964, p. 33] defines objectivity as continuously examining evidence to fill in and extend the pattern as researchers obtain more knowledge. Complex events are made meaningful by identification of causal connections; the resultant explanation becomes part of the pattern, but that pattern emerges only retrospectively.

Retrodiction

Porter [1981] combines sequential, analytic and hierarchical analyses to adapt the pattern model to historical inquiry. The historian uses sequential analysis to highlight regularities, but this analysis serves primarily as a heuristic for further inquiry. Continuity serves to make novelty intelligible. Porter [1981] uses the term retrodiction, selecting a point subsequent

9Cultural importation occurs in accounting when an accounting technique, practice or theory is found in a nation, although it is inconsistent with the socioeconomic or cultural structure of the host country. The rather odd groupings that have surfaced in “cluster” analysis of accounting practices that suggest that the Mexican socioeconomic condition and culture is more like the United States, than is the United Kingdom’s, perhaps best reflect the fact that cultural importation occurs; see Frank [1979]. Alternatively, these clusters may occur because the data being analyzed are misleading; see Nobes [1991].
to an event and working back toward the event, to describe the analytic phase of historical inquiry. Retrodiction involves more than reverse sequential analysis in that the effects of an event emerge and gradually absorb its causal antecedents; the event and subsequent actions, give new meaning to evidence gathered in the sequential analysis [Porter, 1981].

For example, actions of any group may be symbolic, designed to respond to external criticism without affecting real change. Whether an action was symbolic, however, cannot be known until the event unfolds and subsequent actions give meaning to evidence previously examined. Retrodiction also increases awareness of any unintended consequences of an event and makes it easier to identify chance events in the antecedent period, both important factors in specialized histories. Porter [1981, p. 35] suggests that historians ask three questions to determine the historical significance of an event, namely "what happened, what might have happened as well as what happened [or did not happen] after the event." Significance becomes a matter of "hindsight." The historian has to do more than look at "what was" since "what was not" may be of crucial explanatory importance. This paper's retrodictive analysis of securities legislation focuses on Porter's last question—what did not happen—to address the question of whether passage of legislation warrants periodization with respect to financial reporting.

**Rhetorical Analysis**

Rhetorical analysis is a critical method in that it challenges the fundamental premise of economic rationality, which underpins all explanatory empirical research in accounting. Rhetorical analysis explicitly rejects the possibility of "objective" evidence, suggesting that historians remain aware of "the political involvement of all interpretation" [LaCapra, 1985, p. 37]. This paper examines the critical implications of this form of inquiry briefly in the concluding section of the discussion of disclosure legislation, but that analysis focuses on a more traditional problem—transference.

**Transference**

Rhetorical analysis has provided historians with a powerful tool to identify transference; this essay focuses on two types of transference—belief and methodological—relevant to empirical
Belief transference occurs when researchers impute current beliefs to people in different time periods or in different cultures. A related form of this type of transference occurs when researchers imply that current beliefs are totally different than past beliefs. Traditional historians have recognized the dangers of imposing current beliefs on the past and a rich body of literature exists with respect to this problem. The danger of transference increases exponentially when researchers use a theoretical framework to explain a particular historical phenomenon. The theoretical assumptions must reasonably reflect existing conditions in the particular time period or the theory will have little explanatory power [Kaplan, 1964]. The examination of agency theory explanations of emergence of demand for audits in this paper focuses on this issue. Transference also can occur in disciplinary or subdisciplinary debates. LaCapra [1985, p. 73] concludes that research might be blindest when "disciplinary or subdisciplinary boundaries and protocols of research become the foundation for a self-enclosed frame for reference that induces the methodological scapegoating—the exclusion or reduction—of phenomena and perspectives that cannot be fully adjusted to it." In short, conversations should not be silenced by forcing all research into the same mold. The analysis of two comparative world views in behavioral accounting research focuses on one aspect of methodological transference, namely how the transference of protocols from one subdiscipline can lead to the type of blindness that LaCapra warns can occur. This leads to a lack of communication between the two schools due to rhetorical arguments that discount the methods used by the competing world views [Carlston, 1987].
DISCLOSURE LEGISLATION

Ball and Foster [1982] examine several topics, related to corporate financial reporting, and discuss four validity issues [construct, internal, external, and statistical conclusion] that arise in these studies. They outline two models that empiricists might use to assess the impact of securities legislation. They could [1] attempt to model events leading to the formation of the SEC or [2] treat the SEC as an intrusive event in a static social order. To date, researchers have used the latter model. This enables them to assume that formation of the SEC is an appropriate operational proxy for the concept of disclosure regulation and that “regulation can be operationalized as a zero-one variable switching in the early thirties” [Ball and Foster, 1982: p. 185].

From a historical perspective, the central issue is, did passage of legislation constitute an intrusive event, warranting periodization? For the pre/post SEC dichotomy to be meaningful in a financial reporting context, passage of the legislation should have changed pre SEC reporting relationships, i.e., management/auditor, management/stockholder, auditor/stockholder. Passage of legislation does not by itself constitute a critical event since as Edelman [1964] notes, legislation may be symbolic, designed to still public outrage without effecting substantive change. Merino and Neimark [1982] examined events leading to passage of securities legislation, concluding that the disclosure requirements of the legislation appeared to be designed to maintain the status quo, i.e., to restore confidence in the economic system, a conclusion consistent with symbolic regulation. Flesher and Flesher [1986] provide additional historical support for the thesis that the 1933 Securities Act was designed to support the status quo.

There are some excellent sequential accounts of the formation of the SEC, those studies identify a continuous pattern of demand for increased disclosure that culminated in the passage of regulation. A limited review of the historical record here

12Ball and Foster [1982: p. 178] note that modeling the phenomena that led to the formation of the SEC would greatly increase the complexity of the analysis. See Benston [1969] and Chow [1983] for examples of research that adopts the “static” model; see Merino, et. al. (1987) for criticism of that model. See Flesher and Flesher [1986] for discussion of events leading to the formation of the SEC.

does not duplicate these prior historical inquiries, it does, however, focus on actions in the period subsequent to passage of legislation to highlight why the pre/post dichotomy appears to be problematic. If that dichotomy does not hold, then both the construct validity (does the experimental design employed allow the researcher to test their theoretical variables) and the internal validity (has the group partitions/experimental groups allowed for an anticipated effect to occur) of the intrusive model would be open to challenge since depiction of passage of legislation as a random event in a static social order would be inappropriate. If that is the case, then valid inferences cannot be drawn from the empirics generated by the model. The approach here in this paper examines implementation of the reporting objectives of the legislation to address Porter's last question—what happened or did not happen after passage of legislation?

**Implementation of Securities Legislation**

The stated objectives of the Securities Acts were to limit managerial power, to promulgate uniform reporting rules and to provide information that would be useful to investors for decision making. The crucial historical question—were the stated objectives implemented? A brief examination of the historical record suggests that the answer is no. The SEC clearly did not promulgate uniform rules nor is there evidence managerial power had been limited. By 1939, managers seemed to have more, not less, flexibility with respect to reporting practices. If Congressional intent had been to curb managerial power by restricting accounting choices, then the legislation does not seem to have achieved that objective.

The SEC indicated that the political intent of the 1934 Act was to “make available to the average investor honest and reliable information” for decision making [Kaplan and Reaugh, 1939, p. 35]. However, if that was the case, then the failure of

---

14 Part of this can be attributed to the legal liability imposed on auditors by securities legislation, a brief review of the AIA/SEC literature shows that auditors did not seek to limit management’s choices. The SEC accepted consistency, which limited auditors’ responsibilities, and conservatism, which Gilman [1939, p. 248] concludes gave management the right to tell stockholder untruths about their company, in lieu of uniformity. The SEC delegated authority for setting accounting standards with the issuance of ASR #4, April 25, 1938 and by 1939, the era of dirty surplus was in full bloom, see Previts and Merino [1979] for discussion of the flexibility afforded managers.
the legislators to require that corporations follow regulatory standards in preparing annual reports is curious. Kaplan and Reaugh [1939] point out that the SEC did not make filings easily accessible to "average" investors. SEC commissioners usually referred to annual reports when they spoke of investors' access to reliable data [Healy, 1938]. They certainly did not stress that annual reports need not meet SEC disclosure standards. Regulators, like political reformers, may have assumed that the "average" investor could not benefit directly from financial data and would have to rely on financial intermediaries. However, pluralistic democratic values may have precluded a direct statement to this effect so that the emphasis was placed on disclosure as a mechanism to create a "fair" game so that all could participate in the nation's economic growth [Merino and Neimark, 1982].

