

Accounting Research on Co-operatives
Discussion Paper

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Brian W. Mayhew*
Associate Professor
Department of Accounting and Information Systems
School of Business
University of Wisconsin – Madison

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*Contact Information:

Grainger Hall
975 University Avenue
Madison, WI 53706
bmayhew@bus.wisc.edu
608-262-2714

Introduction

This paper discusses the critical first steps in engaging accounting researchers in research on the cooperative form of business. I do not propose a specific research question in this paper. Instead, I argue that a database of individual cooperative financial reports is a necessary first step to engage accounting academics in cooperatives research. I point out that such a database would be usable by other social science disciplines ranging from accounting's first cousin – Finance, to more distant relatives such as Sociology. I describe the basic data the database should capture and allocate that information to three different tiers based on the level of importance to researchers. The final section discusses some of the barriers to constructing such a database and some of the challenges that would exist in applying current accounting research techniques to Co-op research.

Accounting is often called the language of business. The key strength of financial accounting data is that the rules behind it do not change across companies or organizational form.¹ The basic consistency of financial accounting information enables researchers to learn a lot about a company, an industry, and/or differences in organizational forms. Indeed, in many cases accounting numbers provide the information necessary to both better understand a particular entity, and compare that entity to another.

¹ The one exception is government accounting which follows different rules. However, in many cases efforts are being made to convert government accounting to the same principles as corporate accounting. The statement about consistent accounting should not be construed to mean there are no differences in financial reporting across industries. It simply means the basic financial reporting rules do not change. I should also point out that tax rules can and do differ across industries and organizational forms.

For example, net income provides an accounting based measure of firm productivity that can be compared across firms.

Current accounting research takes advantage of the wealth of accounting information available for publicly traded investor owned companies (IOC) to study a wide range of organizational and policy issues. Similar research on cooperatives is hampered by a lack of publicly available accounting information, and a lack of understanding of potentially unique accounting issues related to cooperatives.

I propose developing a database of cooperatives' financial reporting data. The database would capture key financial data from a large set of cooperatives. It is important that the database provide a large set of data in a single database. As a starting point, it might make sense to focus on a few key industries such as electric utility cooperatives, or agricultural cooperatives to keep the scope of the database manageable. However, in the longer term a comprehensive database of financial information would provide a backbone for a wide range of academic research. From an academic perspective, access to such data would enable careful study of the cooperative form of organization and comparisons to other organizational forms that should facilitate better understanding of the strengths and weaknesses of cooperatives and IOC's.

Call to Develop a Comprehensive Accounting Database for Cooperatives

I propose creating a database of cooperative financial reporting information. The database would contain financial information from a large population of cooperatives. It would also contain financial information over time. This data would allow researchers to study both a cross section of cooperatives, and cooperative activity over time. The

database would parallel similar databases available based on publicly traded (IOC) companies. For example, Standard & Poors maintains the Compustat database of public company financial information. This database is widely used by accounting researchers. It is also used in finance and other related social science disciplines. A similar database, even if limited in scope, would provide a solid bases for a wide range of cooperative research.

The Compustat database provides a basis for comparison to what I propose here. Compustat attempts to capture all of the financial statement data for publically traded companies in the United States. It includes over 200 data fields for each company included in the database. The data is gathered from the companies' quarterly and annual filings with the Securities and Exchange Commission. It also covers all the years a company operates as a public company. The data is stored in machine-readable form that is relatively easily converted into data that can be analyzed by modern statistical software. An academic specialist (WRDS – Wharton Research Data Specialists) has arisen to repackage the data so that it is available over the web. Researchers with paid subscriptions to the service can generate data files that meet researchers' custom data requests over the web. The custom data set is nearly instantaneously provided to the researcher.

The Value of a Large Database

The academic accounting literature covers a wide-range of organizational and public policy issues related almost exclusively to the IOC form. The majority of this research focuses on publicly traded companies whose financial information is publicly available through SEC (www.sec.gov), as well as, through data suppliers such as

Standard and Poor's. It is not just the public availability of the data that facilitates its use, but the availability of a searchable and downloadable databases that captures the data for a large number of firms. The electronic format facilitates analyzing a large population of firms with modern statistical software. It is not unusual to see accounting studies using IOC data with 100,000 firm/year observations.

