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THE CANADIAN AUDIT MARKET IN THE FIRST HALF OF THE TWENTIETH CENTURY

Abstract: This paper explores the structure of the Canadian audit market between 1901 and 1941 based on a sample of 3661 financial statements from 956 firms. Two aspects of the market are examined: first, the overall degree of market concentration, and second, the existence of market segmentation. In addition, a specific concern of the paper is to analyse competition between domestic accounting firms and the international accounting firms leading to the merger of major independent Canadian firms with international accounting firm networks after World War Two. The data show a pattern of increasing concentration during the period among a small set of domestic and international firms. The data identify both a national market and a series of regional markets for audit services. There is also evidence of market segmentation by industry and stock exchange listing. Overall, the evidence suggests that the early Canadian audit market was competitive but fragmented into a series of niche markets. Domestic firms were able to compete with the international firms but the market was becoming increasingly concentrated.

INTRODUCTION

This paper explores the structure of the Canadian audit market in the first half of the 20th century. This is a key period for the development of the audit market and audit firms in Canada. The first full time public accounting firms appeared in

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the mid-1800s but were initially concerned primarily with bankruptcy and receivership work. The change in focus of the accounting firms from bankruptcy to attest work began in the 1900s based on the introduction of statutory audits. The requirement of audits for public companies was written into the Ontario Companies Act of 1907 and the Canada Companies Act of 1917 (see Murphy [1988] for a discussion of the evolution of these requirements). The banks also fell under statutory audit requirements. After a series of bank failures [Naylor, 1975a], the Bank Act was revised in 1911 to require shareholder audits and again in 1913 to require external audits. After a bank failure in 1923, the Bank Act was further revised to require dual auditors, auditor rotations and to prohibit a bank auditor from providing other services to banks [Richardson and Lew, 1992]. By the mid-1920s the Canadian auditing market had thus taken its current institutional form.

Although a substantial body of work has documented and analysed the emergence and development of financial reporting and professional associations in Canada (see Murphy [1993] for an anthology of this literature), there have been no studies of the development of the Canadian audit market and the firms that served this market. The absence of such studies is unfortunate. An understanding of the structure of the early audit market would be useful, for example, in gauging the degree of change in audit concentration brought about by the recurrent waves of mergers in the industry. It would also allow an assessment of the impact of the liberalization of the trade in services (e.g., under the North American Free Trade Agreement and the Uruguay Round of GATT negotiations) on the fortunes of domestic firms. More generally, at the moment, there is no baseline for assessing changes in the market for audit services.

This paper addresses this gap in the literature focussing on the crucial first half of the 20th century in which the audit market began to assume its present form. The dimensions on which the audit market will be described have been informed by the literature on the relationship between industry structure and economic performance [Scherer and Ross, 1990; Baumol, Panzar and Willig, 1988; Cubbin, 1988]. In brief, this literature is concerned with the effect on social welfare of deviations in industry structure from the ideal of perfect competition. Although there are other models of industry structure that are consistent with competitive behaviour, the classical model of perfect competition is the most stringent and is used here as a benchmark. The key issues are thus the extent of market concentration among suppliers and market segmentation. Each of these dimensions reflects the ability of firms to extract monopoly rents in the market (i.e., to restrict supply and/or increase prices above their competitive baseline) or to engage in strategic behaviour with respect to other firms in the market.

Since the existence of monopoly rents is unobservable, this paper follows the tradition in the industry structure and performance literature by examining key structural attributes of the audit market and using these attributes to infer potential performance issues. The paper addresses three research questions: first, who audited Canadian public companies during this period and how concentrated was the supply of audit services; and, second, how was the audit market segmented among accounting firms? These research questions are overlaid with a third, more general, question reflecting a concern with the openness of the Canadian market within the global economy: how did domestic accounting firms fare in competition with foreign accounting firms?

The first research question seeks to document the distribution of audit services among different suppliers. In a perfectly competitive market all suppliers implement the same production function and are price takers within the market. In this setting the marketplace will be composed of many firms of similar size. The first question is thus concerned with the possibility that one or more firms have achieved a sufficient scale of operations that their actions can affect market prices or supply. The empirical literature has found a positive relationship between industry concentration and profits [Cubbin, 1988, p. 52]. The literature suggests that in concentrated industries prices may rise between 10 and 20% above their level in competitive markets.

The second research question looks at market segmentation. If the demand for audit services can be broken down into a series of niche markets, then it is possible that a firm may be able to achieve monopoly pricing with respect to a particular niche. Geographic constraints on practice [Chan, 1995] and specialized knowledge required for particular industries or capital markets [Danos and Eichenseher, 1982] may serve as barriers to entry to particular niches of the market. The existence of market segmentation thus provides evidence of deviation from the ideal of perfect competition. Empirical studies of market segmentation suggest that prices may be increased between four and 34% above competitive levels in such markets [Cubbin, 1988, p. 55].

The third research question examines the effect of competition between domestic and foreign firms on the structure of the Canadian audit market. Canada is a small, open economy. Foreign accounting firms, i.e. those originating in Great Britain and the United States, were present in Canada virtually from the beginning of the market for audit services. These firms grew along side domestic firms and competed for the Canadian audit market. The dynamics of international competition in this market provide insights into the emergence of international accounting firms/networks.

DATA

The paper is based on 3661 financial statements from 956 client firms published in *The Annual Financial Review, Canadian* [Briggs and Houston, eds.] between 1902 and 1941 when it ceased publication.[1] These volumes include financial statements dated between 1901 and 1941. The *Review* presented a summary of the annual reports of the major Canadian firms through this time period. The summary included the main financial statement information and the name of the auditor(s) and other key officers. It did not include the auditors' certificate. This series has been used as a source of information about Canadian financial reporting practices [Murphy, 1988] in the absence of archives of early Canadian annual reports. This data source has not been used however to explore the early Canadian audit market.

Although this is a rich and unique source of data on early Canadian companies' financial statements, the database has limitations. The financial statements included in the *Review* reflect the willingness of companies to provide data in an era of voluntary disclosure and the editors' choices of which firms to include to maximize sales of their publication. While these selection criteria ensure that the most significant companies in Canada through this time period are included, there may be biases in the coverage. It is likely, for example, that the compa-

[1]The data used are all financial statements published in Volumes 2, 6, 9, 11, 13, 20, 21, 22, 26, 31, 36 and 41. Each volume includes financial statements dated up to three years prior to the year of publication. The volumes generate approximately 500 financial statements in each of the periods used for analysis (see Tables 2 and 3). The sample size was limited by lack of availability of the complete series and the cost of transcribing the volumes into machine-readable form.

nies included are the larger companies in Canada, with widely dispersed shareholdings or closely held-companies with significant impacts on competitors. Since this is not a random sample from a universe of Canadian firms and there is no reliable data on the population of firms in Canada through this period, no attempt will be made to generalize from the sample.[2]

ANALYSIS

Among the 3661 financial statements reviewed, 2823 included a listing of the auditor (or auditors in the case of dual auditors). Most of those financial statements where no auditor is listed are dated prior to the introduction of a mandatory audit requirement in the Ontario Companies Act of 1907, the Bank Act of 1913 and the federal Companies Act of 1917. In order to develop a profile of the market during the period under examination, the audit firms that represented continuations of partnerships and named individual members of firms were grouped together. For example, the Clarkson firm is taken to include the firms named Clarkson Gordon Dilworth, Clarkson Gordon Dilworth & Nash, Clarkson Gordon Dilworth Guilfoyle & Nash, Clarkson & Cross, Clarkson Cross & Helliwell, and the individuals ERC Clarkson and GT Clarkson[3] (among others). The number of financial statements audited by the firms was then summed. Table 1 provides a listing of the major audit firms in Canada between 1901 and 1941. This Table also lists the firms and individuals grouped under a common firm name for analysis. It should be noted that even with this consolidation of the audit firms in the sample, there are 316 separate firms/auditors listed in the database.