Kaplan and Reaugh [1939] compared pre/post SEC annual reports of companies that came under the SEC's jurisdiction. They found a slight improvement in quality, but concluded that overall annual reports did not contain sufficient disclosure to render them interpretable. Even disclosure of basic items, such as sales, did not improve significantly as 21% of the 1939 corporate reports contained no sales data. In 1946, the SEC staff investigated annual reports of Over-The-Counter companies (OTC), cited numerous omissions, and concluded these reports did not provide reliable data to investors. The report harshly criticized audit firms for signing off on deficient reports that might mislead the public. Auditors were outraged. They did not dispute the SEC's findings with respect to the quality of OTC reports, but they accused the SEC of hypocrisy, since the same types of omissions existed in annual reports of companies under the SEC's jurisdiction [Editorial, Journal of Accountancy, August 1946]. Maintaining the perception that investors could participate in a fair game seemed to be more important than the stated objective of actually providing reliable information to investors.

**Implications for Empirical Research**

The most fundamental question arises from the possibility that legislation was symbolic, an act of political manipulation, or as political persuasion, designed to change initial conditions and preferences. If the reporting provisions of the legislation were symbolic, then how do models that hold initial conditions and preferences constant, assess the effect of that regulation?
We suggest they cannot. In this case, the question is not whether disclosure was an efficient means to reach comparable objectives, but rather did it provide a mechanism to achieve a particular political objective. Nelson [1989] suggests that Riker's [1986] *heresthetics* (*rhetoric* by another name) political manipulation model might provide some useful insights about the role of regulation.

On a more basic level, how can the results of the current empirical models be interpreted if the assumptions of the models are questionable? First, if legislation did not result in significant changes in financial reporting, what do the results generated by a zero-one switching variable model mean? The legislation would appear to be an intervening variable. The empirics would not test the impact of the legislation but some other unknown factors. Similarly, what do empirical tests of pre/post SEC periods, based on a variable, such as sales, mean if that data was still not publicly available after passage of legislation? While the legislation did mandate sales disclosure, the SEC was not anxious to be embroiled in controversy so it adopted a permissive attitude and allowed numerous confidentiality exceptions with respect to disclosure of sales data in its filings. It seems likely that most of the companies that requested confidentiality exceptions were non-disclosure companies in both the pre/post SEC period. Therefore, studies that use companies that did not disclose sales, prior to regulation, as an experimental group, assuming that they must have done so after passage of legislation, may be making an invalid assumption. If the experimental group contains companies not affected by regulation (non-disclosure companies), then the empirical results do not test the effect of securities regulation.

**Suggestions for Future Historical Research**

This essay focused on one issue, implementation of the ob-

---

15Accountants strongly supported confidentiality exceptions; see for example, AIA Minutes [1936] where Wellington, Chairman of the AIA's Committee on Cooperation with the SEC, applauded the fact that the SEC had shown some leniency in allowing confidentiality exceptions; in the same year, the AIA issued a pamphlet urging that the SEC become even more liberal in allowing confidentiality exceptions to income statement disclosures.

16See Benston [1973] who uses companies that disclosed sales in 1929 as a control group and non-disclosure companies as an experimental group to test that efficiency of the legislation with respect to reduction of risk, i.e., variance of stock market prices of each group, in 1935.
jectives of legislation, there are other facets of "what did not happen" after passage of legislation that also need further examination. For example, New Deal reformers, like Berle [1933] and Douglas [1934], suggested that the 1933 Securities Act be viewed as no more than a "modest start." Both suggested that it would not be long before the government played a direct role in investment banking by passage of a federal incorporation law, which they viewed as salutary.

Prior to enactment of the 1934 Act, there was almost universal agreement among reformers that disclosure regulation could not curb the power of those who controlled the nation's corporations or protect investors. What role, if any, did the accounting practices, techniques, and discourses play in stemming demands for more direct government oversight? What changed reformers' attitudes, or did they change, with respect to the adequacy of disclosure as a regulatory device? Empirical tests do not address the issue of what did not happen, but historical inquiry need not be so limited.

From a critical perspective, a key question has to be, why should disclosure legislation be assessed on an efficiency basis? Brown [1989] discusses the "universalization of the economic," that makes all decisions, including ethical and political decisions, subject to economic calculation. He argues that for this to be accomplished cultural barriers had to be broken down so that all ends would appear to be comparable. This is crucial so that all debate can be shifted to assessment of efficiency of various means to achieve comparable ends.

Tinker, et al. [1982] explain how this privileges a particular type of research. In short, if ends are comparable, then research that examines ends can be dismissed as subjective value judgments of the researcher; whereas, evaluation of alternative means to assess the efficiency of obtaining comparable ends, results in objective, factual research. However, if disclosure was not viewed by reformers as a means to comparable ends, but rather a way to achieve a specific political objective (a non comparable end), such as restoring the "moral" legitimacy of the existing economic system, then empirical analyses that assess disclosure on an economic efficiency basis will not tell a complete story.17

17See Berle [1927] who concluded that the unbridled power exercised by bankers and corporate managers could result in "private property passing out of existence," he also lamented the fact that the courts refused to question account-
Empirical models often may be too narrow to address complex accounting issues, but that does not mean that empirical research has not raised some interesting questions for accounting historians. For example, Benston [1973, p. 218] found that companies that did not disclose sales in 1929 were “better investments” than those that did, concluding that disclosure companies had “a greater real need to assure their stockholders of their worth than those who did not.” The authors of this paper do not find Benston’s [1973] results surprising, although we believe his conclusion as to why some companies voluntarily disclosed should be subject to closer scrutiny. Mattesich’s [1976] suggestion that full disclosure entails a “doctrine of concealment” might provide an interesting starting point, as might Berle’s [1927] contention that accounting practices enabled managers to gain absolute power.

Critical researchers also have raised some interesting questions about disclosure. For example, Neu [1992] asks how was regulation expected to restore investor confidence? We doubt that empirical studies that assume that reformers sought to restore investor confidence by providing information that reduced risk, measured by the variance in stock market prices, accurately capture political expectations; although that may be what reformers should have done had they been instructed by economic rationality. Future accounting historical inquiries might examine the political or moral rationale for securities legislation to address the question of political intent.

Neu [1992, p. 366] offers one suggestion, namely, that future researchers view regulation as a “textually mediated discourse” that structures social consciousness to create (political persuasion) the impression that perceived inequities have been corrected. Economists, who have recognized the multifaceted nature of regulation, also recognize, although in a narrower sense, the need to examine the political aspects of regulation. For example, Stigler [1971] suggests that academic researchers must try to determine when and why an industry (or a group
such as accountants) is able to use the state for its purposes or when and how it is singled out by the state to be used for alien purposes if they are to understand the regulatory process. Both traditional and critical historical analyses of the above issues would seem to be a necessary first step if accounting empirical researchers are to develop models that result in "plausible" stories about the impact of securities legislation.

AUDITING AND AGENCY: SOME QUESTIONS

Ball and Foster [1982] do an excellent job in outlining the methodological weaknesses of the "stewardship-contract monitoring paradigm." A similar historical analysis of the reasonableness of the relationships posited by the model would seem to be in order. If these relationships (motivation and causality) do not reasonably reflect actual relationships in a given time period, then transference has occurred. If this happens, a model has little explanatory power. While empiricists can credibly argue that the assumptions of a predictive model need not be realistic, that argument becomes tenuous when a model is used to explain a particular historical phenomenon.\(^{18}\) The following section briefly examines the stewardship and information hypotheses to highlight the types of questions that accounting historians might ask about the reasonableness of agency theory explanations of the emergence of demands for audits.

Stewardship Hypothesis

In its simplest form, the stewardship hypothesis states that when a decision-making authority has been delegated to one group [agent/manager], agents have incentives to seek monitoring agreements. They bargain with the principals to obtain such agreements.\(^{19}\) The incentives to bargain arise from the agents' fears that principals will overestimate the amount that they

\(^{18}\)See Kaplan [1964] for discussion of why explanation is not the obverse of prediction; while the term causality, consistently with the historical literature, it does not mean to imply that empirical correlations can determine causality, they can do no more than show association. It is the researcher that imputes causality to the empirical evidence.

\(^{19}\)See Dugger's [1983] discussion of how contracting (bargaining) replaces the invisible hand as the mechanism to justify laissez faire governmental policies; see Merino [1993] for discussion of why pragmatists, like Dewey, viewed contracting as meaningless, stressing formal freedom over real freedom, and of little value to those who had no power.
might appropriate and penalize them unduly. Thus, benefits exceed costs and voluntary monitoring occurs.20

This hypothesis imputes a specific motivation [to control the divergent self interest of principal and agent], infer a causal factor [separation of ownership and control that results in divergent self interest of principal and agent], and a causal agent [management] to explain the emergence of a particular phenomena, i.e., voluntary audits. If this hypothesis provides a valid explanation of why independent audits became widely used in the United States in the early decades of this century, then a historical inquiry should show that corporations, characterized by separation of ownership and control and divergent self interests, were most likely to be audited.

