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AUDITOR SWITCHING AND THE GREAT DEPRESSION

Abstract: This paper explores the pattern of auditor switching in Canada before and during the Great Depression based on a sample of 1,344 financial statements. Hierarchical log linear analysis shows that there is a significant change in the pattern of switches. Prior to the Depression, the contemporary pattern of auditor switching is observed; that is, there is a flow of clients from small to large audit firms and from Canadian to international audit firms. During the Depression, however, this flow of clients is reversed with large international firms losing clients through switches, on average, to Canadian and smaller audit firms. The contemporary audit literature suggests possible reasons for the observed patterns in terms of the demand for higher quality audits by clients and audit firms' risk management of potential client bankruptcy.

This paper explores changes in the pattern of auditor/client switching and continuity in Canada before and during the Great Depression of the 1930s. The Great Depression has been referred to as a "defining moment" in economic history [Bordo et al., 1998]. It provides a setting that allows the market's response to shocks to be assessed. The shock to the audit market was twofold. First, the Depression exposed the securities market manipulations of the late 1920s and made potential and current investors aware of the importance of credible financial information for assessing the liquidity, solvency, and future earnings potential of firms [Previts and Merino, 1979, p. 245]. This shock increased the value of the audit as a signal of the quality and

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credibility of financial statements and, hence, provided incentives for client firms to switch to higher reputation auditors.¹

The second impact of the Depression was to increase dramatically the risk of financial distress and bankruptcy faced by client firms and, derivatively, the risk of loss of reputation and litigation for damages faced by auditors. Audit firms must assess the risks posed by their portfolios of clients in order to ensure their profitability and survival. This will involve a pre-engagement assessment of the risk of new clients and the resignation from engagements with existing clients where the risk level has become unacceptable. The Depression dramatically, if temporarily, increased the average risk level of auditors' portfolios of clients. This could result in auditor switches initiated by the auditor in order to maintain an acceptable level of risk in its portfolio of clients.

The Great Depression also coincided with significant changes in the regulation of the audit market in some countries [Edwards, 1989]. In the U.S., the Securities Exchange Acts of 1933 and 1934 increased the disclosure requirements of publicly listed firms and increased the auditor's liability for fraudulent statements. While the effect and intent of such legislation on the stock markets is subject to debate [Benston, 1973; Merino and Neimark, 1982; Cooper and Keim, 1983; Tinker, 1984], its impact on the U.S. auditing profession is less controversial. The audit profession emerged from the Depression with a statutory demand for its services, revised audit objectives (i.e., the change in focus from the balance sheet to the income statement and the greater emphasis on the "fairness" of the financial statements rather than the accuracy of their tracking of transactions), and greater liability for misleading financial statements [Gilman, 1939].

In countries of the British Commonwealth, audited financial statements were required by statute well before the Depression (1844 in the U.K., 1907 in Canada). In these countries, there was no immediate legislative response to the financial reporting issues exposed by the Depression. Nonetheless, the Depression also coincides with changes in the practice of auditing in these countries [Chandler et al., 1993]. In the U.K., the 1931 Royal Mail Steam Packet Case, where secret reserves were used to hide deteriorating performance, is widely credited with increasing the emphasis on the income statement and the qual-

¹See Lieberman [2001] for a discussion of periodization strategies including the "exogenous shock" approach used here.

ity of earnings, although an audited income statement was not required by law in the U.K. until 1947 [Edwards, 1989]. Similarly in Canada, there is evidence of a change in auditing practice even though the disclosure of audited income statements was not required until 1951 as a professional standard and 1953 as a matter of legislation [Anderson, 1977, p. 10]. In these countries, then, changes in the demand for audit services were played out in the marketplace and professional practice rather than being brought about explicitly through regulation.

This paper explores the relationship between the Great Depression and patterns of auditor switching and continuity in Canada based on a sample of audited financial statements dated between 1910 and 1941. The Depression in Canada was as severe as that in the U.S. [De Long, 1997], but this setting provides an opportunity to observe the relationship between the Depression and changes in behavior of the audit market in the absence of changes in government regulation of auditing coincident with that event.

The paper is organized as follows. In the next section, the contemporary literature on auditor switching is reviewed. This review suggests that the Depression may have had contrary effects on the supply and demand sides of the audit market. On the demand side, four explanatory models of auditor switching each suggest that clients should prefer larger, better reputation auditors when the demand for credible financial information increases. On the supply side, the literature suggests that as the financial risks of clients increase, auditors should be more likely to resign in order to maintain a profitable portfolio of lower risk clients. The institutional context of the Canadian audit market between 1910 and 1941 is then discussed to identify which of these models may apply in this setting. This is followed by a description of the data used and presentation of an analysis of auditor continuity and switching behavior before and during the Depression. The paper ends with a discussion and some historical speculation on the results.

PRIOR LITERATURE AND INSTITUTIONAL CONTEXT

The audit market is highly differentiated with a wide range of sizes of audit firms as well as audit firm specialization in geographic and industry-specific markets [Yardley et al., 1992]. The decision by a client to hire or retain an auditor and the decision by the auditor to accept or retain a client is a complex process subject to many variables. The sections below review the domi-

nant supply and demand side theories of auditor switching in the contemporary literature.