The data in Table 1 provides evidence of market concentration among audit firms. More formally, the degree of concentration discussed below will focus on the concentration ratio,

[2] Statistics Canada Historical Statistics of Canada Series R783-794 (available via the Internet) provides a listing of the number of companies and the value of their production at five-year increments beginning in 1900. The number of companies in the sample by year correlates significantly with this series (r=0.95 all companies, r=0.92 companies over $1 million in value of production). Partial correlations controlling for year were not significant. These results suggest that the sample size for each year (i.e., the number of companies included in each volume) is proportional to the growth in the economy but that the sample may not be representative of the specific firms that constitute the economy during this period.

[3] Most early bank audits, for example, were attributed to individuals rather than accounting firms.

TABLE 1

Major Canadian Auditors, 1901-1941 (top 31 firms)

Rank	Name of Audit Firm	Other Firms Included	Number of Financial Statements in the Sample Audited
1	Price Waterhouse	F S Price and N E Waterhouse; Price Waterhouse & Co; Price Waterhouse & Co, CA; Price Waterhouse & Co, Toronto.	392
2	Clarkson	Clarkson & Cross; Clarkson, McDonald, Currie & Co; Clarkson, Cross & Helliwell; Clarkson, Cross & Menzies; Clarkson, Cross & Helliwell, Vancouver; Clarkson, Gordon & Dilworth Clarkson, Gordon & Dilworth, CA; Clarkson, Gordon, Dilworth and Nash; Clarkson, Gordon, Dilworth and Nash, CA; Clarkson, Gordon, Dilworth, Guilfoyle and Nash, CA; Clarkson, Gordon, Dilworth, Guilfoyle and Nash; Clarkson, McDonald, Curie and Co, CA; Clarkson, McDonald, Currie and Co; E R C Clarkson, FCA; G T Clarkson; G T Clarkson, CA; G T Clarkson, FCA; R J Dilworth, of Clarkson, Gordon & Dilworth.	266
3	Ross	A F C Ross; A F C Ross, CA; A F C Ross, CA, FCA; J G Ross; A F C Ross; J W Ross; James G Ross; James G Ross, CA; Jas G Ross, CA; P S Ross; P S Ross & Sons, CA; P S Ross & Sons; P S Ross and Sons, CA; G G Dustan, CA; P S Ross & Son; Peat, Marwick, Mitchell and Co.	203
4	Mitchell	Marwick, Mitchell & Co; Marwick, Mitchell & Co, NY; Marwick, Mitchell, Peat & Co; Marwick, Mitchell, Peat and Co, CA; Peat, Marwick & Mitchell & Co; Peat, Marwick, Mitchell and Co, CA; Peat, Marwick, Mitchell and Co, NY.	184
5	Riddell	Riddell, Stead, Graham & Hutchison; Riddell, Stead, Graham & Hutchison, CA; Riddell, Stead, Hodges, and Winter.	125

Major Canadian Auditors, 1901-1941 (top 31 firms) (continued)

Rank	Name of Audit Firm	Other Firms Included	Number of Financial Statements in the Sample Audited
6	Touche	G A Touche and Co; George A Touche & Co; George A Touche & Co, CA; Touche, Niven and Co; Geo A Touche & Co.	102
7	Edwards	Edwards & Ronald; Edwards, Morgan & Co; Edwards, Morgan & Co, CA; Edwards, Morgan, Clark & Co; Edwards, Ronald & Co; George Edwards, FCA; H Percy Edwards, FCA; George Edwards, FCA; H Percy Edwards, CA; George Edwards; H Percy Edwards.	86
8	Scott	C S Scott; C S Scott and Co; C S Scott and Co, CA; C S Scott, FCA; John Scott, CA; John Scott; John Scott & Co, CA.	84
9	Thorne	Thorne Mulholland & Co; Thorne, Mulholland, Howson & McPherson; Thorne, Mulholland, Howson & McPherson, CA.	71
10	Macintosh	Macintosh & Hyde; Macintosh & Hyde, CA; Macintosh, Cole and Robertson, CA; Macintosh, Robertson and Paterson, CA.	65
11	Deloitte	Deloitte, Plender, Griffiths & Co; Deloitte, Plender, Griffiths and Co, London; Deloitte, Plender, Haskins & Sells.	57
12	Milne	Crawley Milne & Co; Crawley Milne & Co, CA; Milne, Steele and Co; Milne, Steele and Co, CA; Sharp, Milne & Co; Sharp, Milne and Co, CA.	46
13	Creak	Creak, Cushing & Hodgson; Creak, Cushing & Hodgson, CA; G Creak; L Cushing; C Hodgson; George Creak, CA.	45
14	Vigeon	Harry Vigeon, FCA; Frank Vigeon Harry Vigeon, FCA; Frank Vigeon, CA Vigeon & Co Vigeon & Co, CA.	37
15	Young	Ralph E Young; Ralph E Young & Co, CA; Ralph E Young, FCA; Ralph E Young, FCA; G E F Smith, FCA; Ralph E Young & Co, CA; Toronto Ralph E Young, CA; Charles Stiff, CA.	34

Major Canadian Auditors, 1901-1941 (top 31 firms) (continued)