Unfortunately, most empirical studies use corporate size as the proxy variable for separation of ownership and control.21 Trusts were the largest corporations in our nation at the turn of the century. Financial capitalists, like J. P. Morgan, who controlled a large number of trusts, also were pioneers in the use of audits. If, as the brief overview of the historical record, below, suggests, trusts did not reflect the relationships posited by agency theorists, then the significant correlations found between size/audits should not be interpreted as providing support for the stewardship hypothesis.

Historians generally have concluded that financial capitalists exercised absolute control over the trusts that they promoted.22 Morgan [1913] made similar claims, stating that he controlled both managers and Boards of Directors [stockholders] of the companies that he organized, absolutely. If this testimony and historians' conclusions are valid, then an autonomous managerial class did not exist in trusts. A nonexisting group cannot be a causal agent. Nor would the posited motivation appear applicable to trusts; if financial capitalists exercised absolute control over stockholders and managers, then it seems unlikely that they incurred audit costs to control divergent self


21See Ball and Foster for discussion of the problem of size as a proxy variable; see Demski [1988] and Kelly [1983] for interpretive problems created by use of size as a proxy variable in positive research.

interests. Alternative motivations for financial capitalists to incur audit costs are discussed later in this section of the paper, after examining the information hypothesis, an alternative explanation for the emergence of audits.

**Information Hypothesis**

In simplified terms, the information hypothesis assumes that separation of ownership and control [causal factor] created a demand for voluntary audits because investors [causal agents] needed reliable financial information to determine market values [motivation]. The hypotheses implicitly assume that [1] voluntary audits resulted in financial data of sufficient reliability to be used in decision making and, that [2] investors based investment decisions on intrinsic analysis.

A brief review of the historical record suggests that accounting historians might ask the following questions. Is it reasonable to assume that audits necessarily improved the reliability of financial statements? Or was Ripley [1927] correct when he charged that audits simply served to mask the continuing unreliability of financial statements? If his criticisms were not valid, why did accountants concede he made valid points? [May, 1927, Wildman, 1928]. Were bankers correct in their assertions that Uniform Accounting [1917] so eroded audit standards that financial reports became increasingly unreliable throughout the 1920s? [AIA, 1923, Campbell, 1928]. Why, if audits emerged in response to investors' needs for reliable information for decision making, did investors not demand that companies disclose the bases for valuation of various accounts so that they could interpret data? [Merino and Neimark, 1982]. A host of other questions could be raised, but until the above issues are resolved, the information hypothesis should be regarded as conjectural. Thus, interpretation of empirical results must be problematic since the results support a number of alternative hypotheses, equally well.

**Alternative Incentives**

Merino and Neimark [1982] offered two alternative incentives, one economic (to market watered stock) and one political (the desire to deter more draconic government regulation) that may have motivated financial capitalists, who controlled trusts, to incur audit costs during this period. The significant size/audit
correlations that empiricists report are consistent with both the watered stock and the political hypotheses. The alternative hypotheses have the added benefit of avoiding one of the inherent contradictions in the historical record, the growing use of audits, purportedly for monitoring, accompanied by claims of the increasing unreliability of financial reports. Neither the need to market watered stock, nor the need to deter more draconic government intervention, required that audits result in more reliable information or that they be effective monitoring devices. One could argue that from a financial capitalist’s perspective, ineffective audits were best as long as they created a perception that monitoring was taking place. Providing reliable information probably was not a high priority for those marketing watered stock. Nor did audits have to have these attributes to meet political demands for symbolic reassurance. If accounting researchers are to develop better empirical models, then a necessary first step may be that those models reflect the actual attributes of companies that were and were not audited at this time.²³

**Future Historical Research**

From a traditional historical perspective, any explanatory study that is informed by a particular lens, such as agency theory, creates concerns about imputation of current beliefs on the past. The theories may offer partial explanations, but they may be too narrow to furnish adequate explanations. Future historians could make a valuable contribution to the understanding of the audit function if they examined the reasonableness of “economizing” various types of audit functions.

For example, the ongoing expectations gap may reflect the failure to recognize that cost/benefit is not the primary concern in many audit functions. The detection of fraud is used as an

---

²³For example, the Standard Oil Companies, among the largest in the nation and the most widely held, were not audited with two exceptions until the 1930s; but because they were traded in the unlisted department of the NYSE and the financial press had a separate section for quotations of their stock, these companies probably do not appear in most empirical samples. None of the Standard Oil Companies issued watered stock and most had an A common stock rating (perhaps a least cost monitoring device?); Rockefeller had little use for auditors and the companies he controlled had little trouble borrowing money or attracting investors without audits; SOC companies did provide extensive financial data.
example to indicate when prescriptions generated by empiricists should be closely examined by historians, since those prescrip-
tions may be irrelevant. It is trivially easy for empiricists to
show that it is not cost/beneficial (especially when the deterrent
effect of audits is not measured) for auditors to detect fraud. Accounting historians need to point out that cost/benefit analy-
sis is simply a statement of tradeoffs in values and that tradeoff
may not be acceptable unless it can be shown that detection of
fraud is an economizing decision.

If, however, ethical concerns predominate, then reduction
of detection of fraud to cost/benefit is inappropriate. One does
not have to adopt a critical perspective to challenge the rel-
evance of cost/benefit in this case. Berle [1963] contended that
fraud jeopardized the underlying rationale for private property,
since there is no "moral" justification for allowing those in con-
trol to benefit by appropriating corporate resources that they do
not own. Means are not the issue, ends are. Maximization of
wealth is not comparable to maintaining the "moral" legitimacy
of private property rights.

Traditional histories could be particularly beneficial by
pointing out the circumstances and conditions that lead to ac-
celeration of demands that auditors assume greater responsibil-
ity for detection of fraud. For example, merger movements
could be perceived to strengthen managerial control; therefore,
it would be useful to know if periods of rapid merger activity
result in greater demands being placed upon auditors to be
more vigilant in their efforts to detect managerial fraud. For
over a century, auditors and the public have been at odds about
issues such as detection of fraud, perhaps it is time to stop
trying to educate the public as to the limitations of audits and
take time to educate accountants as to the conditions that make
political or ethical considerations of primary concern and eco-
nomic considerations secondary.

There is a rich body of critical auditing research that should
provide new insights for all accounting historians. This research
has questioned the fundamental claims that auditors make to
professional status [Hopwood, 1990, Willmott, 1991], ques-
tioned the value of audits [Humphrey and Mozier, 1990], and

24See Watts [1980], who discusses Pareto optimality, but reduces detection
of fraud to cost/benefit analysis, concluding it is not cost beneficial for auditors
to be expected to detect fraud.
effectively challenged the depiction of auditors and accountants as “neutral” observers [Tinker, 1985, Hines, 1989]. Hooks [1992] shows that audit actions and behavior are consistent with several social theories, raising a fundamental challenge to empirical research. Given that a critical mass of both empirical and critical work now exists, a comparative analysis of specific audit functions would seem to be useful, not only to broaden understanding of the current state of knowledge but also to assess the persuasiveness of the arguments offered from a historical perspective.

COMPETING WORLD VIEWS AND BEHAVIORAL ACCOUNTING RESEARCH

Ball and Foster [1982] outline six world views in financial reporting as a partial explanation of why empirical research has not generated plausible stories. D’Agostino’s [1985] excellent analysis of comparative world views in historical linguistics provides an example of how historians might assess Ball and Foster’s [1982] contention. However, to examine six views in this manner would entail another paper, since one would first have to determine if six world views exist, which is problematic, and then assess the impact of each. The concern here is to demonstrate how methodological transference stops conversations in accounting by examining two world views within behavioral accounting. Both views are consistent with the basic functionalist paradigm of empirical research that has been discussed previously.

Understanding the history of alternative methodologies (which may lead to dominant schools of thought) may enhance the communication and narrow the differences between competing methodologies in accounting. Bazerman [1987] states that a research community will gain “confidence” in its prescriptions and “stability of text” when researchers share a belief that there is “one right way” to acquire knowledge. However, this tends to silence creativity and alternative views. An understanding of the history of alternative methodologies may enable researchers to overcome a close minded view of knowledge acquisition.

Paradigmatic analysis provides an alternative method of examining these world views, see Glautier [1984] and Wells [1976], but the two views discusses here appear to be within a functioning paradigm.
Historical methodology also stresses the importance of being sensitive to the surrounding environment. It is critical for all researchers, whether using archival data or doing a laboratory experiment, to take into account the conditioning environment that they are trying to understand and relate this environment to their assumptions, research questions, and research design.