A recent paper (Tuttle and Dillard 2007) documents that over 2/3's of accounting research is based on data from the Compustat database and similar data sources. A new database of cooperatives based data would find a large group of researchers trained to work with such data. Tuttle and Dillard (2007) shows that the dominance of Compustat based research has increased over the last 20 years. If we look back even further to the mid-1960' there was almost no such research, largely because the data was not available in computer readable form. Once it was available in computer readable form a few seminal papers were written that introduced the accounting field to the data and the type of fundamental questions that it could address. The result is that such data now dominates the research discussion in accounting. There, of course, is no such guarantee that the same would happen with cooperatives data, but it seems a necessary condition for even a modest level of ongoing research.

The accounting literature attempts to answer a number of interesting business and public policy issues using this publicly available accounting data. Accounting studies examine topic such as:

- Choice of accounting method (see Fields, Lys, and Vincent 2001)
- Intentional or unintentional manipulation of accounting information (See Healy and Palepu 2001)

- Demand and supply of auditing (Blackwell et al. 1998)
- The role of taxes in business decisions (see Shackelford and Shevlin 2001)

In most cases, these topics are not studied in a vacuum, and not just with a goal of understanding accounting. Recent research has focused heavily on the use and misuse of accounting numbers by management and firms. These papers often examine the inherent agency conflict between management and owners, and the role of accounting information in both attempting to resolve these conflicts, and in providing evidence of such conflicts.

Healy (1985) first explored whether managers manipulate accounting accruals to meet management's bonus targets. He found evidence that managers used accruals to meet bonus targets when they would otherwise fall short. Furthermore, he found they used accruals to save for future periods when earnings significantly exceed the bonus target. Finally, he found that when accruals could not be manipulated enough to hit the current bonus target firms typically decided to load up on negative accruals by taking a so-called "big bath" in an attempt to increase the chance of hitting future targets.² A search on ScienceDirect shows 169 cites of this classic paper, and numerous recent paper that continue to explore the linkages between reported accounting performance and executive pay. The area of management compensation and its association with accounting based performance would be particularly interesting to study in a cooperatives setting given the difference in the agency relationships between owners and managers. The difference in entity objectives between IOC and cooperatives should also impact compensation policies and the compensation and accounting linkages.

² Basically the idea behind a big-bath is to recognize as much expense today as possible in hopes that in future periods, you can report fewer expenses and as a result higher earnings that are more likely to beat the bonus target.

Accounting research has also looked at governance structures used to monitor firms. For example, Ashbaugh, LaFond and Mayhew (2003), examine whether purchasing consulting services from a firm's auditor results in the auditor allowing that firm to manipulate accruals to its advantage. Another example looks at how board of director composition impact earnings management (Klien 2002). Cooperatives provide an excellent setting to examine when audits are used or not used as part of the monitoring function, and the resulting consequences. A paper examining the presence or absence of audits among private companies found unaudited companies paid 25 basis points more for their bank debt than audited companies (Blackwell et al 1998). Data from cooperatives would facilitate similar research.

It would also be very interesting to compare the characteristics of cooperatives that hire versus do not hire auditors, and which audit firms they hire. There is a large literature that considers the auditors specialization and reputation. This literature argues large audit firms have more reason to protect their reputation and therefore are higher quality. It argues companies select these high quality auditors to signal the quality of their financial statements. This research has produced mixed results. The mixed results may result from little differences in agency costs for the public companies studied. Co-ops are more likely to have a divergence in agency cost which might produce a stronger test of these agency theories.

Finally, accounting research provides examples of how differences in corporate form affect accounting decisions and financial reporting practices. For example, Beatty, Ke and Petroni (2002) show that publicly traded banks manipulate earnings to meet certain benchmarks while private banks do not. This research provides a classic example

of how by comparing the accounting in two different organizational forms helps us better understand potential issues with both forms. Clearly the corporate form of organization places pressure on public banks to meet earnings targets.

Uses of Co-Op Accounting Data Beyond Accounting

A database of annual reports filed by cooperatives would provide a basis for a wide range of social science research that extends beyond accounting. Proof for this assertion lies in the research conducted using Compustat data on IOC's, and in the relative paucity of research that exists for non-public IOC's.