The Demand for Audit Services: Our understanding of the dynamics of the audit market is largely based on data from the last 30 years in the U.S. This stream of research was triggered by the 1976 U.S. Senate's investigation into the "accounting establishment" [Metcalf, 1976]. The report documented the growing concentration of the supply of audit services to publicly traded companies by a small group of audit firms and their influence on the standard-setting process. It was not clear, however, whether this oligopoly was a result of market forces or uncompetitive behavior by the firms. The report led to a series of studies that examined such things as the pricing of audit services [Simunic, 1980], the initial choice of auditors by firms [Simunic and Stein, 1987], and the pattern of auditor switches, the subject of this paper. The argument was made that if audit pricing, auditor choice, and auditor switches could be explained by economically reasonable matching of the characteristics of auditors and clients, then the structure of the industry could be attributed to competitive market forces rather than to attempts by the firms to gain monopoly power.

This paper focuses on the pattern of auditor switching and continuity. The dominant pattern identified in contemporary literature has been a persistent shift of clients from small to large audit firms. There are four explanations for this pattern. First, clients may be using the reputation for quality of the larger firms to increase the credibility of their financial statements [DeFond, 1992; Teoh and Wong, 1993; Colbert, 1998]. In the face of uncertainty about the possible quality of auditors, a "brand name" may signal better monitoring of management reporting and lower agency costs. In order for this mechanism to be operative, the brand-name effect must be stronger than the quality effect provided by licensure and the minimum education standards required as a prerequisite for licensure. This effect is also consistent with "premium" pricing for the services of larger firms in competitive markets [Francis, 1984; Bandyopadhyay and Kao, 2001].

Second, clients may be relying on the "deep pockets" of large audit firms and liberal liability laws to provide insurance to potential users of financial statements in the event of an audit (or business) failure [Beatty, 1993; Menon and Williams, 1994]. The extent to which audit firms have been held liable for damages to clients and third parties varies across countries and across

time. The large firms have claimed that there is a liability crisis in auditing [cf., Freedman, 1993; Schuetze, 1993]. They suggest that the audit market may collapse if auditors are exposed to claims from all potential users of financial statements if there are no limits on the extent of their liability. These arguments lead to calls for proportionate liability and incorporation of professional practices as means of limiting liability [Kirby, 1997]. This explanation appears to be particularly relevant to the U.S. where third party liability and class action suits against auditors are more likely to hold.

Third, there may be economies of scale or scope in the audit market such that larger audit firms can produce services at lower cost than smaller firms [Francis and Stokes, 1986]. The economy of scale argument implies that there is a pool of fixed costs associated with the operation of the audit firm. These costs may include the costs of administration, research, information systems, and the fixed costs associated with the complement of partners of the firm. If there are economies of scale, clients may switch to larger audit firms as they grow in order to take advantage of audit efficiencies. The economies of scope argument implies that the audit firm can supply multiple services to a client less expensively than several firms supplying each service independently [AICPA, 1997]. The economy of scope argument usually links information flows from the audit to management consulting [cf., Shu, 2000]. If there are economies of scope, a client may switch auditors as its needs for non-audit services grow to allow one firm to provide both sets of services. Note, however, that economies of scope may involve offsetting problems associated with maintaining the independence of the audit.

Finally, if the audit is indivisible, clients may need to switch to larger firms as they grow to get the service they require [Benson, 1979; Chan, 1995]. Doogar and Easley [1998] demonstrate that the existing distribution of the sizes of audit firms can be derived from the distribution of the sizes of client firms using this assumption. This may apply to the need for the audit firm to provide service over an extended geographic range or to the size of the audit team required to complete the work on a timely basis. For example, Richardson [2001] notes that the change in strategy of Canadian banks from raising money from commercial term deposits and share subscriptions to reliance on demand deposits resulted in an expanded retail banking network that many smaller audit firms could not service.

We will consider the relevance of these theories to the

current study; i.e., the time period surrounding the Great Depression in Canada, after reviewing contemporary theory concerned with the supply of audit services.

The Supply of Audit Services: The literature examining the supply of audit services is of more recent origin. It can be dated to the bankruptcy of the audit firm Laventhol and Horvath in the U.S. in 1990. At that time it was the seventh largest audit firm in the U.S. but was unable to bear the costs of litigation of charges of negligence in a number of business failures during the 1980s. This event highlighted the importance to audit firms of managing the riskiness of their portfolios of clients (i.e., the business risk to the audit firm in addition to the risk of rendering an incorrect audit opinion [audit risk]) [cf., Brumfield et al., 1983; Jubb et al., 1996]. Subsequent research has demonstrated that audit firms take the riskiness of clients into account in setting their fees and respond to changes in business risks by adjusting their portfolios of clients away from those facing liquidity and solvency problems [Krishnan and Krishnan, 1997; Jones and Raghunandan, 1998; Johnstone and Bedard, 2004].

Shu [2000] documents that clients whose auditors resigned were more likely to move to a smaller audit firm. This would occur if the risks of litigation/reputation loss are less to smaller firms if the smaller firms have different risk tolerances than larger firms, or if smaller firms were industry specialists with superior knowledge of business risks [Menon and Williams, 1999; DeFond et al., 2000]. This literature thus suggests that in times of increased business risk, large audit firms will protect their reputations by resigning from, not renewing, or refusing engagements where they are unable to assess or manage the business risk.