The researcher needs to ask: given the environment, do my assumptions, questions, and design make sense? In short, are they appropriate? The researcher must also evaluate the conditions in which the findings will be upheld and under what conditions will the findings not be upheld [Ijiri, 1972]. These questions are critical to current behavioral accounting research. For example, in cognitive psychology there are two schools of thought to the methodological approaches with respect to the study of human memory, the Ebbinghaus [1885] approach and the Bartlett [1932] approach. Ebbinghaus's methodology emphasizes internal validity, control and experimental simplification; whereas Bartlett's method emphasizes the complexity of human memory, the need to examine human memory with complex material, and introspection.26 Both approaches have influenced behavioral accounting researchers (the latter represented by protocol analysis studies and the former by many laboratory controlled experiments).

Accounting researchers have argued about the rigor and validity of two approaches; with most discounting the introspective approach. Nevertheless, observation of cognitive theories will show an integration of both methods in their models [Crowder, 1976]. By ignoring this integration, Hogarth [1991] suggests that accounting researchers are only concerned with replicating the cognitive experimental research in a sterile accounting setting. These replications tell us that accountants are like or not like other individuals when it comes to decision biases. However, Hogarth [1991] avers that researchers need to go beyond the dominant schools of thought and integrate ideas from all schools, with a clear understanding of the specific context of the research. This will allow researchers to address problems that are relevant to their discipline rather than do minor extensions of the psychology literature. The accounting litera-

26Introspection is a term that has been “disreputable” in behaviorism but has been allowed to come out of the “closet” under alternative metaphors such as “self-reports,” “verbal” protocols, etc.; see Carlston, p. 150 for further elaboration.
ture is at least beginning to consider the merits of a multiple approach [Gibbins and Jamal, forthcoming].

Another example is the criticism of the Lens model approach used in much behavioral accounting research. It is said the Lens model is dead in accounting since it represents a static model in designing experiments. However, Brunswik [1952] never intended the Lens model to be a static model. Brunswik emphasized the need to develop representative research designs. He explicitly states you cannot ignore the environment in which learning takes place. The Lens model itself should not be considered static, researchers just need to develop dynamic experiments, using a representative design. For example, audit judgment researchers may consider conducting field experiments; using the natural auditing environment and observing the type of information acquired rather than providing all the relevant information in a factorial design and sterile environment.

Finally, accounting behavioral researchers (as well as psychology researchers) tend to get mired and narrowed by their own rhetoric. Researchers limit experimental reports to convincing reviewers and readers of their methodological competence rather than providing intellectual arguments to "persuade readers of the truth of an idea" [Bazerman, 1987, p. 140]. Reviewers concentrate on methodological weaknesses with little consideration for understanding and solving problems. As Bazerman [1987] points out, this may be due to the constraints on what is considered to be the "appropriate" experiment reporting style. Accounting behavioralists borrow from the underlying sub-areas of psychology. In doing so, they adopt the language of the sub-area. Attribution studies consider "implicit personality theory" whereas cognitive studies talk about "schemas;" these terms essentially mean the same thing (how an individual represents another event or individual), but the two areas of psychology do not communicate with each other [Carlston, 1987]. Specific metaphors are useful for those who understand the language, but they may also "obscure alternative interpretations" and lead readers to accept research findings without adequate evidence [Carlston, 1987, p. 153].

**Future Historical/Behavioral Research**

The above indicates that having an understanding of historical methodology, which stresses the importance of sensitivity to the context, surrounding environment, and motivations
may be critical to developing more robust behavioral accounting models. Accounting historians and behavioralists can also join together and conduct studies which provide the historical back drop for alternative behavioral models, intent of the language and metaphors used in the various sub-areas, and the intended boundaries and overlap of the competing schools of thought. Another important aspect of such an analysis would be to point out the critical need to validate the reasonableness of the assumptions underlying any experimental or empirical model.

**CONCLUSION**

This article attempted to show how historical inquiry might be used to assess the reasonableness of stories empiricists tell. The brief historical analysis of securities legislation was designed to point out why the pre/post SEC dichotomy appears questionable. If the reporting objectives of the legislation were not implemented, then the legislation may have been symbolic. This not only raises questions about interpretation of the findings of empirical models, but also about the adequacy of models that hold initial conditions and preferences constant. Riker’s heresthetics (political manipulation) provides one possible alternative for future accounting empirical researchers working within the functionalist paradigm. Historical inquiries that examine the political and moral rationales for securities legislation might add valuable insights about disclosure legislation that would enable members of the accounting profession to better understand the complex functions that accounting has in contemporary society.

The examination of agency theory explanation of the emergence of audits in the United States suggests that belief transference (imposition of current beliefs on prior periods) has occurred since the economic incentives posited by the model do not seem to fit actual relationships at the turn of the century. The empirical results appear uninterpretable since the most significant correlations (size/audits) support alternative hypotheses, exogenous to agency theory, equally well. Future accounting historical inquiries need to consider the possibility that political and moral incentives have created demands for audits. If accounting researchers continue to focus solely on the economic aspects of auditing, then the expectations gap between the accounting profession and the public that has existed for
more than a century should be expected to continue. Perhaps it is time to try to educate accountants about the complex, interactive nature of the accounting discipline, rather than trying to educate the public about its limitations.

This examination of behavioral accounting research shows that it relies on methodological transference from psychology. The dangers of this transference is that researchers will be: 1) insensitive to the changes in the underlying discipline; 2) insensitive to the specific context and problems that are being examined; and 3) blinded by the rhetoric of the mother discipline, exhibiting intolerance for alternative interpretations and methods. Historical inquiries that highlight the contextual limitation of various world views may help accounting behavioralists to obtain a better understanding of the boundaries of their methods and the context of the problems they address.

Future Historical Inquiries

Traditional historical analyses serve a valuable function in that they enhance understanding of how the accounting discipline has arrived at the current state of knowledge. By expanding the parameters of analysis, historical inquiries can create discomfort and uncertainty about what are held to be "certified" truths. Questions, such as, under what conditions and circumstances is it appropriate to assume that promoting economic efficiency is the primary accounting/auditing function, when is it not, certainly deserve the attention of accounting historians. This paper suggests two areas, disclosure regulation and detection of fraud, where economic efficiency may be irrelevant because society may reject "economizing," i.e., reducing political and ethical objectives to economic decisions, as inappropriate. A rhetorical examination of how accounting discourses, practices, and techniques fit into the what Brown [1989] calls the universalization of the economic incentives simply may be fruitful.

Another question, related to empirical work, that was not addressed, but that needs to be addressed, is the relevance of the classificatory generalizations used in accounting research. Empiricists implicitly assume homogeneity of interests among groups, such as investors. Given the dynamic changes in the economic structure during this century, those classifications, which have not changed, may mask important conflicts that now need to be considered. For example, is it reasonable to
assume commonality of interests between current and potential investors or between "average" and institutional investors? Neu [1992] conducted a case study to show the differential impact that the bankruptcy of a company had on various investors in a new issue of that company. He concludes that accounting regulations did not protect all investors equally well. Accountants need general historical inquiries that specifically look at the question of the adequacy of current classifications, and specific case studies that look at the impact of accounting techniques and practices on particular subunits within each user group. Accounting historians can make an important contribution by providing a more realistic picture of the current state of the discipline and by pointing out contradictions that exist between what academic researchers assume and actual economic relationships in contemporary society. This picture should consider both institutions and individuals. This may help empiricists to tell more plausible stories and behavioralists to experiment on more relevant problems.

The message of this essay is simple—accounting academics need to celebrate diversity and keep conversations open. Critical historical research has provided important new insights by rendering the familiar, strange; while traditional historical inquiries render the familiar, intelligible. If accounting empirical research has not been convincing because empirical researchers do not tell plausible stories, as Ball and Foster [1982] suggest, then accounting historical studies may provide a means of developing more robust models. To paraphrase Bronowski [1965], no research community can survive without trust and respect among its participants since all researchers are dependent to some degree on the work of those who have preceded them. Commitment to scientific values, rather than to a particular method or a particular theory, promotes creativity and novelty. As Bronowski [1965] astutely notes, what other disciplines can learn from the success of the scientific research community is not its techniques but its spirit—the irresistible need to explore.

REFERENCES
____________, Minutes (1936).


Arrington, C. E., "Intellectual Tyranny and the Public Interest: The Quest for the Grail and the Quality of Life", Advances in Public Interest Accounting, v. 3 (1990): 1-16.


Berlin, I., "The Concept of Scientific History", in Philosophical Analysis, ed. by W. Dray: 5-58.


Klamer, A., "As If Economists and their Subjects were Rational", in Nelson, et al., Rhetoric: 163-83.


Ripley, W. Z., Main Street and Wall Street, Boston: Little Brown & Co. (1927).


Shearer, T. and Arrington, C. E., “Accounting in Other Wor(l)ds: A Feminism Without Reserve”, Accounting, Organizations and Society (February/April, 1993): 231-52.


Watts, Ross, “Can Optimal Accounting Information Be Accounting Profession”, in Regulation, ed. by Buckley and Weston, pp. 153-162.