A Finance paper provides an example of how accounting data is used to compare different organizational forms. Ang, Cole and Lin (2000) use accounting data to compare agency costs between private companies 100% owned to publically traded companies with disperse ownership. The availability of private company data from a special survey enabled them to test Jensen and Meckling's (1976) seminal paper on agency theory. Ang et al (2000) compare the efficiency of 100% owned private businesses with a matched sample of public companies. They use Sales/Assets as a measure of efficiency. After controlling for industry differences, this metric enables them to evaluate how efficient the private firms are compared to the public companies. Public companies potentially face much higher agency costs because ownership is spread over many shareholders. In contrast, the private companies where 100% owned by a single owner. Such companies by definition cannot have any agency costs. The authors document that consistent with the predictions of agency theory, public companies are much less efficient than private companies suggesting public companies face higher agency costs. I think it is very interesting to consider where cooperatives might fall on the agency cost spectrum.

While they do not have the performance pressure that IOC's face, they still are often owned by a large number of owners who do not necessarily share the managers same preferences.

Although outside my scope of expertise, management research uses Compustat data to analyze a number of issues. Such research examines issues such as managerial entrenchment and turnover. It also compares efficiencies across entities with differing corporate governance structures. I strongly suspect that management researchers could make good use of a large database of cooperatives accounting data.

The Components of the Database

Table 1 lists the key data that should be captures in a cooperatives database. I segregate the table into three parts. Tier one includes the basic data that should be available for almost any cooperative that prepares basic financial statements. A cooperative that does not capture the basic data in this tier probably should be excluded.³ This data is critical for performing simple financial performance comparisons including standard measures of productivity and efficiency. Tier two outlines a comprehensive set of accounting data that will be available for most cooperatives that prepare full financial statements. It is likely that any given cooperative will not have one or more elements of this second tier information, but on average will have a vast majority of it. While the

³ It could be argued that the level of financial information provided by the co-operative is interesting in its own right. Some research has already looked at reporting differences across co-operatives in small regional settings (e.g. nova scotia??). At the end of the day, researchers will be more excited about companies that have data than those that do not. Furthermore, the scope of any such project must have some boundary or it will never be completed, and limiting the data to companies that have at least minimal financial reporting seems like a good boundary.

data in part one is necessary for the cooperatives inclusion in the database, the data in part two can be incomplete for a given cooperative and yet that cooperative should still be included. The same criteria apply to part three. Tier three captures supplemental financial statement information. The availability of this information will likely be much lower than part two. This data would allow much more refined study of cooperatives, and should be captured whenever possible.

Tier One – Basic Financial Data

The Tier One information listed in table 1 is necessary for any company to be included in the database. Such information provides a basis for most generic tests of profitability, efficiency, and size. The subset of information in bold is absolutely necessary, while the remainder could be omitted if getting a large population is deemed more important. The bolded information includes assets, sales, net income, total liabilities, and equity.

This data provides the basis to calculate key performance and efficiency metrics. For example, return on equity (ROE), return on assets (ROA), and debt to equity ratios can be calculated. Such metrics provide clear insight into the nature of a company's business and how efficiently the business is run. Additional metrics such as sales/assets have been used in research comparing efficiency of private companies to publicly traded companies (Ang et al. 2000). Such a metric makes no assumption about profitability, just about how efficiently the company's assets have been employed. Cooperatives researchers in particular should consider this metric given that cooperatives do not have profit maximization as a stated goal.

Tier Two – More Detail and Expansion of Original Data

The data in Tier Two provides more detail than Tier One. In general, it provides the sub-components that sum to the totals captured in Tier One. For example, current assets is broken down into cash, accounts receivable, inventory, prepaid expense, short term investment and other current assets. The refined data provides the potential for more sophisticated econometric models. For example, abnormal accruals (sometimes labeled discretionary accruals) can be estimated with the data items included in Tier Two. Abnormal accruals are often used as a proxy for earnings management. Tier Two also includes cash flow statement information. In my brief review of electric utility financial statements, only one company included cash flow information on its web-site. My hope is that more cash flow information is available from these companies. Cash flow data provides other measures of efficiency and financial health that are not available from the balance sheet and income statement alone. It also provides information on annual investment and financing decisions made by the cooperative.