Rank	Name of Audit Firm	Other Firms Included	Number of Financial Statements in the Sample Audited
16	McDonald	George C McDonald & Co, CA; McDonald, Currie & Co, CA; McDonald, Craig and Co; McDonald, Currie & Co, Montreal.	33
17	Barber	Barber & Co; Henry Barber & Co; Henry Barber, Mapp & Mapp; Henry Barber, Mapp & Mapp, CA; Henry Barber, Mapp & Mapp, and etc.	27
18	Barrow	Barrow, Wade, Guthrie & Co; Barrow, Wade, Guthrie & Co, NY; Barrow, Wade, Guthrie and Co, CA.	26
19	Hardy	A J Hardy; James Hardy, FCA.	25
20	Gunn	Gunn, Roberts & Co; Gunn, Roberts and Co, CA.	25
21	Oxley	F H Oxley; F H Oxley and Co; F H Oxley, FCA; Oxley & Johnson; Oxley & Johnson, Halifax.	25
22	Neff	A C Neff & Co; A C Neff and Co, CA; A C Neff, FCA; Neff, Robertson Co, CA; Neff, Robertson and Co; Neff, Robertson and Co, CA; Neff, Robertson and Co.	25
23	Helliwell	Helliwell, Maclachlan & Co; Helliwell, MacIachlan & Co, CA; Helliwell, Moore & Maclachlan, CA; Helliwell, Moore and Maclachlan, Vancouver.	24
24	Welch	H J Welch, CA; Henry J Welch, FCA, Toronto; Lawson, Welch & Campbell; Lawson, Welch & Campbell, CA; Lawson, Welch & Co; Welch, Anderson and Co; Welch, Anderson and Co, CA; Welch, Campbell & Lawless, CA; Welch, Campbell and Lawless; Welch, Campbell, Lawless and Parker CA.	24
25	Piers	Piers, Evans and Co; T L E Piers; T L E Piers, CA.	24
26	Haskins	Deloitte, Plender, Haskins and Sells; Haskins & Sells Haskins & Sells, CA; Haskins & Sells, CPA; Haskins & Sells, NY.	22

Major Canadian Auditors, 1901-1941 (top 31 firms) (continued)

Rank	Name of Audit Firm	Other Firms Included	Number of Financial Statements in the Sample Audited
27	Langley	J P Langley; J P Langley and Co; J P Langley and Co, Toronto; J P Langley, FCA.	22 22
28	Jewell	F G Jewell, FCA; George S Jewell.	21
29	Stiff and Sime	Stiff Bros & Sime, CA.	20
30	Hudsons	Oscar Hudson & Co; Oscar Hudson & Co, CA; Oscar Hudson & Co, Toronto.	20
31	Mcauliffe	McAuliffe, Davis & Hope; McAuliffe, Davis and Hope, CA, London, NY and Barcelona.	20

C_m, where "m" refers to the number of firms used in the calculation. The concentration ratio measures the percentage of the market served by some number of firms (typically 4, 6 or 8 firm concentration ratios are calculated). The concentration ratio has, historically, been used by regulators as a first test of the degree of competitiveness of industries [Miller, 1955] and is still used in Canada as a benchmark [Canada, 1991]. The empirical evidence reviewed by Cubbin [1988] suggests that firms gain monopoly power when the four firm concentration ratio exceeds 60%. In Canada, under the Competition Act, a merger between firms in the same industry may be prevented if the four firm concentration ratio exceeds 65%. The concentration ratio is also the most commonly used empirical measure of concentration. It is the measure used in all of the existing studies of the audit market and so will be used here to allow comparison with those studies.[4]

[4] The United States Department of Justice has adopted the Herfindahl-Hirschman Index as a first test of market concentration. This index is defined as the sum of the squared percentages of market share of all firms in an industry. This index has the advantage of including all of the firms in the industry and is based on economic theory [Kwoka, 1995]. A variation of this approach is to calculate an index based on a set number of firms. The minimum value of the index would be 1/n where n is the number of firms [e.g., Wooton *et al*, 1994].

The concentration ratio can be measured in several ways. Ideally the degree of market concentration should be based on the fees charged to clients. In the absence of such data, proxies such as total sales or total assets of clients are used [Moizer and Turley, 1987]. The institutional environment limits the choice of measures of market share in the period under study. During this period, for example, clients or auditors did not disclose audit fees so this measure could not be used. In addition, the financial disclosures required under Canadian legislation were limited to balance sheets until 1951 [Anderson, 1977, p. 10] so sales and other income statement data was not consistently or reliably reported during this period. In this paper two indicators of market share are used: the number of clients and the value of assets audited.

The number of clients provides a reasonable measure of market share where the clients are similar in size and/or there are large fixed costs associated with the audit. In this sample, the known bias in the sample is towards the inclusion of the larger Canadian firms at the expense of smaller firms. Given this distribution, the number or percentage of clients of an auditor may be a reasonable surrogate for market share. Moizer and Turley [1987] suggest that concentration measures based on number of clients provide a lower bound to the actual level of concentration as this approach makes the implicit and conservative assumption that all clients are charged the same fee.

This concentration measure is supplemented by a measure based on the value of assets of clients audited by the audit firms. This measure assumes that audit fees are proportional to client assets. This assumption may be reasonable when the audit is limited to balance sheet accounts and particularly prior to the advent of statistical sampling that reduced the cost of large audits (i.e., audits based on sampling methods will generate a non-linear relationship between audit fees and the size of the client). Moizer and Turley [1987] suggest that untransformed measures of client size (i.e., using the actual value of assets or sales rather than the logarithm of these variables) may provide an upper boundary to the estimate of market concentration. Taken together, then, the two measures reported provide a range within which the actual concentration of the audit market should fall.[5]

[5] Consistent with this interpretation of these indicators of concentration, the degree of concentration indicated by the number of clients is always lower than the degree of concentration measured by assets audited in this sample.

Over the entire sample period, the six largest firms by the number of financial statements audited in the sample account for 45% of audited financial statements (i.e., Price Waterhouse, 392; Clarkson, 266; Ross, 203; Mitchell, 184; Riddell, 125 and Touche, 102). The largest four firms account for 37% of audited financial statements. Table 2 and 3 track the change in the distribution of financial statements and assets audited among audit firms in the sample over five-year windows. The five-year windows are used to smooth variations due to missing and small sample years. In these Tables the Big-3 international firms (Price Waterhouse, Peat Marwick Mitchell, and Touche) and the Big-3 domestic firms (Clarkson, Ross and Riddell) are compared with the rest of the market combined. The final column provides the six-firm concentration ratio.

Table 2 shows the steady growth in the proportion of financial statements audited by the Canadian Big-3 firms during the period from the turn of the century through the 1920s. The International Big-3 firms dominate the market after 1916, most likely due to Clarkson's withdrawal from banking audits (discussed below). The pattern is somewhat different if assets audited are used as the measure of market shares as in Table 3.

TABLE 2

Percentage of Financial Statements Audited

	Canadian Big-3[1]	International Big-3[2]	Other	No Auditor Listed	Total Number of Financial Statments[3]	Six-Firm Concentration Ratio
	%	%	%	%	#	%
1901-1905	0.00	0.00	0.00	100.00	241	NA
1906-1910	3.60	1.69	16.12	78.59	439	5.29
1911-1915	11.00	10.50	55.15	23.35	501	21.50
1916-1920	14.91	19.45	57.56	8.08	532	34.36
1921-1925	17.16	19.82	58.33	4.69	576	36.98
1926-1930	19.53	24.03	51.94	4.50	422	43.56
1931-1935	22.17	26.02	49.41	2.40	416	48.19
1936-1941	21.56	25.26	52.97	0.21	468	46.82

[1] Clarkson, Ross and Riddell.

[2] Price Waterhouse, Peat Marwick & Mitchell and George Touche.

[3] 66 financial statements were excluded because the year on which the report was based was not given in the source material (although it could be inferred from the year of publication this reduces the risk of misclassification).