REVIEWS

PATTI A. MILLS, EDITOR
Indiana State University

REVIEWS OF BOOKS AND OTHER PUBLICATIONS


Reviewed by
Stephen J. Young
Case Western Reserve University

The book Quantitative Methods for Historians provides a practical guide to the use of statistics in historical research. It takes its readers on an intriguing tour through the initially mystifying realm of statistical analysis. The authors use excellent examples to demonstrate the value and ease with which varying levels of quantification can be applied to the subject.

The book is both an advocate and a guide to the statistical study of past events. The authors feel strongly that quantification can be very helpful in studying history. They take issue with those who feel the statistics taint historical study, suggesting quantitative analysis is merely another angle of investigation. The book begins and ends with a defense of the use of statistical methods.

Of major issue is the value of rigorous statistics to historical research. On this position, the authors are clearly in favor of some level of quantification. They point out that quantitative information can explain certain types of information efficiently, and discuss both advantages and disadvantages of the use of statistics. The first three chapters are dedicated to explaining the value and limitations of statistics to the historian.

The discussion of computer use in the research process is a central issue in the work. Several chapters discuss the fundamentals of computerized research. They focus on explaining the basics of word processing, database use, and statistical packages. Much practical advice is given on how to package a sample into a form amenable to computer use.
The remainder of the book is a general overview of statistical procedures. The book assumes no prior statistics knowledge. It therefore begins with the basics of sampling and data collection and preparation. It then discusses statistical topics varying from simple mean and standard deviation concepts to complex multi-equation regression formulation.

The authors attempt to avoid the complex mathematics of the processes, instead focusing on the interpretation of results. They do this by using extended examples of real data taken from the Colonial period of American history. This methodology goes a long way to enliven an otherwise dull topic. It also helps to explain how potentially complex statistical relationships are interrelated.

The coverage of statistical procedures is extensive. However, it is also necessarily somewhat brief. This shortfall is understandable given the sheer magnitude of their chosen topic. Instead, the authors stress the availability and ease of statistical computations by giving readers a wide variety of samples. They focus on the advent of micro-computing power and its ability to handle even large data sets efficiently. At the same time, computers provide an operational simplicity that attracts a wide group of non-mathematicians.

It becomes obvious that the authors feel strongly about the value that the application of statistics would bring to historical study. However, they make clear that statistics are not always an appropriate tool of explanation. This subtle, but important, point is often overlooked by novice statisticians.

The last chapter is dedicated to reiterating the role of quantitative methods in the study of history. The authors are critical of those who deride the use of statistics in history. The critics suggest that much historical data is too incomplete for the proper application of statistics. This contention is simply incorrect. Statistics can be tailored to overcome such problems. The use of all available tools of discovery can provide value to the study of history.

In their urge to promote quantification, the authors fail to explain the training required to properly interpret statistical results. Like all sophisticated instruments, statistics can be dangerous to the uninitiated. Readers should not be lulled into a false sense of expertise after reading this work. Statistics and their interpretation are not quite as simple as the authors would have us believe.
The greatest value of this book is its simplicity. Simplicity is also its chief source of weakness. The book is an excellent entree into the vast realm of statistical analysis. It provides a brief tour through that large universe. No single work could fully explain the breadth of statistics that are mentioned in this work. The book only briefly touches on the more complex topics.

In summary, Quantitative Methods explains basic statistical concepts clearly and practically. The book discusses the problems and rewards of quantitative analysis. It also provides a brief but enlightening discussion of such methods. The authors intended that the book be a guide to historians. They have done remarkably well in fulfilling that goal.


Reviewed by
Richard Vangermeersch
University of Rhode Island

Spoken words at a conference are, most times, quickly forgotten by listeners, no matter how prestigious the speakers and how carefully the listeners take notes. In order to be a permanent part of the literature, these spoken words need to be preserved. A video of a conference provides the viewer with a portrayal of the speakers, their asides, and their body language, and, hence, provides a better view of the human aspects of the issues involved. The joint efforts of The Academy of Accounting Historians and the College of Business of The Ohio State University have provided the best of all possible worlds. This book is an excellently transcribed and edited version of the spoken words of some of the most significant accounting academics and practitioners of the second half of the twentieth century. Interested persons can borrow a video of the conference either from The Academy of from Ohio State. This book and the video can be used as a package for many purposes.

The Accounting Hall of Fame Conference had three sessions, in which many of the panelists attended all three sessions. This allowed for interplay between the panelists at the sessions. There also was a limited audience at all three sessions
but these attendees spoke and interacted with the panelists. Hence, the conference and its transcribed record attained a level of continuity throughout the sessions. This was helped by the moderators, who kept the panelists focused on such a common topic as “What were the highs and lows of the period from 1965-1990?”

The first panel was comprised of academics and was moderated by Professor Steven A. Zeff of Rice University. The panelists were all members of The Accounting Hall of Fame, which is housed at Ohio State. They were: Robert Anthony; Norton Bedford; Sidney Davidson; Charles T. Horngren; Maurice Moonitz; and David Solomons. Yuji Ijiri spoke briefly at the end of the Conference. These men truly need no further introduction to those interested in accounting history.

Four examples of “highs” were: the much higher level of research tools used by accounting research; the development of management accounting; the much better reception of accounting professors at universities; and the case method. Four examples of “lows” were: the lack of knowledge about institutions by accounting professors; the benign neglect of traditional topics in accounting; the lack of debate on important issues; and the failure to have a dialogue with FASB. Since Dennis Beresford, FASB Chairman, was a special guest at the Conference, and an active participant in the three sessions, there definitely was a dialogue with FASB at this Conference.

The second panel was comprised of representatives from industry. As most accounting academics have more than adequate exposure to their colleagues and to public accountants, this panel allowed for a forum much needed by accounting academics. The moderator was Professor James Don Edwards of the University of Georgia. The panelists were: Eugene Flegm, General Motors; Gaylen Larson, Household International; John Quindlen, DuPont; Michael Sullivan, Shell Oil; and Christopher J. Steffen, Honeywell.

Four examples of “highs” were: the much higher level of sophistication of users of financial statements; the input of the Committee of Corporate Reporting of the Financial Executive Institute; SFAS No. 106 on post-employment benefits; and the 5 to 2 vote to pass an SFAS. Four examples of “lows” were the failure of the FASB to see financial executives as both “preparers” and “users” of financial statements; specific rules to replace judgment; SFAS No. 96 on accounting for income taxes;
and SFAS No. 33 on inflation. An interesting discussion was held about financial accounting domination of management accounting.

The third panel was comprised of leaders of the public accounting profession, both past and present. The moderator was Professor Robert K. Mautz, a member of The Accounting Hall of Fame. The panelists were J. Michael Cook, Deloitte & Touche; Philip Defliese, Coopers & Lybrand and a member of The Accounting Hall of Fame; Robert K. Elliott, KPMG Peak Marwick; Duane Kullberg, Arthur Anderson; Raymond C. Lauver, Price Waterhouse and FASB; Herbert E. Miller, Arthur Andersen and the University of Georgia, as well as a member of The Accounting Hall of Fame.

Four examples of “highs” were the increased sophistication of the clients’ personnel; the explosion of information technology; the growth of the transnational accounting firms to serve the global marketplace; and the realization that one can be both a professional and concerned with business aspects as well. Four examples of “lows” were: the litigation explosion; the lower value placed by users on the financial statements; specificity replacing judgment; and the deadening effect of regulation on needed product/service development. An interesting discussion took place on the topic of losing clients because of ethical concerns.

This fine transcription of this excellent conference provides much “grist-for-the-mill” in honors sections for accounting undergraduates and for class discussions in accounting graduate courses. This book, along with a viewing of the video, would be much to make recent accounting history exciting to students and to our colleagues. The book gives fine examples of the ethical interest of those in leadership roles in accounting. Tom Burns has done another fine job.


Reviewed by
Rowan Jones
University of Birmingham

This book is a reproduction of 31 articles on British local government accounting published during the period of its title.
It is offered as a comparison to an earlier collection in this series, by the same editors, called *Local Authority Accounting Methods: The Early Debate 1884-1908* (1991).

The idea of these books is an excellent one. The material is important in understanding accounting and regardless of what one might wish to be the case, these kinds of papers would not otherwise be accessed by most accounting researchers.

Moreover, for this book the editors have chosen papers that largely deal with issues in which accounting in business organizations confronted accounting in municipal corporations. One consequence is that some of the discussion will have more immediate resonance for researchers who have a conventional accounting background. The most obvious example, perhaps, is an extract from and elaboration on, the 1878 decision by the Inland Revenue to allow depreciation against tax on profits [p. 37]; but there are many others.