Tier Three - Supplemental Information

Tier three captures information from the financial statement footnotes and from the cooperatives annual report to patrons. The most important piece of information is the Patron refund policy (and more generally the Patron Equity policy). This information is unique to cooperatives, and would provide a path to cooperative specific research. The variation in policies across cooperatives would provide some interesting insight into the cooperative form in general. I think it would be particularly interesting to examine management entrenchment and agency cost arguments with the patron refund policy as a guide. It might also provide some insight into whether the cooperative is managed with a long or short-term horizon.

Tier Three also includes information about the auditor and the audit report. There is a large and vibrant literature in accounting on audit markets, auditor choice and auditor specialization. Much of my own research is in these areas. Auditors are often considered the most important monitor of a firm's financial reporting. Financial reporting is not used to by other stakeholders to monitor and govern the firm. The firm's choice of auditor reveals insight into how important it views that monitoring function. It would also be very interesting to assess how much auditors specialize in cooperatives.

I have expanded part three to capture some basic company data including location, phone and website. This information is not of upmost importance for a researcher but would be easy to capture and may prove useful.

Barriers and Issues with Co-Op Research

Research on the Cooperative Domain

Research on cooperatives faces a few significant challenges that will make progress difficult. Much like the business form itself, real progress awaits for someone who captures the cooperative spirit, and is moved to study this unique business form. With that in mind, I point out a couple of the challenges such research faces, and where appropriate, offer some suggestions to face those challenges.

The main challenge will be to evaluate cooperatives based on their own goals and objectives. As I have considered cooperative based research, I have struggled to separate it from research on IOC's. This is a significant problem. IOC's are fairly straightforward to study, largely because the researcher can safely assume the IOC's main goal is to maximize shareholder return. Of course, this assumption does not apply to

cooperatives. Cooperatives exist for a number of reasons, including filling market voids left when profit maximization does not entice an IOC firm to enter the market.

The lack of a single goal that extends across cooperatives is a bigger problem than it might appear. Many mainstream areas of accounting research such as agency theory, efficiency (i.e. return on equity) and earnings management are based on the assumption of a profit-maximizing firm. And more specifically, this research assumes the firm attempts to maximize shareholder wealth. Cooperatives often do not share a common goal as well defined as profit maximization. In reading the core values of cooperatives as exposed by the various cooperative trade organizations (e.g. ICA 2008), it becomes clear that a number of different objectives can drive the purpose of the cooperative, and as such no global assumption like profit maximization is possible.

The lack of a single common goal across cooperatives does not mean that rigorous research on cooperatives is impossible. It simply means we must be careful when we attempt to study cooperatives using the same tools and models we use in existing accounting and social science research. In its initial stages, cooperatives research may be best served by sticking to the description of cooperatives on their own domain rather than comparing them with IOC's. It might also be wise to group like cooperatives together to study rather than treat all cooperatives as equals. For example, I decided to look at just rural electrical utility cooperatives to see what kind of financial information they made available on their web-sites. Within this constrained subset of cooperatives, I can make a reasonable assumption that rural electrical utility cooperatives all have similar goals and objectives. At the same time, it is at least conceptually possible to differentiate among rural electrical utility cooperatives for purposes of evolving a

theory of financial reporting. Such differences might exist based on the financial size of the cooperative, the geographic span of its operations, number of members, or diversity of services.⁴

Database Construction Challenges and Potential Solutions

One of the barriers to constructing a database of cooperatives financial information is the cost. Databases for IOC companies such as Compustat exist because companies can earn a profit by creating such databases and the data is publically available through the Securities and Exchange Commission. Professional investors desire accounting information to help them evaluate stocks, and are willing to pay for such information in easily accessible form. Academic researchers have been able to purchase the information from these for profit companies at reduced rates often with a substantial delay in time (six months to a year) compared to the institutional investors. Academics still pay relatively high prices for the data (i.e. UW pays approximately \$18,000/ year for basic Compustat through WDRS). Cooperative investors (using the term loosely) seem much less likely to pay for such data, so it seems unlikely that a company can arise to become a for profit provider of cooperative accounting data. Moreover, it is unclear whether an academic market exists in sufficient size to profitably collect and disseminate such data. Budget cuts to Universities in general have reduced library budgets and

⁴ I was somewhat surprised to note that many rural utility co-ops also sell appliances and appeared to sell or at least be affiliated with internet providers and satellite TV providers. The span of services offered was interesting in its own right.