TABLE 3

The Market Share (by proportion of assets audited, corrected for dual auditors[1]) of Major Audit Firms in Canada 1901-1941

	Canadian Big-3[2]	International Big-3[3]	Other	No Auditor Listed	Value of Assets Audited	Six-Firm Concentration Ratio
	%	%	%	%	$Billion	%
1901-1905	0.00	0.00	0.00	100.00	$2.5	NA
1906-1910	2.74	9.49	11.24	76.53	$8.1	12.23
1911-1915	17.42	23.47	52.73	6.38	$52.2	40.89
1916-1920	14.52	38.96	40.12	6.42	$23.6	53.48
1921-1925	12.84	41.20	41.72	4.24	$31.4	54.04
1926-1930	15.30	30.92	39.41	14.37	$23.9	46.22
1931-1935	28.22	27.96	37.77	6.04	$23.6	56.18
1936-1941	25.92	35.87	37.53	0.68	$19.9	61.79

[1] Where dual auditors are used, each auditor is credited with half the value of the assets of the audited firm.
[2] Clarkson, Ross and Riddell.
[3] Price Waterhouse, Peat Marwick & Mitchell and George Touche.

The Canadian firms briefly achieved parity in market share of assets in 1935/36 when Clarkson audited the Canadian National Railways (one of Canada's largest firms) for one year. This brief anomaly is discussed below. In general, however, the international firms have dominated the national firms in terms of assets audited since the First World War. By the end of the period the six largest firms accounted for 46.82% of financial statements and 61.79% of assets audited. If these two measures represent the bounds of a confidence interval within which the correct level of concentration lies, then throughout the period the level of concentration was below the threshold usually associated with monopolistic behaviour.

By comparison, Shaw and Archibald [1970], based on 585 Canadian firms with year-ends in 1968 and assets over $500,000 in manufacturing, merchandising, transportation and utilities, reported that the largest four accounting firms audited 73.9% of assets or 41.4% of firms, and the largest six firms audited 82.8% of assets or 56.1% of firms. The ranking of firms in this later period is consistent with the data reported here with Price Waterhouse leading, followed by Clarkson Gordon, Peat Marwick Mitchell, Touche Ross, Thorne Gunn Helliwell & Christensen, and Riddell Stead. The largest changes in the rankings from the pre-World War Two period to 1968 is due to the merger of Ross and Touche and the merger of the Thorne group of firms.

The pattern of auditor concentration discussed above is also consistent with data on the early U.K. audit market assembled by Anderson and Edwards [1997]. Their data for 1886 show that the six largest firms accounted for 24.4% of clients while the largest four firms served 19.8% of clients. Similarly in the USA, Danos and Eichenseher [1986] used Standard and Poor's Registry of Corporations to calculate eight-firm concentration ratios of 45.3% in 1950, 52.8% in 1960, 60.1% in 1970 and 51.3% in 1980. More recent data for the U.S. [Wooton, Tonge and Wolk, 1994] suggest that the six largest firms now account for between 65% and 98% of clients (depending on the population of clients used, e.g. specific stock exchanges) while the four largest firms account for between 49% and 69%. Although the evidence is drawn from different countries, it suggests a continuing pattern of increasing concentration over a 100 year time frame.[6]

Even in this early state of the development of the international firms, it is interesting to note that only three of the six largest audit firms operating in Canada were national firms (Clarkson, Ross and Riddell). The three international firms with a significant presence in the Canadian market were Price Waterhouse, Peat Marwick & Mitchell and George Touche. The presence of the international firms during the development of the Canadian audit market reflects Canada's position as a colony and the earlier development of the audit market in the U.K. The expansion of the U.K. firms into Canada was driven by the flow of capital from the U.K. into North America during the late 1800s. As will be shown below this is particularly noteworthy for certain industries.

Differentiation in the Early Canadian Audit Market: Scherer and Ross [1990, p. 81] note that service industries are typically competitive when viewed on an aggregate level. Looking more closely, however, monopoly power can be created through

[6]Maijor and Von Witteloostuijw [1996] show that this pattern of concentration did not occur in Holland due to regulations on accounting practice. The trend towards concentration appears to be particularly supported by Anglo-Saxon institutional structures.

product differentiation or market segmentation that limits the effective number of alternative suppliers. Three market segments are examined in this section: specialization by industry, geography and stock exchange listing. A market niche will exist if there are barriers to entry to competitors, i.e., the costs to competitors are higher than to the firm dominating that niche [Geroski et al, 1990, p. 10]. The barriers may include specialized knowledge related to specific industries, knowledge of and investment in specific geographic areas, or knowledge of and credibility to specific stock exchanges. It is assumed *a priori* that domestic firms compared with the international firms will have better access to niches based on industry knowledge and geography. International firms, compared with domestic firms, will have better access to niches based on stock exchange listing mainly because of their greater familiarity to distant investors.

(A) Industry Specialization: The clients represented in the sample capture most of the key sectors of the economy (an obvious omission is the family owned firms). The largest client firms based on the value of assets tend to be in the transportation, finance and public utilities (e.g., hydroelectric power) sectors (see Table 4). The railway and banking industries have been particularly important in the development of the Canadian economy [cf. Naylor, 1975a,b]. The characteristics of these two industries and their auditors are considered below.

Canada is a large and sparsely populated country. The railways were used to tie the country together and to mould a national identity [Berton, 1970]. The creation of an intercontinental railway was an explicit condition of the Act of Union that created Canada as a country in 1867. It was thought that an east-west railway in Canada was the best defence against the north-south expansionist ambitions of the U.S. The railways allowed the natural resources of the Canadian west to be exploited providing an economical means of exporting wheat, potash and other resources from the interior to the seaports of British Columbia or the inland waterways of the Great Lakes. The railways also facilitated immigration and homesteading that opened new Canadian territories. The railways were expensive to build and operate, requiring government guarantees of their securities to attract investors. Even with this support however, the railways proved unable to pay their debt charges and shortly after the First World War many were nationalized [Bliss, 1987].