The Canadian Institutional Environment: This section reviews the Canadian institutional environment to identify the demand and supply issues noted in the theoretical literature that are most likely to affect auditor switching and continuity in the period prior to the World War II in Canada. First, the reputation or quality differences among firms are likely to be larger during this period than in contemporary studies. Licensing requirements for public accountants were not instituted until 1946 in Canada, beginning in Quebec. This means that there were no minimum quality standards for auditors during the pre-Depression or Depression periods. In addition, the audit market was considerably less concentrated, and the number of audit firms

active in the market was larger than is the case in many contemporary markets [Danos and Eichenseher, 1986; Richardson, 2001]. It is reasonable, therefore, to assume that the variation in quality among auditors in this period was greater than usually encountered in contemporary auditor switching studies.

Second, the auditors' exposure to legal liability is significantly less in Commonwealth countries than in the U.S. [Anderson, 1977, p. 95; Baker, 1996]. The common law exempts auditors from liability to third parties under the strict privity of contract doctrine. This doctrine was first introduced into the area of auditors' legal liability by the *Ultramares* case in the early 1930s [*Ultramares v. Touche* 174 N.E. 441 N.Y. 1931]. Although this case was tried in the U.S., it is widely cited in U.K. and Canadian courts. In the U.S., this doctrine has been superseded by the liability provisions of the 1933 and 1934 Securities Acts for listed companies. More recently, some states have also applied broader liability rules based on the Restatement of Torts (Second) Section 522 or by the "reasonably foreseeable" doctrine introduced in *Rosenblum* [*In. v. Adler* 461 A.2d 138 N.J. 1983]. In the Canadian environment, and particularly during the period examined, the auditor's liability for negligence was limited to the client.

Even though the risk of litigation was relatively lower than at present, audit firms sought to avoid financially distressed clients to protect their reputations and the stability of their fee income. Cowperthwaite [1986, p. 22], for example, notes that both Peat Marwick and Price Waterhouse refused to audit stock brokerages during the Depression because of their financial condition and the low reputation in which some stock brokerage firms were held. He also notes that an unsuccessful lawsuit against the firm during this period resulted in the loss of clients because of the suggestion that the firm had failed in its duties [Cowperthwaite, 1986, p. 4]. **There was a need to manage the business risk faced by the audit firm and to protect the audit firm's reputation.**

A methodological note is in order at this point. In contemporary tests of the auditor client-portfolio adjustment hypothesis, researchers partition their sample into those clients that are experiencing financial distress and those that are not. This partitioning is based on financial statement accounts. Two problems prevent this approach in this paper. First, the required financial disclosures by firms in Canada during this period were limited to the balance sheet. While some firms disclosed income statements, it was not common practice and such statements

were unaudited. Thus, it is impossible to partition firms on the basis of earnings. Second, it is well documented that during this period, a firm experiencing financial downturns might use secret reserves to maintain the appearance of a sound balance sheet and to pay dividends [Bliss, 1987, p. 424].² This practice usually became public knowledge only if the firm ultimately failed. Consequently, it is inadvisable to examine the effect of the financial condition of particular client firms on auditor switching based on published financial statements. In addition, the cause of auditor switches was not disclosed during this period so the competing explanations presented above cannot be differentiated directly by the reason for the switch. The Great Depression, however, affected all sectors of the economy [cf., Urquhart and Buckley, 1965], and, hence, it is reasonable to assume that there were supply-side adjustments across the entire pattern of auditor switches.

Third, the potential for economies of scale was very limited at this time. Auditing during this period was a labor-intensive process; the use of statistical sampling and computer-aided audits did not occur until well after World War II. The main basis for economies of scale was the use of junior staff to undertake audit procedures. This source of leverage was equally available to all but the smallest audit firms and is unlikely to have given any subset of the firms in this sample a comparative advantage. The same can be said of the potential for economies of scope. During this period, the firms' main lines of business were auditing and, after World War I, tax advice [Little, 1964; Jones, 1981]. The contemporary arguments about economies of scope rely on the transfer of information between the audit and consulting functions [Shu, 2000]. Although management consulting practice can be dated to the development of scientific management in the early 1900s, it really did not become a significant business until after World War II [Mellett, 1988].

Fourth, it is possible that auditor switching was related to the size and reputation of audit firms. The reputation of the audit firm, or the quality of the audit performed, has frequently been inferred by its dominance of the market [Davidson and Neu, 1993]. The large audit firms (the Big-Eight, Six, or Five depending on the time period of the study) are usually regarded

²Other techniques included misreporting loans as equity [e.g., in the railroad industry, Thomson, 1938] and using alternative valuation bases to avoid write-downs on securities [e.g., in the financial services sector, Bliss, 1988, pp. 416-424].

as being equal in quality and differentiated from smaller audit firms [Francis and Simon, 1987; Beatty, 1993]. This assumption has been validated by showing that these firms are paid a premium for their services in competitive markets [Francis, 1984; Bandyopadhyay and Kao, 2001].