academics access to for profit databases. I believe the biggest impact of a cooperatives database would come if it could be provided at a relatively low cost.⁵

There is a secondary problem with collecting cooperative data in that co-ops generally have no obligation to provide financial information to the public. There is not a central repository of information similar to the SEC. However, in many cases it appears that state statutes at least require co-ops to provide financial information to their members. At this point, it is unclear to me how extensive such information is and whether we would be able to access it. In contrast, IOC's that publically trade their stocks have to provide financial data on a quarterly basis to the SEC. Furthermore, the SEC requires that public companies file it in a format that enables the SEC to provide financial data via the web through the EDGAR database.⁶ The advent of the web has made data collection from the filing even less expensive. As a result, new data consolidators have arisen such as Audit Analytics who provide data previously not gathered by Compustat.

The advent of the web provides some hope for future data collection from cooperatives. Web Crawlers and other such tools could be employed to go out on the web and look for financial information from cooperatives. There also is a lot of excitement among accounting experts over the new XBRL initiative that would provide data tags on financial information such that database management programs could identify information as representing a pre-determined financial statement element. For

⁵ I am tempted to argue it should be free. However, there is an argument that a slightly restricted database in terms of cost might actually induce more researchers to use it because there is some barrier to entry that increases the returns to their efforts.

⁶ The data can be accessed via www.sec.gov under EDGAR.

example, using XBRL the financial statement preparer would “tag” a piece of financial information as “sales” such that a database would recognize it as sales. In principle this would enable someone to create large databases of this information with common data elements, thereby making comparisons easy. XBRL is being rolled out of over the next few years to public companies who report to the SEC. In principle, it could be extended to cooperative. However, I have no idea whether cooperatives would elect to incur the expense of adding XBRL tags to its electronic financial statements.

In exploring cooperatives and trying to fashion a foot-hold for future accounting research, the solution is at least partially apparent to me. A cooperative could be created with a mission to create a source of accounting information from member cooperatives. The cost of such a cooperative would likely not be trivial, and in all likelihood it would likely consume more financial resources than it creates. The benefits to such a database are hard to measure. On an intangible level, the ability to study the financial structure and performance of cooperatives would be quite valuable.

Another potential solution is for the National Society of Accountants for Cooperatives (NSAC) could create and maintain the proposed database. NSAC produced a publication that suggests that it collects at least a sampling of co-op financial statements. *Financial Reporting by Cooperatives (2005)* appears to be a summary of current accounting practice by cooperatives. Similar type publications (e.g. *Trends and Techniques*) are provided for IOC companies by other organizations such as the American Institute of Certified Public Accountants (AICPA). These publications summarize recent financial reporting trends including examples of footnote disclosures

made by other companies. Whether the NSAC would be willing to expand its work to include the maintenance of a database of cooperative financial information is unclear.

Late in the process of constructing this paper, I became aware of at least one set of consultants who appear to have gathered some comprehensive accounting data. CoopMetrics, created by Walden Swanson and Kate Sumberg, appears to be a consulting company that specializes in helping cooperatives develop via financial comparisons to other cooperatives. It appears that it gathers at least some financial information to support the metrics it provides. My understanding is it is particularly well developed for food-based cooperatives. This data source could be explored further to see if it could provide a starting point for the construction of a larger database.

Conference discussion noted that there are a number of organizations that collect co-op financial information in some form or another. Both mutual insurance companies and credit unions provide financial information to regulators, and I believe there are data providers who have aggregated the data into databases that are available to researchers. The extent to which the data captures what I propose is a little unclear, but we may be able to discuss with those providers ways in which the data could be made more usable. The cooperative banks also require financial statements from many of their borrowers, and may have aggregated it internally for their own use. Such data could potentially be used to form the proposed database.

A cooperative financial statement database faces other barriers as well. Whether such information would provide positive or negative press, or outcomes to cooperatives is hard to guess. It is not hard to guess that some cooperative managers would not appreciate being compared to other managers. We know IOC managers do not like the

comparisons. Furthermore, it is possible that the financial data could be used against the co-op's either through threats of market entry by IOC's, or by patrons who use the data to argue against co-op management.