TABLE 4

Major Clients (Top 20 by value of assets) and their Auditors

Firm	Industry	Total Assets (Maximum Value in sample)	Auditor (s) listed between 1901 and 1941
Canadian Pacific Railway	Railway	$11,166,433,527	Price Waterhouse
Canadian National Railways	Railway	$ 9,695,380,979	Clarkson; Touche
Bank of Montreal	Banking	$ 6,328,350,953	Graham; Hutchison; Hodgson; Glendinning; Gowan; McDonald; Riddell
Royal Bank of Canada	Banking	$ 5,814,482,709	Marwick; Mitchell; Ross; Thomson; Shepherd; McClelland; Sr Mitchell; Brodie
Canadian Bank of Commerce	Banking	$ 4,880,368,102	Mitchell; Price Waterhouse; Webb; Dewar; Marwick; Shepherd
Sun Life Assurance Co of Canada	assurance-guarantee	$ 3,090,894,940	Brig. Ross
Royal Trust Co	Trust	$ 2,601,354,134	Hutchison; Paterson; Gowan
Cities Service Co	investment	$ 2,532,955,457	No Auditor Listed
Canadian Northern Railway Co	railway	$ 2,357,389,648	Touche
Bank of Nova Scotia	banking	$ 2,161,327,293	Glendinning; Price Waterhouse; Waterhouse; Mitchell; Riddell
Dominion Textile Co, Ltd	industrial	$ 1,729,428,690	Ross
MacKay Co	telephone	$ 1,657,950,796	Barrow
Brazilian Traction Light and Power Co. Ltd	railway	$ 1,628,799,060	Clarkson
Minneapolis St Paul and Ste Marie Railway Co	railway	$ 1,560,600,985	Mitchell
Union Trust Co Ltd	trust	$ 1,435,663,823	Cumberland; Neff; Niles; Price Waterhouse
National Trust Co Ltd	trust	$ 1,417,880,494	Edwards; Scott; Touche; Geggie; Mackay; Durnford; Webb
Toronto General Trusts Corp	trust	$ 1,416,574,440	Clarkson; Hardy; Spence; Macbeth
Imperial Bank of Canada	banking	$ 1,324,139,893	Clarkson; Dilworth; Mitchell; Macintosh; Price Waterhouse
Canada Life Assurance Co	assurance-guarantee	$ 1,213,499,630	Young
Bank of Toronto	banking	$ 1,118,459,249	Clarkson; Glendinning; McClelland; Shepherd; Price Waterhouse; Mitchell

The railways were largely financed by bonds sold in the London, UK, market [Bothwell *et al*, 1987, p. 178]. In fact the majority of UK funds raised between Confederation (1867) and the First World War were used to finance the construction of Canada's two transcontinental railways [Naylor, 1975a, p. 229]. Not surprisingly, then, the financial statements issued by the railways were audited by U.K. audit firms: the Canadian Northern Railway was audited by George Touche until its nationalization in 1919; the Canadian Pacific Railway (CPR) was audited by Price Waterhouse; the Canadian National Railway (CNR) was also audited by George Touche with the exception of one year, 1935, when the Clarkson firm acted as auditor. This incident deserves special mention, as the CNR is such a large company that this change in auditors has a notable affect on the aggregate data.

The brief incursion of Clarkson into railway audits is not mentioned in the history of the firm [Little, 1964] nor is Touches' brief loss of this client mentioned in that firm's history [Collard, 1983]. In the years immediately after the depression Canada's railways were in dire financial distress and in 1933 the government of the day stepped in to attempt to save the Canadian National Railway. Three trustees who had absolute control replaced the Board of Directors of the CNR.[7] The trustees took office in 1934 and remained until mid-1936. The auditors of the CNR were also directed to report directly to Parliament rather than to management.

In 1934 George Touche acted as auditor (as he had in previous years) and laid before Parliament (and thereby the Canadian public) a report on the capital structure of the CNR over the previous twenty years. The report showed that the CNR was essentially bankrupt but the firm had disguised this by inadequate charges for depreciation and obsolescence, and by treating government infusions of cash as equity rather than debt [Thomson, 1938, p. 684]. This report was apparently not well received by government.

> The general public believes . . . that because part of the content of these reports did not please the government of the day [a Conservative majority government], the auditing services of Messrs. George Touche & Co. were terminated in the year 1935 [Thomson, 1938, footnote 149].

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[7] An Act respecting the CNR and to provide cooperation with the CPR system and other purposes 23-24 George V C.33 1933.

Touche was replaced as auditor by Clarkson for 1935. In October of 1935 a federal election was held. The Conservative Party on dissolution of parliament held 137 seats; the Liberal Party held 88 seats and other groups held 20 seats. After the election the Liberal Party held 171 seats, the Conservative Party 39 seats and others held 35 seats. The new Liberal Government quickly set about undoing the management structure of the CNR put in place by the previous government. A 1936 Act amended the 1933 Act, bringing back a Board of Directors and separate executive team. One of this group's first decisions was to return the audit to Touche; thus, ended the brief engagement of Clarkson as auditor of one of Canada's largest companies.

The financial sector is a crucial one for the auditors given the introduction (after the 1913 and 1923 Bank Act revisions) of mandatory audit requirements for the banks, the two-auditor requirement and rotation of auditors. These statutory requirements provided a large and stable market for audit services that provided a springboard for the growth of the audit firms [Cowperthwaite, 1986, p. 10]. In addition, the banks by the First World War were routinely requiring audited financial statements to use as a basis for commercial lending. It is likely that audit firms that served as bank auditors would be more familiar to bank officers and, therefore, more likely to be recommended to their customers [cf. Shockley and Holt, 1983]. Under Canadian law, the four pillars of finance — banking, trust, insurance and stock brokerage — had to be carried out by separate companies, hence the presence of trust companies and insurance companies among the list of large clients.

The banking industry was founded on a mixture of capital from the U.K. and domestic sources. Many of the first banks drew on U.K. funds and were primarily involved in providing short-term credit to allow farmers to transport their goods to market and merchants to finance their inventories. These banks focused on the large urban centres and on the more populous provinces. In the Prairie Provinces and in smaller centres, merchants and farmers pooled their resources to create banks to serve their needs [Bliss, 1987, Chapter 10; Naylor, 1975a, Chapter 3]. In this sense "the Canadian banking industry was a truncated import from Britain" [Naylor, 1975a, p. 110]. These sources of capital suggest that both domestic and international audit firms would have opportunities in this market.

The banking industry also has a more complex audit market than the transportation industry as a result of statutory requirements. The dual auditor provision introduced in 1923 provided many opportunities for the smaller Canadian firms to gain experience in bank audits and it is common in the sample to see a Canadian firm acting as the junior auditor along side one of the international firms. For example, Price Waterhouse audited the Bank of Nova Scotia for many years with either the Canadian firm of Riddell or Glendinning as the second auditor. By the end of the period, however, Canadian firms were disappearing from bank audits: for example in 1941 the Imperial Bank of Canada, Dominion Bank, Canadian Bank of Commerce and Bank of Nova Scotia were all audited by Peat Marwick Mitchell. The notable exception was the Bank of Montreal (Canada's largest bank) audited by the Canadian audit firms McDonald Currie and Riddell (as co-auditor) throughout the period.

The gradual withdrawal of Canadian audit firms from the banking industry may reflect the changing nature of banking or the limitations imposed on auditors by the Bank Act. Clarkson had been a major player in bank audits in the early part of the period (prior to 1923). The Clarkson firms were auditors of the Standard Bank, the Dominion Bank, the Bank of Toronto, the Bank of Canada, and the Imperial Bank of Canada. In 1923 the Bank Act was revised and auditors were prohibited from providing any other services to the banks if the firm acted as the banks' auditor. In hearings before the Senate banking committee on the proposed Act, G.T. Clarkson gave testimony that if that provision was passed his firm would not be able to afford to do bank audits and would withdraw from the field [Beckhart, 1929]. He appears to have been good to his word [Little, 1964, p. 26].