Francis and Simon [1987] explicitly test for and do not find a price premium for second-tier (“national”) audit firms in their sample. Their work suggests that the contemporary reputation effect in auditing is limited to the “brand name,” international accounting firms. Contrary to this, Krishnan and Schauer [2000] find that audit quality, measured as compliance with GAAP among non-profit organizations, is also related to the size of firm among non-Big-Six firms. DeFond et al. [2000] find both discount and premium pricing among specialist audit firms. These results suggest that reputation/quality may be reflected by the large international audit firms but that size may also affect the perceived and/or actual quality of audits beyond this group of firms.

In Canada during this period, both international and Canadian firms held positions as market leaders while some of the international firms that dominate other markets were minor suppliers in this market (e.g., Deloitte, Ernst) [Matthews et al., 1998, pp. 46-47 for a ranking of U.K. firms; McKee and Garner, 1992, p. 14 for a ranking of U.S. firms during this period]. In this study, the six largest firms include three Canadian firms and three “international” firms, originating in either the U.K. or the U.S. These firms are at least 20% larger than their closest rivals. This situation allows us to observe the effects of size, quality defined by local market share, and international reputation defined by membership in the set of dominant international firms independently.

Overall, the audit market environment at this time suggests that auditor switching by clients may have been related to the reputation/quality auditors or by a desire to lower the cost of their audit through the use of larger auditors. Simultaneously, audit firms were concerned about the effect of client failure on their reputations and the stability of their income streams. These factors are assumed to affect the entire period but to have different weights in the pre-Depression versus Depression periods as discussed below. There will also be auditor switches for other reasons such as price and opinion shopping, death and retirement of auditor partners, etc. These factors are assumed to be randomly distributed across time and are unlikely to be systematically related to the occurrence of the Great Depression.

These factors, however, may be systematically related to the size of the audit firm and, hence, would explain the consistently higher rate of switches among small audit firms.

RESEARCH QUESTIONS

The literature suggests that the market for audits fundamentally changed after the Great Depression due to a greater emphasis on the earnings capacity of the firm and greater reliance on audited financial statements as the indicator of that capacity. This shift increased the importance of auditor reputation to clients. The Depression also resulted in a sudden, but temporary, shift in the risk profile of many clients, providing incentives for auditors to realign their portfolios of clients to manage their business risk. Since there is a discontinuity in the nature of the demand for and supply of audits, we hypothesize that the distribution of clients over categories of auditor will be affected. Based on the contemporary literature on auditor switching, we expect that the pattern of auditor switches will be related to the local market share (size) and/or international status/reputation of the audit firms involved in the switches. The theoretical literature and contemporary evidence suggest that prior to the Depression, the pattern of auditor switching should favor large international firms. The auditor switching literature, however, does not provide a theoretical basis for predicting the direction of the change in auditor switching behavior during the Depression.

Given the discussion above, we test a non-directional hypothesis about the change in the pattern of auditor switches during the Depression (in alternative form):

- H1 The pattern of auditor switching among categories of audit firms in Canada will differ during the Great Depression compared with the pre-Depression period.

In addition to testing this hypothesis, we explore the pattern of auditor switches for evidence of consistencies in the average flow of clients among categories of auditors under different circumstances from which can be inferred the relative reputation of large international and Canadian audit firms (and others) during this period.

Data: The paper is based on financial statements published in *The Annual Financial Review, Canadian* [Briggs and Houston]

at five-year intervals from 1906 to 1941.³ The *Review* was published between 1902 and 1941, when it ceased publication. It presented a summary of the annual reports of major Canadian firms through this time period. The summary included the main financial statement information and the names of key officers. It did not include the auditors' certificate and, prior to 1906, did not disclose the name of the auditor, if any.⁴ This series has been used as a source of information about Canadian financial reporting practices in the absence of archives of early Canadian annual reports [Murphy, 1988; Richardson, 2001].

In order to be included in the sample, financial statements for each company were required for at least two periods along with the reported name of the auditor. These criteria yielded 1,836 financial statements from 492 firms. In order to observe auditor changes or continuity, the first observation from each series (492 financial statements) is dropped. The sample generates 1,344 temporally ordered pairs of financial statements that include 310 cases where clients switched auditors. Switches involved 195 client firms with 1.59 as the mean number of switches per firm and a standard deviation of 0.9. The data were divided into two sets using 1930 as the dividing line.⁵ This resulted in 648 financial statements from 383 firms for the pre-Depression period, including 186 auditor changes involving 133 firms, and 696 financial statements from 418 firms for the Depression period, including 124 auditor changes involving 103 firms.⁶ A supplementary analysis, described below, focuses on those 167 firms that appeared in both periods.

To facilitate analysis, the audit firms were divided into three categories based on their market share throughout the entire period and their country of origin based on the method used in Richardson [2001]. The market is concentrated with the six largest firms accounting for 45% of all audits. Further, there is a discrete break between the sixth largest and seventh largest firm

³The firms used represent those cases where there were (1) at least two financial statements available and (2) the auditor was listed. A total of 3,661 financial statements were included in the source material.