In local government accounting's own terms, there is a particular relevance to this second book. The period with greatest historical significance (judged in the context of British local government's history from the Middle Ages to the early 1980s) was the first decade of the twentieth century. What this book provides, then, is a re-capitulation of the more generally-accepted arguments from the earlier controversies, especially in the light of changes in the law and practice that had taken place subsequently.

The main topics covered by the papers are: publication of accounts, pricing of municipal trading services, costing for electricity and tramways, overhead allocation, income tax and capital accounting. The authors were, for the most part, professional accountants employed in local government, although councillors also contribute and there is some official material.

This book is to be unreservedly recommended to accounting historians. However, it must be said that it is a pity that the short introduction should have spoilt the overall effect of the book. This includes an unsuccessful attempt to rationalize the editors' choice of articles from *The Accountant* to the exclusion of articles from the *Financial Circular* on the basis that the latter was acting as a censor! Accounting historians do not yet have the luxury of objecting to the reproduction of articles on the ground that a better balance would have been provided by choosing other journals. When such a balanced judgment is required, it will come from cogently-argumented theses, which may

https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
then lead to selections based on a thesis. The point is that there were interesting articles in the Financial Circular during this period, as there were in other accounting journals, which are worth reading. But as disappointing as the editors' rationalization is, it cannot detract from the valuable contribution that the reproduced articles will make to accounting history.
AD HOC REVIEWERS
IN RECENT MONTHS

Dale Buckmaster
University of Delaware

John Durham
Fort Hays University

Hans Dykxhoorn
Western Michigan University

Walker Fesmire
University of Michigan — Flint

Robert Fleming
Northern Michigan University

Leon Hay
University of Arkansas

Margaret Hoskins
Henderson State University

Rita Hull
Virginia Commonwealth University

Bob Jordan
University of Wisconsin — Superior

Jun Lin
University of Lethbridge

Alvaro Martinelli
Appalachian State University

Sharon Moody
George Washington University

Larry M. Parker
Case Western Reserve University

Felix Pomeranz
Florida International University

Howard Stettler
Retired (University of Kansas)

William D. Wallace
University of Mississippi
ANNOUNCEMENT

ISSN 0951-3574

Accounting
Auditing & Accountability
Journal

Editors
James Guthrie and Lee Parker

Abstracts and Keywords ........................................... 2

Field Research in Management Accounting and Control: A Review and Evaluation
Lourdes D. Ferreira and Kenneth A. Merchant ..................... 3

The Non and Nom of Accounting for (M)other Nature
Christine Cooper .................................................. 16

The Rhetoric of Science and the Rhetoric of Revolt in the "Story" of Positive Accounting Theory
Tom Mouck .................................................................. 35

The Investment Performance of UK “Ethical” Unit Trusts
Robert G. Luther, John Matatko and Desmond C. Corner .......... 57

The Use of Accounting Data in Operational Decision Making in Algeria
C. S. Jones and S. Sefiane .......................................... 71

Readability and Understandability: Different Measures of the Textual Complexity of Accounting Narrative
Malcolm Smith and Richard Taffler .................................. 84

Index to Volume 5 ....................................................... 99

MCB University Press Limited
60/62 Toller Lane
Bradford
West Yorkshire
England BD8 9BY
Telephone: (44) 274 499821
Fax: (44) 274 547143
Telex: 51317 MCBUNI G

Published by eGrove, 1993
CONTENTS

Editors
James Guthrie and Lee Parker

Abstracts and Keywords .............................................. 2
Editorial ................................................................. 3
Announcements .......................................................... 6
Call for Papers .......................................................... 7

Mary Parker Follett .................................................... 8

Dismantling Financial Disclosure Regulations:
Testing the Stigler-Benston Hypothesis
Fahrettin Okcabol and Tony Tinker ................................ 10

Protecting against Detection: The Case of
Auditors and Fraud?
Christopher Humphrey, Stuart Turley and Peter Moizer .......... 39

Investor Interests and Government
Accounting Disclosure
Gary Giroux and Donald Deis .................................... 63

Accounting, Auditing and the Business
Establishment in Colonial Auckland
1880-1895
Keith C. Hooper, Michael J. Pratt and Kathryn N. Kearins .......... 79

Book Reviews ........................................................... 99

Ad Hoc Manuscript Referees 1992 .................................. 104

MCB UNiversity Press Limited
60/62 Toller Lane
Bradford
West Yorkshire
England BD8 9BY
Telephone: (44) 274 499821
Fax: (44) 274 547143
Telex: 51317 MCBUNI G
ANNOUNCEMENT

Accounting Auditing & Accountability Journal

ISSN 0951-3574
Volume 6
Number 2
1993

Editors
James Guthrie and Lee Parker

Abstracts and Keywords ........................................ 2

Keeping the Record Straight: Foucauldian Revisionism and Nineteenth Century US Cost
Thomas Tyson .................................................. 4

Incentive Structure and Group Performance Expectations in a Budgeting Setting: A Descriptive Study
Mohamed E. Abul-Ezz and John W. Dickhaut ................ 17

Standardization Issues in Management Accounting Communication
Mohamed E. Bayou ............................................ 32

A Scale of Perceived Independence: New Evidence on an Old Concept
Roger W. Bartlett ............................................... 52

Self-regulation in the Public Accounting Profession: The Structural Response of the Large Public Accounting Firms to a Changing Environment
C. Richard Baker ............................................... 68

Personality Profile of Female Public Accountants
Ronald A. Davidson and J. Thomas Dalby ................... 81

Commentary
Losing One's Reason: On the Integrity of Accounting Academics
Hugh Willmott, Tony Puxty and Prem Sikka ................. 98

Book Reviews ..................................................... 111

MCB UNiversity Press Limited
60/62 Toller Lane
Bradford
West Yorkshire
England BD8 9BY
Telephone: (44) 274 499821
Fax: (44) 274 547143

Published by eGrove, 1993
ACCOUNTING AND BUSINESS RESEARCH

Guest Editors: K. Keasey, University of Leeds  
M. Wright, University of Nottingham

Volume 23 Number 91A  
Corporate Governance Special Issue 1993

CONTENTS

Issues in Corporate Accountability and Governance: An Editorial  
Kevin Keasey  
Mike Wright

The Corporate Governance Jigsaw  
Nigel Macdonald  
Aileen Beattie

Corporate Governance and the Regulation of Financial Reporting  
Geoffrey Whittington

Approaching Corporate Accountability: Fragments from the Past  
Sonja Gallhofer  
Jim Haslam

Managerial Remuneration and Corporate Governance: A Review of the Issues, Evidence and Cadbury Committee Proposals  
William Forbes  
Robert Watson

Ownership Structure, Board Relationships and CEO Compensation in Large US Corporations  
Robert Mangel  
Harbir Singh

Remuneration Committees and Corporate Governance  
Brian G. M. Main  
James Johnston

Executive and Employee Share Options: Taxation, Dilution and Disclosure  
Don Egginton  
John Forker  
Paul Grout

Executive Compensation and Deregulation in UK Building Societies  
Hilary Ingham  
Steve Thompson

Markets, Hierarchies and the Regulation of the National Health Service  
Irvine Lapsley

The Audit Expectations Gap in Britain: An Empirical Investigation  
Christopher Humphrey  
Peter Molzer  
Stuart Turley  
Noel O'Sullivan

Auditor's Liability: Its Role in the Corporate Governance Debate  
Paul Collier

Factors Affecting the Voluntary Formation of Audit Committees in Major UK Listed Companies  
P. Ormrod  
K. C. Cleaver

Subscription Rates

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>Overseas</th>
<th>Overseas Airmail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>£26</td>
<td>£28</td>
<td>£33</td>
</tr>
<tr>
<td>Student</td>
<td>£13</td>
<td>£14</td>
<td>£19</td>
</tr>
<tr>
<td>Corporate/Institutional</td>
<td>£60</td>
<td>£62</td>
<td>£68</td>
</tr>
</tbody>
</table>

All Subscriptions may be paid in US dollars at current rates of exchange.
ACCOUNTING AND BUSINESS RESEARCH

A research quarterly published by the Institute of Chartered Accountants in England and Wales

Editors: C. W. Nobes, University of Reading
R. H. Parker, University of Exeter

Volume 23 Number 90 Spring 1993

CONTENTS

Editorial
Cash Flow Estimation and Cost of Capital for Overseas Projects Sharif N. Ahkam James C. Baker
The Effects of Senior Internal Auditor Behavior on Staff Performance and Satisfaction Barbara Apostolou William R. Pasewark Jerry R. Strawser
Management Discussion and Analysis: An Evaluation of Practice in UK and US Companies W. Collins E. S. Davies P. Weetman
Accounting for Intangibles: A Theoretical Perspective Allan Hadgson John Okunev Roger Willett
Triple-Entry Bookkeeping: A Critique Ian A. M. Fraser
The Effect of Behavior Monitoring and Uncertainty on the Use of Performance Contingent Compensation Leslie Kren Jeffrey L. Kerr
Management Accounting’s Diminishing Post-industrial Relevance: Johnson and Kaplan Revisited John Lowry