Other firms may have lost audit clients due to the changing geographic pattern of banking. Initially the banks' capital came from commercial term deposits and share subscriptions. These funds quickly proved inadequate to meet the demand for loans. As the banks lowered their administration costs, it became cost effective for them to expand their retail operations and secure loan funds from demand deposits [Naylor, 1975a]. All of the Chartered Banks during this period established national retail branch networks. As will be discussed below under geographic specialization, few Canadian audit firms had the office network to match the expanding needs of these clients.

The extent of industry specialization among the six largest firms can be seen in Table 5. Each of these firms displays a distribution of clients by industry that differs significantly from the distribution of the total sample.[8] In particular, the larger firms (with the exception of Peat Marwick) show a higher than average proportion of manufacturing clients. Peat Marwick's strength in the financial services and transportation industries is evident in this table. Other notable industry concentrations include Clarkson's and Touche's higher than average proportion of clients in the natural resource sector and Ross' concentration in public utilities. The Herfindahl Index shows that the Big-Three Canadian firms and the Big-Three International firms were about equally diversified across industries (e.g., the average for the Canadian firms was 0.32 compared with 0.35 for the international firms). The right hand column in Table 5 provides the six-firm concentration ratios by industry. While individual firms were specialized in certain industries, the level of concentration does not appear to have provided monopoly power to the firms.

Industry specializations are also evident among smaller firms. The Milne companies, ranked 12th, had more than half of their audits in light and power companies including Pennsylvania Water and Power Co., Shawinigan Water and Power Co., Laurentide Power Co., Ltd, Canadian Light and Power Co., and Quebec Power Co. The Langley firm, ranked 23rd, was concentrated in the mining industry particularly in Kirkland Lake. Their clients included Lake Shore Mines Ltd, Macassa Mines Ltd, Manitoba Basin Mining Co. Ltd, Murray-Kay Ltd, Premier Gold Mining Co Ltd, Sylvanite Gold Mines, Toburn Gold Mines Ltd and Tough Oats Burnside Gold Mines Ltd. As a final example, F.G. Jewell, ranked 28th based on the number of audits in the sample, is limited to mortgage companies, auditing the Canada Trust Company, the Ontario Loan and Debenture Company, the Huron and Erie Mortgage Company, and the London and Western Trusts Company.

(B) Geographic Specialization: In spite of its vast geographic size, Canada's economic activity is extremely concentrated. There are regional differences in natural resources that provide a natural focus for activity such as oil and gas in Calgary or

[8] This statement is based on a Chi-square test between the industry distribution of clients for each firm compared with the complete sample. All results were significant at $p<0.05$ allowing the conclusion that the distribution of the firms' clients was more concentrated than would be expected if the clients were a random selection from all clients.

TABLE 5

The Distribution of Big-Six Audit Firm Clients Across Industries[1]
(percentage of clients served by each firm)

		Accounting Firm							
		Clarkson	Ross	Riddell	Price Waterhouse	Peat Marwick	Touche	Total Sample	% of total sample served by the Big-Six
Major Industry of Client Firm	Financial	19.55	25.24	28.68	18.86	30.65	5.05	36.91	18.3
	Transportation	11.28	4.37	0.78	4.65	24.73	6.06	8.65	31.2
	Public Utilities	6.77	20.39	8.53	7.49	1.61	6.06	8.33	32.1
	Manufacturing	40.60	43.20	57.36	57.11	29.03	58.59	33.11	44.7
	Natural Resource	18.80	3.40	4.65	5.68	8.60	23.23	10.51	28.9
	Other	3.01	3.40	0.00	6.20	5.38	1.01	2.50	49.0
		100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	Herfindahl Index	0.2566	0.2962	0.4208	0.3766	0.2499	0.4072		

The Herfindahl Index is defined as the sum of squared percentage market shares in each category for a firm. The index takes a maximum value of 1 when the firm has all of its clients in one category and a minimum value 1/n (where n is the number of categories) when a firm has its clients evenly distributed among categories (0.167 in this table).

[1]The "Financial" category includes banks, trust, mortgage and insurance companies. The "Transportation" category includes railways, shipping and canal companies. The "Public Utilities" category includes light and power, telephone, telegraph and cable companies. The "Manufacturing" category includes all manufacturing firms. The "Natural Resource" category includes agriculture, mining and petroleum companies. The "other" category includes all companies not otherwise categorized (primarily retailers and construction companies).

wheat in Winnipeg but the heart of Canada's industrial and financial activity is centred on the Great Lakes and the cities of Toronto and Montreal. Toronto is listed as the head office on 33% of the financial statements in the sample, followed by Montreal with 23%. The secondary centres of note include Winnipeg, Manitoba (5% of financial statements: mainly resource companies), Hamilton, Ontario (4% of financial statements: mainly industrial), Halifax, Nova Scotia (3.65% of financial statements: mainly financial institutions) and London, Ontario (3.5% of financial statements: mainly insurance companies). This pattern of economic development allowed for at least two strategies for accounting firms: either to specialize in one region or to diversify across a number of centres.

The extent of geographic specialization among the six largest firms can be seen in Table 6. Each of these firms displays a geographic distribution of clients that differs significantly from the distribution of the total sample.[9] Consistent with Collard's [1983] observations, the Ross firm was the most geographically concentrated of the large firms with over 80% of its clients in Montreal. Collard [1983, pp. 53-54] notes that the firm experimented with branch offices (in Winnipeg, Toronto, Ottawa and Quebec City) but was unable to make them successful. Ross decided as a policy to "stick to their own backyard". Clarkson was highly concentrated in Toronto while Peat Marwick and George Touche both have a higher than average proportion of clients in western Canada (British Columbia, Alberta, Saskatchewan and Manitoba).

The Herfindahl Index reported at the bottom of Table 6 allows the extent of geographic diversification of the firms to be compared. The Big-Three Canadian audit firms all have a higher index values than the Big-Three International Firms. This reflects the greater concentration of the Canadian firms' clients in specific geographic markets. The international firms have very low index values indicating a diversity of client locations across Canada. The right hand column in Table 6 provides the six-firm concentration ratios by location. While individual firms were specialized in certain areas, the level of concentration does not appear to have provided monopoly power to the firms.

[9] This statement is based on a Chi-square test between the geographic distribution of clients for each firm compared with the complete sample. All results were significant at $p<0.05$ allowing the conclusion that the distribution of the firms' clients was more concentrated than would be expected if the clients were a random selection from all clients.