⁴The disclosure of the auditor in this series coincides with debates leading to the statutory requirement for audited balance sheets added to the Ontario Companies Act in 1907.

⁵The Great Depression is usually dated from the stock market crash in October 1929. The first financial statements impacted by the Depression would have appeared in 1930.

⁶Some firms appear in both periods so the number of firms in the sub-periods does not equal the overall number of firms.

(the sixth largest is almost 20% larger than the seventh largest) so that it is reasonable to treat these six firms as a distinct group. The largest firms include three Canadian firms (Clarkson, Ross, and Riddell) and three international firms (Price Waterhouse, Touche, and Peat Marwick). These subgroups are identified as the Canadian Big-3 and the International Big-3 in the analyses. The remaining firms are referenced to as "Other."⁷

For each financial statement pair, we identified in the database the categories of the initial auditor and the auditor of the subsequent set of financial statements. For the subsequent auditor, an additional category of "no change" was added to allow us to examine patterns of continuity as well as patterns of switches in the data. We also separated the financial statements into two categories based on the year-end as being in either the pre-Depression (before 1930) or Depression (1930 and after). The data are thus captured in a 3x4x2 (initial auditor * subsequent auditor * time period) contingency table.

Analyses: To explore the distribution of observations among the cells in the matrix described above, we specify the following saturated model:

$$\log m_{isd} = \mu + \lambda^I + \lambda^S + \lambda^D + \lambda^{IS} + \lambda^{ID} + \lambda^{SD} + \lambda^{ISD}$$

Where:

- m = cell frequency for a given combination of I, S, and D (indexed by i , s , and d)
- μ = the logarithm of the mean cell frequency across all conditions
- λ = a parameter to be estimated (the increase/decrease in cell frequency due to I, S, D and their interactions)
- I = auditor category in the initial period
- S = auditor category in the subsequent period
- D = the time period (either Depression or pre-Depression time period)

The model was estimated using hierarchical log linear analysis. This technique is appropriate for categorical data as it requires no assumptions about the distribution of variables and does not require a specification of the direction of relationships. Given H1, we use this model to test for a significant three-way interaction (I*S*D); i.e., does the pattern of switches between

⁷The original coding separated "Other Canadian" and "Other International" depending on their country of origin. Due to the small numbers of clients of "Other International" in the data, these two categories were combined for analysis.

categories of auditors change between the pre-Depression and Depression periods? The results are shown in Table 1. Based on a likelihood ratio chi-square, we observe a significant loss of categorization ability if the three-way interaction is dropped from the model (LR Chi-square = 18.6, $p < 0.05$). From this result, we conclude that H1 is supported.

TABLE 1**Analysis of Patterns of Auditor Continuity and Switching**

$$\text{Model: } \log m_{isd} = \mu + \lambda^I + \lambda^S + \lambda^D + \lambda^{IS} + \lambda^{ID} + \lambda^{SD} + \lambda^{ISD}$$

Where:

- μ = the logarithm of the mean cell frequency across all conditions
- λ = a parameter
- m = cell frequency for a given combination of I, S and D (indexed by i, s, and d)
- I = auditor category in the initial period (International Big-3, Canadian Big-3, and Other)
- S = the auditor category in the subsequent period (no change, International Big-3, Canadian Big-3, and Other)
- D = the time period (either Depression or pre-Depression time period)

H₁: the pattern of auditor switching among categories of audit firms in Canada will differ during the Great Depression compared with the pre-depression period (the three-way interaction between I, S, and D is not zero)

Tests that K-way and higher order effects are zero (n=1,344).

K Model	DF	L.R. Chi-square	Probability
$3 \log m_{isd} = \mu + \lambda^I + \lambda^S + \lambda^D + \lambda^{IS} + \lambda^{ID} + \lambda^{SD}$	6	18.582	.0049
$2 \log m_{isd} = \mu + \lambda^I + \lambda^S + \lambda^D$	17	163.294	.0000
$1 \log m_{isd} = \mu$	23	2,160.622	.0000

Tests of partial associations

Effect Name	DF	Partial Chi-square	Probability
Initial auditor*Time period λ^{ID}	6	97.936	.0000
Initial auditor*Subsequent auditor λ^{IS}	2	11.958	.0025
Subsequent auditor*Time period λ^{SD}	3	17.301	.0006
Initial auditor λ^I	2	263.184	.0000
Subsequent auditor λ^S	3	1,732.429	.0000
Time period λ^D	1	1.715	.1904

The results also show that the main effects, with the exception of "D," and the two-way interactions are statistically significant. Although these results are not of direct relevance to

the hypothesis, they are discussed here for completeness. The lack of significance of "D" (the time period) simply means there is no significant difference in the number of observations in the pre-Depression and Depression periods. The significant main effects on "I" (the initial auditor) and "S" (the subsequent auditor) means that clients were not evenly distributed across categories of auditors. The significant two-way interactions mean that (a) auditor switching changed the distribution of clients across categories of auditors over the entire period (I*S), (b) the distribution of clients across categories of initial auditors differed between time periods (I*D), and (c) the distribution of clients across categories of subsequent auditors differed between time periods (S*D). The significant three-way interaction, noted above, controls for all of these effects.