Book Reviews

Subscription Rates

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>Overseas</th>
<th>Overseas Airmail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>£26</td>
<td>£28</td>
<td>£33</td>
</tr>
<tr>
<td>Student</td>
<td>£13</td>
<td>£14</td>
<td>£19</td>
</tr>
<tr>
<td>Corporate/Institutional</td>
<td>£60</td>
<td>£62</td>
<td>£68</td>
</tr>
</tbody>
</table>

All subscriptions can be paid in US dollars at current rates of exchange.
ACCOUNTING AND BUSINESS RESEARCH

A research quarterly published by the Institute of Chartered Accountants in England and Wales

Editors: C. W. Nobes, University of Reading  
R. H. Parker, University of Exeter  
K. V. Peasnell, University of Lancaster

Volume 23 Number 91 Summer 1993

CONTENTS

On the Usefulness of Operating Income, Net Income and Comprehensive Income in Explaining Security Returns
C. S. Agnes Cheng  
Joseph K. Cheung  
V. Gopalakrishnan

Pastoral Accounting in Pre-Federation Victoria: A Case Study on the Jamieson Family
Garry D. Carnegie

An Analysis of Incentives for Australian Firms to Apply for Reporting Excellence Awards
Craig Deegan  
Gary Carroll

Foreign Currency Translation and FRS 1
George Georgiou

Value Added Tax in the UK: Identifying the Important Issues
Michael Godwin

Tests of Controls with Interim-Review Populations: New Results and Recommendations for Implementing Professional Pronouncements
Richard A. Grimlund

The Information Content of Cash Flows and the Random Walk: Evidence from the Helsinki Stock Exchange
Juha Kinnunen  
Jykri Niskanen

Bank-Corporate Relations: Change Issues in the International Enterprise
John Holland

Book Reviews

Subscription Rates

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>Overseas</th>
<th>Overseas Airmail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>£26</td>
<td>£28</td>
<td>£33</td>
</tr>
<tr>
<td>Student</td>
<td>£13</td>
<td>£14</td>
<td>£19</td>
</tr>
<tr>
<td>Corporate/Institutional</td>
<td>£60</td>
<td>£62</td>
<td>£68</td>
</tr>
</tbody>
</table>

All subscriptions can be paid in US dollars at current rates of exchange. Order from The Subscriptions Manager, Accounting and Business Research, 40 Bernard Street, London, EC1 1LD, England.

https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
ANNOUNCEMENT

ACCOUNTING AND BUSINESS RESEARCH

Volume 23 Number 92 Autumn 1993

CONTENTS

Changing Perceptions of the Role of the Company Auditor, 1840-1940
Roy A. Chandler
John Richard Edwards
Malcolm Anderson

The Impact of Accounting Principles on Profits: The US versus Japan
T. E. Cooke

Auditor Lobbying for Accounting Standards: The Case of Banks and Savings and Loan Associations
Heidi Hylton Meier
Pervaiz Alam
Michael A. Pearson

The Appraisal of Ordinary Shares by Investment Analysts in the UK and Germany
Richard Pike
Johannes Meerjanssen
Leslie Chadwick

On the 'Steady State' Properties of Financial Ratios
Huw Rhys
Mark Tippett

The Diffusion of Tax Effect Accounting in Australia
Baljit K. Sidhu
Greg Whittred

Book Reviews

Subscription Rates

<table>
<thead>
<tr>
<th>Category</th>
<th>UK</th>
<th>Overseas</th>
<th>Overseas Airmail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>£26</td>
<td>£28</td>
<td>£33</td>
</tr>
<tr>
<td>Student</td>
<td>£13</td>
<td>£14</td>
<td>£19</td>
</tr>
<tr>
<td>Corporate/Institutional</td>
<td>£60</td>
<td>£62</td>
<td>£68</td>
</tr>
</tbody>
</table>

All subscriptions may be paid in US dollars at current rates of exchange.
CONTEMPORARY ACCOUNTING RESEARCH

Volume 10, No. 1
Fall/automme 1993

Table of Contents

Articles

Firm Size, Security and Unexpected Earnings: The Anomalous Signed-Size Effect .......................... T. Shevlin and D. Shores

Determinants of the Choice of Accounting for Investments in Associated Companies .................... I. Zimmer, T. Wilkins and V. Mazay

Initial Public Offering, Accounting Choices and Earnings Management ........................................... J. Aharony, C. J. Lin and M. Loeb

An Experimental Investigation of Explanations for Outcome Effects of Appraisals of Capital-Budgeting Decisions ...... C. E. Brown and I. Solomon

Discussion of "An Experimental Investigation of Explanations for Outcome Effects of Appraisals of Capital Budgeting Decisions" ...... K. Jamal

Noisy Accounting Earnings Signals and Earnings Response Coefficients: The Case of Foreign Currency Accounting .......... D. Collins and W. Salatka

Discussion of "Noisy Accounting Earnings Signals and Earnings Response Coefficients: The Case of Foreign Currency Accounting" ............ J. Kao

Discussion of "Noisy Accounting Earnings Signals and Earnings Response Coefficients: The Case of Foreign Currency Accounting" .......... P. Griffin

Managerial Efficiency: A Study of Management Buyouts .......................... K. Verma

Discussion of "Managerial Efficiency: A Study of Management Buyouts" ...... H. Falk

Management Compensation Surrounding an Accounting Change and Long Term Construction Projects .................. B. Balachandran and R. Ramanan

On Combining Evidence from Sub-Populations into a Composite Conclusion .......................... J. E. Boritz, P. Zhang and S. Aldersley

Voluntary Income Increasing Accounting Changes ........ P. Cheng and D. Coulombe

French Translation of "Voluntary Income Increasing Accounting Changes" .................... P. Cheng and D. Coulombe

Managerial Reputation and the Informativeness of Accounting and Market Measures of Performance .................. W. B. Johnson, S. M. Young and M. Welker

Auditors' Generation of Diagnostic Hypotheses in Response to a Superior's Suggestion: Interference Effects ........ B. K. Church and A. Schneider

Book Review/Compte rendu de livre

Editor/Rédacteur: Jean Bédard


https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
ANNOUNCEMENT

JOURNAL OF ACCOUNTING CASE RESEARCH

The Journal is published to foster the use of cases in accounting education by facilitating the distribution of new cases to make them available to faculty and students at a nominal cost. All correspondence should be addressed to the Editor, The Journal of Accounting Case Research, Faculty of Management, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, Canada, T1K 3M4.

The Journal gratefully acknowledges the financial support of the Accounting Education Foundation of Alberta, a body established by the Institute of Chartered Accountants of Alberta to support accounting education in Alberta.

Editorial Policy

The Journal of Accounting Case Research publishes cases on accounting and related topics, and educational manuscripts related to the use of case materials in accounting. Case and Teaching Notes should be separated, and notes and references should appear at the end of the manuscript. Double-spaced manuscripts, on one side of the paper only, preferably submitted with a diskette in WordPerfect 5.1 containing all of the case material and teaching notes, are requested.

Cases submitted for review should have a separate title page with names and affiliations of all authors thereon. No names or references to the individuals involved in writing the case should be contained in the manuscript itself.

Cases should have a clear set of issues on which decisions are required, and they should be well-written in the English language. Any exhibits, tables, graphs or charts should be prepared in camera-ready form on separate pages, preferably in WordPerfect 5.1 compatible form (although that is not essential). A detailed teaching note is required, including some indication of courses in accounting for which the case is suitable, classroom format, other possible areas of use for the case, issues for discussion, directions for analysis, and any background material that would be relevant or appropriate for the case.

All cases submitted for review should be available for publication without restriction, unless a sponsoring agency (such as research funding agency or post-secondary educational institution) also holds a copyright. Under such circumstances, the agency should be willing to allow publication in the Journal of Accounting Case Research, subject to minimal restrictions on use by subscribers.

Cases submitted for review should be accompanied by a forwarding letter that contains either or both of the following, as applicable:

(1) The source of the material and the authorization of the provider of the material for publication of the case in the Journal of Accounting Case Research by the Accounting Education Resource Centre.

(2) A statement that any other material not provided by a specific source, as in (1), has been obtained from fictional or public domain sources, and that no copyrighted material has been used without permission.
ANNOUNCEMENT

It is the policy of the journal to have a minimum of two blind reviews, by qualified academic and/or professional reviewers, of all materials considered for publication. Reviewers are provided with guidelines by the Centre, and their recommendations are given a careful and thorough consideration in publication decisions. The ultimate decision on publication, however, rests with the Editor and the Management Board of the Centre.