TABLE 6

Geographic Distribution of Clients of the Big-Six Audit Firms (percentage of clients served by the firm)

		Accounting Firm							
		Clarkson	Ross	Riddell	Price Waterhouse	Peat Marwick	Touche	Total Sample	% of total sample served by the Big-Six
Client	Toronto	75.00	5.97	10.85	27.84	18.13	30.00	33.33	29.3
Head	Other Ontario	18.28	7.96	10.08	12.11	4.68	16.00	18.91	19.5
Office	Montreal	3.73	82.09	51.94	35.82	12.87	22.00	23.38	44.9
Location	Other Quebec	0.37	2.99	15.50	1.03	3.51	1.00	3.41	27.5
	Atlantic	0.37	1.00	2.33	6.19	1.17	7.00	6.32	15.2
	Western	1.49	0.00	8.53	9.28	34.50	23.00	8.37	39.2
	United States	0.37	0.00	0.78	5.15	25.15	1.00	4.84	33.7
	Europe	0.37	0.00	0.00	2.58	0.00	0.00	1.11	24.4
	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0
		100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	Herfindahl Index	0.5976	0.6848	0.3236	0.2364	0.2353	0.222		

The Herfindahl Index is defined as the sum of squared percentage market shares in each category for a firm. The index takes a maximum value of 1 when the firm has all of its clients in one category and a minimum value 1/n (where n is the number of categories) when a firm has its clients evenly distributed among categories (0.111 in this table).

The pattern of specialization in a restricted geographic area is also common of the smaller firms. The firm of C.S. Scott, for example, ranks as the eighth largest auditor during this period. Their clients however were concentrated in Hamilton, Ontario including Dominion Power and Transmission Company, Hamilton Bridge Company, Frost Steel and Wire, Canadian Westinghouse Co. Ltd., the Bank of Hamilton, Sawyer Massey Ltd., and Tuckett Tobacco Co. Similarly, the MacIntosh firms, ranked as the tenth largest auditor of the period, operated primarily in and around Montreal, PQ including clients such as Ames Holden McCready Ltd, Atlantic Sugar Refinery, Bruck Silk Mills, Calgary Power Company (which in spite of the name was headquartered in Montreal), Canadian Vickers Ltd., Consolidated Oka Sand and Gravel Co., Intercolonial Coal Mining, MacLaren Power and Paper Co, Ottawa-Montreal Power Co, Ltd, and Southern Canada Power Co., Ltd. The firm of Creak, Cushing and Hodgson, ranked 13th, is also concentrated in the Montreal area with clients such as National Breweries Ltd, Ogilvie Flour Mills Co., Ltd, Paton Manufacturing Company of Sherbrooke, Price Brothers & Co. Ltd, Tooke Bros Ltd, International Power Co. Ltd, Canada Iron Corporations, Ltd, and Canadian Airways, Ltd.

(C) Stock Exchange Listings: Among the 3661 financial statements analysed, 2414 (66%) indicated that the firm was publicly traded on at least one stock exchange. These financial statements indicated a total of 3636 listings. The location of these listings is summarized in Table 7.

TABLE 7

Stock Exchange Listings

Stock Exchange	Number of listings	Percentage of sample	Cumulative
Toronto	1666	45.85	45.85
Montreal	1349	37.10	82.95
London	324	8.91	91.86
New York	146	4.02	95.88
Vancouver	34	0.94	96.82
Calgary	32	0.85	97.67
Winnipeg	31	0.85	98.52
All other foreign stock exchanges	54	1.49	100.00
Total	3636		

The data in Table 7 indicate that firms were predominately listed on Canadian stock exchanges (approximately 87% of all listings). Where these firms sought foreign funds, the most common listings were on the New York and London stock exchanges. The firms listed on the London Stock Exchange were primarily railways and public utilities (light and power companies). Canadian National Railways and Canadian Northern Railways are reported as listed solely on the London exchange while Canadian Pacific Railways was listed on the Toronto and Montreal exchanges in addition to being listed on the London exchange. Other Canadian companies that limited their listings to London include the Hudson Bay Company, Trust and Loan Company of Canada and the Robert Simpson Company. The New York Stock Exchange attracted a more diverse group of Canadian companies and very few who chose to list solely on that exchange (e.g., the International Nickel Company and Borden Co.).

Within Canada, the Toronto and Montreal stock exchanges dominate the listings. These two exchanges account for eighty-three percent (82.9%) of total listings. Naturally, given the extent of listings on these exchanges, most sectors of the Canadian economy are represented. The smaller Canadian exchanges tend to be specialized in resource-based companies operating in the region of the exchange. For example, firms listed on the Calgary exchange tended to operate in the petroleum industry (exploration and refining); firms listed on the Vancouver exchange tended to be petroleum and mining firms.

The larger audit firms in the sample have a slightly larger proportion of listed clients than smaller firms. For example, among the six largest audit firms 75% of clients are listed while among the bottom six audit firms on the ranked list in Table 1, 68% of clients are listed (among 121 audit firms that appear only once in the sample 68.3% have listed clients). The relatively small variation among large and small firms on this variable is probably a reflection of the selection criteria used by the editors of the *Review*. Presumably to ensure a market for their publication they have focussed on those Canadian firms that were followed by investors, resulting in a bias toward listed firms, and/or were of interest to competitors, resulting in a bias toward larger firms. Unfortunately in the absence of reliable data on the population of firms during this period, it is impossible to generalize beyond the sample at hand.

Among the top six audit firms, 75.9% of the clients of Canadian firms and 76.2% of international firms were listed on at least one exchange. On average, therefore, Canadian firms during this period were doing as well as the international firms in attracting listed clients. Focusing on the clients listed on the London and New York exchanges can refine this view of the market. The big-three international firms in the sample had 11% of their Canadian clients with listings on the London exchange and 6% on the New York exchange. By comparison, the big-three Canadian firms had 6.3% of their clients with listings on the London exchange and 1.9% on the New York exchange. These data suggest that Canadian companies listed on foreign exchanges, particularly on the New York exchange, tended to favour the international accounting firms.

DISCUSSION

The data presented above show that the Canadian audit market was becoming more concentrated over the first half of the 20th century. Brozen [1982, pp. 27-38] identifies two time patterns of increasing industry concentration. Concentration based on technological innovation tends to occur in the early years of a product's life cycle and then is gradually eroded by competition and further product innovation. This is not the case in the Canadian audit market. The second pattern begins with a diffuse market followed by increasing concentration based on improved transportation and communications technologies, and economies of scale in production. Tedlow [1988], commenting on the latter pattern, shows that the pace of concentration was uneven in the U.S. consisting of a series of sharp rises in market concentration interspersed with periods of stability. For most of the period considered in this paper the level of concentration remained constant with the exception of a surge during the late 1920s. The pattern observed in the Canadian audit market is consistent with Brozen's [1990] second model of concentration but is at odds with Tedlow's [1988] findings. Both of these observations require comment.

Concentration in the Canadian audit market was not based on technological breakthroughs that allowed firms to gain an instantaneous comparative advantage. Rather, concentration emerged gradually as firms differentiated themselves. A key factor in this process was the professionalization of accountancy in Canada. The increasing concentration in the Canadian audit market occurred simultaneously with the emergence of professional associations of chartered accountants. The ten provincial institutes of chartered accountants, for example, were incorporated between 1880 and 1921. Although these bodies did not attempt enact legislation that would give them a monopoly over practice, they did seek to differentiate themselves from other practitioners. They were successful, for example, in having early legislation that required audits specify that the auditor should be a chartered accountant "or other expert accountant" [e.g., the Ontario Municipal Act, 1897; the Federal Trust Company Act, 1919; and, the Bank Act, 1923. Cf. Richardson, 2000, pp. 106-107]. This format elevated the status of chartered accountants but carefully allowed "others" to practice. The additional clause ensured that the chartered accountants would not be accused of seeking a monopoly and prevented a call for the chartered accountants' Institutes to grandfather all those currently in practice into membership.