Table 2 provides a tabular summary of the data. Panel A shows the pattern of continuity and auditor switches among classes of audit firms during the pre-Depression period. This panel shows that there was less client turnover among the large firms than smaller firms during this period and that the international audit firms had the lowest rate of turnover. The lower section of Panel A provides the distribution of switches among categories of auditors during the pre-Depression period. Consistent with contemporary studies, the large international firms were gaining clients through switches (e.g., 3.2% of switches were away from the Big-3 international firms, but 18.8% of switches were to Big-3 International firms from other categories of auditors). Similarly, the Big-3 Canadian firms were gaining clients through switches (11.8% vs. 12.9%). The small firms were, on average, losing clients through switches during this period (84.9% vs. 68.3%).⁸

Panel B of Table 2 provides the same data for the Depression period. Two changes are evident; first, there is significantly⁹ less turnover among small audit firm clients although total turnover has increased. Second, the direction of switches among auditor categories has changed. The Big-3 international firms were, on average, losing clients through switches during the Depression

⁸Some changes in auditor from one class to another may have been associated with mergers between accounting firms. We assume that these represent choice points for the auditor and client about whether or not to change categories of auditor and are, in principle, no different than any other auditor switching event.

⁹The significance of individual cells is based on a test of the Pearson residuals comparing the observed data and a model assuming independence of the three factors used in the log linear model [Friendly, 1994]. All references to significant results are based on a $p < 0.05$.

TABLE 2
Auditor Continuity and Switches

Panel A: Auditor Continuity and Switches during the Pre-Depression Period

Pre-Depression Sample		Auditor in Subsequent Period				Total
		No Change	International Big-3	Canadian Big-3	Other	
		Percentage within Initial Auditor				
Initial Auditor	International Big-3	95.6%	1.5%	0.7%	2.2%	100%
	Canadian Big-3	81.2%	6.8%	2.6%	9.4%	100%
	Other	59.9%	6.3%	5.1%	28.7%	100%
	Full Sample	71.3%	5.4%	3.7%	19.6%	N = 648
			Percentage of Auditor Switches			% Client Losses
Initial Auditor	International Big-3		1.1%	0.5%	1.6%	3.2%
	Canadian Big-3		4.3%	1.6%	5.9%	11.8%
	Other		13.4%	10.8%	61.1%	84.9%
	% Client Gains		18.8%	12.9%	68.3%	N = 186

Panel B: Auditor Continuity and Switches during the Depression

Depression Sample		Auditor in Subsequent Period				Total
		No Change	International Big-3	Canadian Big-3	Other	
		Percentage within Initial Auditor				
Initial Auditor	International Big-3	89.8%	1.9%	3.9%	4.4%	100%
	Canadian Big-3	84.8%	2.6%	0.7%	11.9%	100%
	Other	76.4%	3.5%	5.0%	15.02%	100%
	% of Sample	82.2%	2.9%	3.7%	11.2%	N = 696
			Percentage of Auditor Switches			% Client Losses
Initial Auditor	International Big-3		3.2%	6.5%	7.3%	16.9%
	Canadian Big-3		3.2%	0.8%	14.5%	18.6%
	Other		9.7%	14.7%	41.1%	64.5%
	% Client Gains		16.1%	21.0%	62.9%	N = 124

Panel C: Changes in the Pattern of Auditor Switches
(Depression – Pre-Depression Periods)

		Changes in the Percentage of Auditor Switches (Depression – Pre-depression)			
Initial Auditor	International Big-3		2.2%	5.9%	5.6%
	Canadian Big-3		-1.1%	-0.8%	8.6%
	Other		-3.8%	3.0%	-19.6%

while small audit firms were less likely to suffer clients switching. Panel C of Table 2 provides a summary of the changes.

Of particular significance are the cells above the diagonal in the matrix in Panel C of Table 2. These cells capture the change in the flow of clients among categories of audit firms during the Depression. All these changes are positive and statistically significant indicating that during the Depression, there was an increase in switches from International Big-3 firms to the Big-3 Canadian firms and "Other" firms (changes of 5.9% and 5.6% respectively) and from Canadian Big-3 firms to "Others" (a change of 8.6%) when compared to the pre-Depression period.

The second analysis, reported below, uses those firms in the data base for which at least one financial statement is available both before and during the Depression. The additional restrictions reduce the sample size and hence the power of the tests, but this subset of the data allows each firm to act as its own control to remove possible effects due to changes in industry composition between the two periods, possible survivorship bias, and other factors associated with the change in client populations. This sample includes 167 firms generating 779 temporally ordered pairs of financial statements. There are 189 auditor switches among this group, 118 from the pre-Depression period involving 80 firms (based on 444 pairs of financial statements) and 71 from the post-1930 period involving 54 firms (based on 331 pairs of financial statements).

The hierarchical log linear analysis results for these data are consistent with those reported above. There is a significant three-way interaction effect (LR Chi-square 12.1, d.f.=6, $p < 0.06$, $N=779$) indicating that the pattern of auditor switches changed between the pre-Depression and Depression periods. The pattern of auditor switches in this sample is also consistent with the results from the full sample described above. In particular also, the bottom panel of Table 3 shows that the changes in percentage of switches above the diagonal are again all positive, indicating an increased flow of clients from Big-3 International firms to Big-3 Canadian firms and smaller firms during the Depression.