The copyright on all published cases will be held by the Accounting Education Resource Centre jointly with the author unless otherwise stated. Publication in other venues will be allowed by the journal if permission is requested in writing and a suitable royalty arrangement (if applicable) is made.

Submission of Cases
Five copies of cases and articles should be submitted (with teaching notes, where applicable) to:

Professor Eldon Gardner, Editor
The Journal of Accounting Case Research
Faculty of Management
The University of Lethbridge
4401 University Drive
Lethbridge, Alberta, Canada T1K 3M4
Telephone: (403) 329-2726
FAX: (403) 329-2038
E-Mail: GRDNER@HG.ULETH.CA

Subscription Information
The Journal of Accounting Case Research is published three times a year (Spring, Summer and Fall) by the Accounting Education Resource Centre of the University of Lethbridge. Its basic subscription cost is $60 (Canadian) per year inside Canada and $60 U.S. outside of Canada. Back issues or individual copies, as long as sufficient supplies are available, will be provided for $30 each, Canadian dollars inside Canada and U.S. dollars outside Canada. G.S.T. applies to Canadian subscriptions or individual copies, making the total cost $64.20 and $32.10 respectively to Canadians. The cost to non-Canadians is $60 and $30 U.S. respectively.

Subscriptions will be sent by book post (fourth class mail), unless otherwise requested. An additional charge will be levied for first class mail, air mail or equivalent. Interested subscribers should contact Captus Press for Information on these options.

Captus Press may be contacted as follows for subscriptions and back issues:

Mail: Captus Press, Inc.
York University Campus
4700 Keele Street
North York, Ontario
M3J 1P3
Telephone: (416) 736-5537
FAX: (416) 736-5103

https://egrove.olemiss.edu/aah_journal/vol20/iss2/15
THE JOURNAL OF ACCOUNTING CASE RESEARCH
Published by Captus Press Inc.
for
The Accounting Education Resource Centre of the
University of Lethbridge

Vol. 2, No. 1, Spring 1994

Table of Contents (Tentative)

Decision Cases in Disguise
Eldon Gardner, University of Lethbridge, Lethbridge, Alberta, Canada

Chalo Enterprises
Alfred Nyalila, National Railways of Zimbabwe, Bulawayo, Zimbabwe

Cowells Small Machine Tools
Stuart Manson, University of Essex, Colchester, U.K. and Iain Gray, Sheffield City Polytechnic, Sheffield, U.K.

Gulf Canada Limited
V. G. Narayanan and Steven Huddart, Stanford University, Stanford, California, U.S.A.

St. David's Hotel, Exeter
Philip Moon, University of Leeds, Leeds, England

Manny's Video
Eldon Gardner, The University of Lethbridge, Lethbridge, Alberta, Canada

Don Russell (A) and (B)
Kenneth Merchant, University of Southern California, Los Angeles, California, U.S.A.

Financial Trustco Capital Ltd.
Chris Robinson, York University, Toronto, Ontario, Canada

Frank's Confectionary
Peter Clarke, University College, Dublin, Ireland

Trillium Enterprises Incorporated
Irene Wiecek, Toronto, Ontario, Canada

Stroudsburg Sporting Goods
James Borden and Wayne Bremser, Villanova University, Villanova, Pennsylvania, U.S.A.

Dress Acel Inc.
E. Bedirian and R. Collins, Concordia University, Montréal, Québec, Canada

Light Engineering Works (A) and (B)
Wasif Khan, Lahore University of Management Sciences, Lahore, Pakistan

Jacob's Farm
Robert Gruber, University of Wisconsin, Whitewater, Wisconsin, U.S.A.

Servex Telephone Corporation
Nas Ahadiat, California State Polytechnic University, Pomona, California, U.S.A.

Sunair
Larry Watkins, Northern Arizona University, Flagstaff, Arizona, U.S.A.

This new peer-reviewed journal is published three times per year by Captus Press Inc. with the
Accounting Education Centre of the University of Lethbridge. The Mandate of this journal is to
encourage the development of cases in accounting education, and to facilitate their distribution by
making them readily available to faculty and students. Individual subscribers may reproduce, for
their own classes, any material published in this journal.

The cost of a subscription is US$60.00 per year for orders outside Canada and Can$60.00 per
year for orders inside Canada. Back issues or individual copies, subject to availability, may be
purchased for US$30.00 and Can$30.00. G.S.T. applies to Canadian payments, for a total cost of
$64.20 and $32.10 respectively. Our G.S.T. # is R100802974.

Mail: Captus Press Inc., York University Campus, 4700 Keele Street, North York, Ontario Canada
M3J 1P3
Tel: (416) 736-5537
Fax: (416) 736-5793
CALL FOR PAPERS
ACCOUNTING CASE WRITING COMPETITION
Sponsored by
The Accounting Education Resource Centre
and
The Journal of Accounting Case Research
of the University of Lethbridge

Cases must be unpublished manuscripts which incorporate accounting topics and related material. Accounting is broadly defined to include financial accounting, managerial accounting, auditing, taxation and related finance topics. All cases submitted for the first time to The Journal of Accounting Case Research during the period between March 2, 1992 and April 30, 1994 will be considered for a prize. Case authors must be prepared to have their cases published in The Journal of Accounting Case Research at the discretion of the editor and the reviewers. Cases should be accompanied by a Teaching Note or Instructors’ Guide which includes an overview of the issues in the case, suggestions for use of the case and a set of guidelines for dealing with the issues raised in the case. An epilogue which indicates what actually happened is also desirable, though not necessary. Cases should be based upon real events or situations although they can disguised. Any case based upon real events that uses proprietary information must have permission from the source of that information. Cases based upon published information only must be certified to be so by their authors. Fictional cases must be so stipulated. While there is no length restriction, most cases should not exceed 30 pages double-spaced, exclusive of teaching notes. Short cases of only a few pages will get equal consideration along with more lengthy ones. The journal strives to provide a balance of short, medium and long cases in each of its issues.

All cases must be received by the Editor, The Journal of Accounting Case Research, Faculty of Management, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4, Canada, before April 30, 1994. All finalists will be notified of their position in writing by June 30, 1994. Prize winners will be announced no later than September 1994. Notification of acceptance for publication in the journal will follow the normal editorial review process which takes about two to three months after receipt of the case.

First Prize will be $6,000 U.S. Second Prize will be $3,000 U.S. Third Prize will be $1,500 U.S. All other finalists will receive $500 U.S. Prizes will only be awarded to cases of suitable quality for publication.

All cases submitted will be considered for publication in The Journal of Accounting Case Research. Authors of cases that are accepted for publication, whether finalists or not, will be notified of the reviewers’ comments and provided the opportunity of amending their cases for publication. All cases published will be subject to normal copy editing by the publisher, Captus Press Inc. At least one of the authors of a case to be published must be a subscriber to the journal, or a submission fee of $60 U.S. will be charged prior to publication. All cases published in the journal are subject to unlimited use in classes of instruction by subscribers of the journal without payment of royalties. The use of cases published by the journal in books and other media will be subject to a nominal royalty to be negotiated with the journal.
ANNOUNCEMENT

ASIA-PACIFIC
JOURNAL OF ACCOUNTING

A new journal has been registered in Hong Kong. Its mission is to publish high-quality scholarly papers from all over the world. Papers based on a strong theoretical foundation are encouraged in all fields of accounting. Papers with an Asia-Pacific orientation are especially welcome. The journal will be broad-based and will include theoretical, empirical and historical papers which demonstrate relevance of topic and readability of content. Papers that explore methodological improvements in surveys and case studies also are welcome. All submissions will be subjected to a double-blind process using experienced international referees.

CALL FOR PAPERS

Article length submissions are invited. Traditional presentation criteria are applied. Three copies, typed and double-spaced on standard size paper, with cover sheet identifying author(s) and affiliation(s) should be sent to:

The Editor
Asia-Pacific Journal of Accounting
Department of Accountancy
City Polytechnic of Hong Kong
83 Tat Chee Avenue
Kowloon, Hong Kong

Members of the Editorial Board include: Mohammad J. Abdolmohammadi, Joel Amernic, Peter Brownell, Hung Chan, Chee Chow, John K. Courtis (Editor), Bala Dharan, Alan Dunk, Ken Ferris, Ferdinand A. Gul (Assoc. Editor), Paul Healy, Bertrand Horwitz, Yuji Ijiri, Amy Lau, Jevons Lee, Richard Mattessich, Bob Parker, Tony Tinker, Bob Tricker, Benjamin Tai, Ken Trotman, Judy Tsui, Trevor Wilkins, Jilnaught Wong, Anne Wu, and Ian Zimmer.

Annual subscription fee is US$40 for individuals. There is a non-subscribers submission fee of US$35 which may be applied towards the subscription. Two issues are planned each year. The first issue is planned for the latter part of 1994. A Guide to Authors is available on request.