Database Construction

I am not an expert on database construction. I have a basic knowledge of some of the issues faced when trying to create such a database, but am by no means qualified to address these important issues. I can identify a few key issues that would need to be considered. (1) What format to use to create the database including the underlying programs that would be needed to access the data? As I have stated previously, the data must be easily accessed by researchers in a format that can be easily adapted to common statistical programs such as SAS. The Compustat database is now available through a web-based provider (WRDS –Wharton Research Data Services). This enables the researcher to go to a web site to specify the desired data from the database and the format of the resulting dataset. The requested data is then generated and posted in the researcher selected format such as Excel on a downloadable website for easy retrieval. The processing often occurs within a few minutes. (2) Some kind of unique identifier is needed for each cooperative in the database, and this identifier has to be retained as that cooperative's financial data is added year after year. For most co-ops this would not be hard, but it is hard when there are linked co-ops with somewhat common ownership. It gets even harder to deal with when there are mergers, as it is not always easy to determine whether the surviving entity is a new entity, or dominated by one of the existing entities. My understanding from readings about cooperatives such mergers are often among equals, and would be comparatively harder to classify than IOC mergers.

Conclusion

A database of accounting data would provide the information necessary for a broad range of academic research by both accounting scholars and by other social scientists. The paper proposes the construction of such a database. It includes a hierarchy of data items that should be included in the database. The hierarchy also suggests the minimum data necessary for inclusion in the database. The paper discusses some of the challenges in putting such a database together and making it available for researchers including identifying an organization that would oversee constructing and maintaining the database. I also discuss some of the inherent challenges in conducting cooperative research, especially the potential for inappropriately applying IOC based models to such studies.

I firmly believe this database is necessary to engage the broad academic community into research on cooperatives including evaluating the economic impact of cooperatives. There has to be a mentality of “if you build it, they will come” in order for this endeavor to succeed.

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Table 1 – Financial Information Required

<p>Tier I. Basic Financial Information</p> <p>Current Assets Fixed Assets (Property, Plant and Equipment) Other Assets Total Assets (total of current, fixed and other) Current Liabilities Long – term Liabilities Total Liabilities (current plus long-term) Total Equity Sales Cost of Goods Sold Operating Costs Other income and expense Net Income Industry</p>	
<p>Tier II. Additional Financial Information</p> <p>Balance Sheet Data: Cash Accounts Receivable Inventory Prepaid Expenses Short term investments Other current assets Total Current Assets Land Buildings Equipment Construction in Process Intangible Assets Investments in other cooperatives Other long-term investments Total Long-Term Assets Total Assets</p> <p>Income Statement Data: Depreciation Selling, General and Administrative Other operating costs</p> <p>Interest income Other income Tax expense</p>	<p>Balance Sheet Data: Accounts Payable Accrued Expenses Notes Payable Current Portion Long-Term debt Patronage Refunds Payable Total Current Liabilities Debt Public Debt (Bonds) Total Long Term Liabilities Common Stock Allocated member equity Unallocated member equity Total Equity</p> <p>Statement of Cash Flow Data: Depreciation per cash flow statement Operating Cash Flow</p> <p>Additions to Fixed Assets Gains and Losses on Fixed Assets Investing Cash Flow Patronage Refunds Financing Cash Flow</p>

<p>Interest expense Other expense Patronage Refunds</p> <p>Cash Patronage Payments Allocated retained income Unallocated reserves Unrealized Gains and Losses – income Unrealized Gains and Losses – equity Comprehensive Income</p>	
<p>Tier III. Supplemental Information</p> <p>Patronage Refund Policy Patronage Audit Opinion Auditor Name Auditor City Number of Patrons/ Members Number of Employees Executive Compensation (officers, and/ or top-five employees) Website Address Phone number</p>	

Basic Financial Information – this information is necessary for any company to be included in the database. Such information provides a basis for most generic tests of profitability, efficiency, and size. The subset of information in bold is absolutely necessary, while the remainder could be omitted if getting a large population is deemed more important.

Additional Financial Information – this information expands on that captured in level I. Not all cooperatives will have this level of detail, yet most will. This more refined data enables more detailed examination of a cooperatives business model.

Supplemental Information – this information provides additional insight about the company. Both the patronage policies and the choice of auditor provide particularly useful information on the incentives and monitoring of the firm. Contact information also would enable researchers to conduct more detailed examination of the company.