DISCUSSION

The data provide evidence that there was a statistically significant change in the pattern of auditor switching during the Depression compared with the pre-Depression period in Canada. In the pre-Depression period, as well as for the entire

TABLE 3
Auditor Continuity and Switches
(Firms in Both the Pre-Depression
and Depression Samples)

Panel A: Auditor Continuity and Switches during the Pre-Depression Period

Pre-Depression Sample		Auditor in Subsequent Period				Total
		No Change	International Big-3	Canadian Big-3	Other	
		Percentage within Initial Auditor				
Initial Auditor	International Big-3	95.1%	1.0%	1.0%	2.9%	100%
	Canadian Big-3	85.7%	6.5%	0%	7.8%	100%
	Other	61.5%	5.7%	6.4%	26.4%	100%
	% of Sample	73.4%	4.7%	4.1%	17.8%	N = 444
		Percentage of Auditor Switches				% Client Losses
Initial Auditor	International Big-3		0.8%	0.8%	2.5%	4.3%
	Canadian Big-3		4.2%	0%	5.1%	9.3%
	Other		12.7%	14.4%	59.3%	86.4%
	% Client Gains		19.2%	14.6%	66.2%	N = 118

Panel B: Auditor Continuity and Switches during the Depression

Depression Sample		Auditor in Subsequent Period				Total
		No Change	International Big-3	Canadian Big-3	Other	
		Percentage within Initial Auditor				
Initial Auditor	International Big-3	89.2%	2.9%	4.9%	2.9%	100%
	Canadian Big-3	79.0%	3.2%	1.6%	16.2%	100%
	Other	73.0%	2.2%	5.4%	19.5%	100%
	% of Sample	78.6%	2.7%	4.8%	13.9%	N = 335
		Percentage of Auditor Switches				% Client Losses
Initial Auditor	International Big-3		4.2%	7.0%	4.2%	15.4%
	Canadian Big-3		2.8%	1.4%	14.1%	18.3%
	Other		5.6%	14.1%	46.5%	66.2%
	% Client Gains		12.7%	22.5%	64.8%	N = 71

Panel C: Changes in the Pattern of Auditor Switches
 (Depression – Pre-Depression Periods)

		Changes in the Percentage of Auditor Switches (Depression – Pre-depression)			
Initial Auditor	International Big-3		3.4%	6.2%	1.7%
	Canadian Big-3		-1.4%	14.0%	9.0%
	Other		-7.1%	0.3%	-12.8%

sample, including both period observations, we see the pattern of auditor switching that is identified in contemporary studies. Large firms, particularly large international firms, on average gain clients due to auditor switches. Furthermore, there were significantly more switches from large Canadian firms to large international firms during this period than vice versa (4.3% versus 0.5% of switches) and significantly more switches from "Others" to the large firms than vice versa (24.2% versus 7.5% of switches combining the two large-firm categories). This pattern of switches supports the inference that the large international audit firms were preferred, on average, to Canadian audit firms by those clients who switched auditors. Also, large audit firms were generally preferred to small audit firms by those clients who switched auditors. The models reviewed above suggest that this could occur if the large international firms had a better reputation than large Canadian firms and large Canadian firms had a better reputation than smaller firms ("Others").

In the Depression period, the pattern of auditor switches is reversed for the large international firms. During this period, large international firms, on average, lost more clients to large Canadian firms than they gained due to switches (6.5% versus 3.2%) and lost clients overall due to auditor switches. This does not imply that the large international firms were contracting during this period since growth can also occur through the growth of existing clients or through new client firms entering the market. The large Canadian firms gained clients, on average, during this period while the small firms lost clients due to switches but at a significantly lower rate than during the pre-Depression period.

If the relative reputation of audit firms remained the same throughout this time period, then this reversal of the net flow of clients may be explained by the effect of the Great Depression on the relationship between clients and audit firms. The change in the pattern of auditor switching over the period examined is consistent with the following explanation. Prior to the Depression, the expanding capital markets created competition for funds, and large audit firms benefited by being seen as increasing the quality and credibility to financial statements compared with small firms. During the Depression, while this was undoubtedly still an issue, audit firms were adjusting their portfolio of clients and/or refusing certain new clients to manage their business risk. This would explain a shift from large international firms to large Canadian firms if the Canadian firms had better knowledge of local conditions and, hence, could better manage

the business risk of some clients that the large international firms felt were too risky. This aggregate result is consistent with Cowperthwaite's [1986, p. 22] observation that two of the Big-3 International firms (Peat Marwick and Price Waterhouse) refused to audit stockbrokers during the Depression. For this class of clients at least, the international firms were withdrawing their services because of increased business and reputation risks.

Alternative Explanations: There are at least three possible counter explanations to the interpretation offered here for the observed pattern of auditor switching. First, it may be possible that the Depression encouraged client firms to become more price sensitive in their selection of audit firms (i.e., changes in the elasticity of demand). Second, it may be the case that the Depression resulted in the downsizing of client firms such that their needs were now better met by using the services of smaller audit firms. Finally, the pattern of switches may reflect changes in the pattern of mergers among audit firms over this period. Each of these alternatives is discussed below.