The chartered accountants' institutes also established apprenticeship rules that required potential entrants to serve within an accounting firm prior to writing their examinations. This requirement had three effects. First, it provided an effective barrier to entry to possible auditors and allowed existing firms to grow rapidly based on these entrants. Second, it provided the firms with economies of scale. In most service industries, economies of scale are very limited since the service is based on face-to-face interaction with the service provider. Some economies of scale are possible by delegating lower level tasks to others but this approach is limited by the extent to which the service is decomposable and by the cost differentials between alternative providers. In the case of apprentices, since they will have most of the necessary skills after some period of training a large portion of the audit task can be delegated. Also during this period apprentices were given a meagre stipend or in some case would be charged for the opportunity to train in the firm. Finally, it allowed firms to differentiate themselves based on the training opportunities provided to apprentices. This gave large firms a competitive advantage in seeking out apprentices and hence to grow faster relative to smaller firms.

The rise in concentration levels is also consistent with the effects of improving transportation and communications systems on the ability of firms to expand their markets. For example, in 1911 Clarkson, headquartered in Toronto, sent his nephew (Helliwell) to Vancouver to open a branch of the firm. It became evident after a few years that this arrangement was not workable and the Vancouver firm was allowed to continue on its own account [Crate, 1970]. Clarkson was able to open offices in Ontario and Quebec, however, where it was easier to maintain contact including offices in Montreal (1922), Windsor (1929), Ottawa (1929) and Hamilton (1938) [Little, 1964, p. 36]. It was not until 1945 that Clarkson opened an office in Vancouver that was integrated with the rest of the firm [Little, 1964, p. 41].

One of the key differences between Canadian and foreign auditors during this period was the geographic scope of operations within Canada. Most of the Canadian audit firms were niche players; they were specialized in particular industries and locations. The foreign firms, however, quickly established a wide geographic network. This may have been a result of their connection to investment trusts with widely dispersed assets or, in several cases, their entry into the Canadian market as auditors of the railways. In order to meet the needs of railway audits, these audit firms were forced to develop the office network and abilities to operate across significant distances within Canada.

The final issue to be discussed is the steady rise of concentration in Canada compared with Tedlow's [1988] observations on the pattern of concentration in the U.S. The lack of a dramatic rise in concentration during the 1920s compared with the U.S. can be attributed to differences in the two economies during this period. In the U.S. the "roaring Twenties" saw a period of prosperity and growth that triggered the surge in mergers. Canada however did not share this period of growth. Bliss [1987] refers to this period in Canada as the "stuttering Twenties". Canada recovered more slowly from the First World War than the U.S. and entered the 1920s with a severe capital deficit that prevented rapid expansion. The entire period through the First World War, depression and Second World War was thus marked by steady conservative growth in Canada.

The other difference between Canada and the U.S. was their approach to the regulation of "trusts" and other monopolistic behaviour by firms. The U.S. adopted the Sherman Anti-Trust Law in 1890 and began to enforce these provisions through the Federal Trade Commission in 1914. After the depression further legislation was enacted to address price discrimination, increase the damages that could be sought and eased the burden of proof [Scherer and Ross, 1990, pp. 12-13]. These legal remedies ended prior surges of mergers until entrepreneurs could invent new forms of organization and contracting that did not violate the letter of the law. The result was a series of ebbs and flows in merger activity in the U.S. Canada actually enacted anti-trust legislation prior to the U.S. in 1889 but this legislation used a criminal burden of proof that made enforcement difficult. The Act was amended in 1923 to prohibit mergers to the detriment of the public but the same burden of proof was maintained. This Act remained in place until 1986. During that entire period only one successful prosecution was recorded [Scherer and Ross, 1990, p. 197]. In Canada, then, concentration was not curtailed by legislation but was not catalyzed by rapid market growth. The result was the slow steady increase in market concentration reflected in the data analysed in this paper.

CONCLUSION

The Canadian audit market, like that of other countries, emerged in response to the creation of capital intensive industries, joint-stock companies and government intervention in financial reporting. The accounting firms that served this market in Canada were a mix of international firms (most notably Price Waterhouse, Peat Marwick Mitchell and George Touche) and domestic firms. Among the Canadian firms few could compete for market share with the international firms during this period. The exceptions were the Clarkson partnerships, P.S. Ross and Sons, and, to a lesser extent, the Riddell partnerships, Thorne Mulholland Howson & McPherson, and Edwards Morgan.

The Canadian audit market during this period was concentrated among a small set of suppliers. The six largest audit firms provided 42% of all audits in the sample. Among the larger audit firms, the international firms had a more geographically diverse set of clients than the Canadian firms but all of the large firms had clients spread across a diverse set of industries. Smaller firms in the Canadian marketplace appear to have followed a niche strategy, usually concentrating on a small geographic market or, to a lesser extent, on particular industries. There is also evidence of market segmentation by stock exchange listing with listed companies more likely to choose one of the large audit firms, and companies listed on foreign markets showing a preference for the international accounting firms.

The overall level of concentration in the market during this period was below the threshold usually associated with monopoly pricing (approximately 60% of the market served by the top four firms [Cubbin, 1988, p. 62]). However, the existence of niche markets in geographic areas, industries and, to a lesser extent, stock exchanges suggests that firms may have been able to exercise some monopoly power. In contraindication to this, however, the openness of the Canadian market to international firms suggests that entry and exit to the market was relatively easy. The potential for competition where monopoly rents were possible may be a key factor in maintaining the efficiency of the industry.

All of the Canadian firms, listed in this study of the pre-World War Two audit market in Canada, have disappeared. Clarkson merged with Arthur Young (which became Ernst & Young), P.S. Ross & Sons merged with George Touche to form Touche Ross (now Deloitte Touche), and Edwards Morgan merged with Deloitte (now Deloitte Touche). Thorne Riddell became KPMG in Canada in 1979. The Thorne Riddell firm brought together several of the ranked firms during this period including Thorne, Riddell, Barber, Hudson, and Helliwell. This firm, and its predecessors, was an explicit attempt to remain an independent Canadian partnership [Crate, 1970].

As Cubbin [1988, p. 48] notes, mergers are the key mechanisms by which market concentration increases. Historically, Canadian competition policy has focused on removing barriers to trade rather than restricting corporate size or concentration [Caves *et al*, 1980]. The openness of the audit market during this period and the increasing concentration over time are reflections of this policy. The impact of the disappearance of Canadian nameplates from audit firms and the increasing concentration of auditors in the post-Second World War period requires study to further our understanding of the evolution of the Canadian audit market.

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