The first alternative concerns possible price effects during the Depression. Unfortunately, no data are available concerning the pricing of audit services during this period. Theoretically, however, the shift of clients among auditors due to Depression-induced price competition is unlikely. Price competition may have already affected the distribution of clients, but no new effects are anticipated due to the Depression. First, if the relative prices of audits from different categories of audit firms remain constant, then no shifts in demand should occur. There is no *a priori* reason to assume that the price deflation during the Depression should impact all professional firms equally. In fact, if auditors with better reputations are earning higher than average returns, then presumably they are better able to meet price competition if this becomes a factor. Second, the demand for professional services has been found to be relatively income inelastic [e.g., less than 1, cf., Houthakker and Taylor, 1970]. In other words, the demand for a certain level of audit quality may be determined by extrinsic factors such as regulatory and stakeholder requirements and is less affected by the income available to the firm to purchase these services.

The second alternative explanation concerns possible changes in the size of clients during the Depression. The possibility of changes in the demographic composition of clients has been addressed partially through the research design. Sample 2 uses firms as their own control for both periods. This appears to have

been a successful control for size. The firms that switched auditors do not differ significantly in reported total assets ($p=0.54$). The firms that did not switch auditors groups also do not differ significantly in terms of reported assets ($p=0.86$). Furthermore, the firms that switched auditors did not differ significantly from those that did not switch auditors in either the pre-Depression ($p=0.53$) or Depression groups ($p=0.80$). Changes in client demographics are unlikely to explain the changing pattern of auditor switches.

Finally, the pattern observed could reflect changes in the pattern of audit firm mergers specifically if the larger firms were engaged in more mergers prior to the Depression than afterwards and client firms continued with the merged firm after the merger, thus creating the appearance of auditor switching to larger firms. We have already argued that the client's choice of an auditor and the merged firm's decision to retain a client are no different, in principle, during a merger than at other times. Unfortunately, there is little data on the pattern of audit firm mergers in Canada during this period so this alternative cannot be ruled out directly. One counter indicator is Collard [1983] who provides a list of mergers affecting both the Ross and Touche audit firms in Canada. Only one merger is reported during the period covered in this study, occurring in 1919. In terms of the data analyzed here, the number of audit firms represented in the data by year does not change significantly between the pre-Depression and Depression periods (pre-Depression, average = 91.3 accounting firms, s.d. = 9.6; Depression, average = 86, s.d. = 8, $p<0.5$). It appears unlikely that this effect could explain the results.

CONCLUSION

This paper uses the Great Depression as a setting to explore the dynamics of the market for audit services in Canada in the face of an exogenous shock to normal patterns of auditor switching. The theoretical literature suggested two possible associations between the Depression and patterns of auditor switches. First, it is possible that the increased importance of financial statement quality and credibility during the Depression could increase the association between the reputation and size of audit firm and auditor switches, reflected in a higher proportion of auditor switches from small audit firms to large firms and from Canadian audit firms to international audit firms. Second, it is possible that the changes in the risk profile of audit

clients during the Depression could create incentives for auditors to realign their portfolios to maintain profitability, resulting in more switches from large, better reputation firms to smaller firms or firms with a greater local knowledge of business risks.

The data support the hypothesis that there was a change in the pattern of auditor switches during the Depression compared with the pre-Depression period. In the Depression period (1930-1941), small Canadian audit firms were less likely to lose clients to the international firms, and auditor switches were more likely to result in clients moving to smaller and lower-status auditors, reflected in an increase in switches from the International Big-3 to the Canadian Big-3 and in an increase in switches from the Canadian Big-3 to "Other" Canadian firms. These results stand in marked contrast with contemporary accounting switching studies that show a consistent flow of clients to the large international firms. The data do not allow for tests of causal models, but based on current theories of auditor switching, one explanation is that during the Depression the large international firms withdrew from or denied services to risky client firms, allowing firms with higher risk tolerances or better knowledge of the Canadian market to benefit. This aggregate result is consistent with Cowperthwaite's [1986, p. 22] observation that two of the Big-3 International firms (Peat Marwick and Price Waterhouse) refused to audit stockbrokers during the Depression. Several alternative explanations were also ruled out on theoretical or empirical grounds, but the cause of the shift in the pattern of auditor switches in this period bears further investigation.

The period under consideration allows size and international reputation/status to be associated with auditor switching decisions independently. The results show that in this setting both factors are related to switching behavior, implying that client firms could differentiate between Big-3 International firms, Big-3 Canadian firms, and "Others." In the pre-Depression period, both large Canadian firms and international firms benefited from the movement of clients to larger firms. This suggests that clients were able to differentiate between the large and small Canadian firms. In the Depression period, the realignment of clients also provides evidence that clients differentiated the international firms from larger and smaller Canadian firms. There is an apparent flow of clients down this chain of firms and an increase in the flow of clients directly from the International Big-3 to the smaller Canadian firms. Taken together, the pattern of auditor switches suggests that, even in this early stage of the development of the Canadian audit market, international repu-

tation was more important than size in auditor choice decisions but that size, reflected in local market share, was a factor in such decisions.

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