100 years of Interlocking Directorates in the Canadian Urban System

Sean B. O'Hagan, Nipissing University

Introduction

There is strong agreement in the literature that knowledge accumulation is critical to the competitiveness of companies and the regions where they are located. This condition raises the question as to how firms grow their knowledge base in order to remain competitive? It has become commonplace for economic geographers to employ firm level data in their assessments of this issue. However, less attention has been paid to individual economic agents, the actual acquirers of knowledge, who then convey their know-how to the firm (Gertler, 2010). This article addresses this limitation by analyzing a specific set of individuals who play a crucial role at the top of the business hierarchy: members of the boards of directors of the largest corporations in Eastern Canada.

One generally accepted avenue whereby boards of directors acquire knowledge is through interlocking directorates, which occur when the board member of one firm also sits on the board of another firm. Recent research on the subject suggests that these connections yield knowledge transfer between companies (Shropshire, 2010; Abdollahian, Thomas, Yang, & Chiang, 2017; Howard, Withers, & Tihanyi, 2017; Withers et al., 2018). One way economic geographers can add to this area in the literature is by highlighting the influence of space and place in acquiring knowledge via these inter-organizational networks. For example, Boschma (2015) provides the specific example of interlocking corporate boards and strong social networks where connections may be too inward-looking and network connections may become too geographically proximate. A shortcoming of this type of local network is a poor ability to adapt (Crespo, Suire, & Vicente, 2013).

This study compares the system of interlocking directorates linking centers in Eastern Canada for the years 1912 and 2012. The purpose is to analyze the changing geography of interlocking directorates for firms located in Ontario, Quebec, and Atlantic Canada (New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island). It then compares how firms in each of these three regions have transformed the spatial distribution of their interlocking directorate network, and as a result where they acquire this form of knowledge.

Data

This study utilizes a thorough dataset of directors for Eastern Canadian based firms as identified by Financial Post's *Directory of Directors* in the year 1912 and 2012. In 1912, each incorporated company in Canada was asked to supply a list of their directors and officers. Out of nearly 10,000 requests, approximately 5,000 were returned with most information completed. The 2012 register of companies includes a list of executive officers and directors for both publicly traded and privately owned companies. Criteria for inclusion in the 2012 sample includes: incorporation in Canada; substantial revenue or assets; and Canadian residency for the majority of the directors. Once a company qualifies for inclusion, its officers and directors automatically meet the criteria for a personal listing. As a result, while amalgamating the 1912 and 2012 datasets is not perfect, it offers a rare examination into a comparison of directorships across Canada.

Summary of data, 1912 and 2012

Variable	Canada		Ontario		Quebec		Atlantic Canada	
	1912	2012	1912	2012	1912	2012	1912	2012
Total number of directors in dataset	6,997	24,163	4,541	9,474	1,781	3,812	633	866
Total number of interlocks in dataset	10,122	30,632	6,199	9,618	2,913	3,261	398	767
Total number of companies in dataset	1,741	5,699	470	2,076	178	747	58	200
Number of Directors per Company	4.02	4.24	9.66	4.56	10.01	5.10	4.02	4.33
Number of Interlocks per Director	1.45	1.27	1.37	1.02	1.64	0.86	0.63	0.89
Number of Interlocks per Company	5.81	5.37	13.19	4.63	16.37	4.37	6.86	3.84
% of directors in country			64.90	39.21	25.45	15.78	9.05	3.58
% of interlocks in country			61.24	31.40	28.78	10.65	3.93	2.50

Changes to female representation in directorships and the interlock network

	1912		2012	
	Female	Male	Female	Male
Directors Total	2	4,536	2,648	15,518
Directors %	0.04	99.96	14.57	85.42
Interlocks Total	0	4,019	1,294	14,324
Interlocks %	0	100	8.28	91.71

Findings

Geographical distribution of Intra- and Inter-provincial interlocks, 1912 and 2012

Province	% of Interlocks, 1912			% of Interlocks, 2012			= change over 100 years		
	Ontario	Quebec	Atlantic Canada	Ontario	Quebec	Atlantic Canada	Ontario	Quebec	Atlantic Canada
Ontario	82.48	27.52	10.67	60.02	24.26	30.12	-22.46	-3.25	19.44
Quebec	12.98	67.69	15.45	8.67	61.15	5.41	-4.30	-6.54	-10.04
Atlantic Canada	0.64	1.96	73.03	2.38	1.35	35.06	1.74	-0.60	-37.97
New Brunswick	0.12	0.32	11.80	0.87	0.62	5.88	0.76	0.30	-5.92
Newfoundland	0	0	2.25	0.06	0.12	4.94	0.06	0.12	2.69
Nova Scotia	0.52	1.64	58.71	1.44	0.62	22.82	0.92	-1.02	-35.88
PEI	0	0	0.28	0	0	1.41	0	0	1.13
BC	1.56	1.46	0.28	13.59	5.48	11.76	12.03	4.02	11.48
Alberta	0.35	0.39	0	10.91	5.23	9.18	10.56	4.84	9.18
Saskatchewan	0.08	0	0	0.73	0	7.53	0.65	0	7.53
Manitoba	1.42	0.89	0.56	3.51	2.52	0.94	2.09	1.64	0.38
NWT	0	0	0	0.08	0	0	0.08	0	0
Yukon	0	0	0	0.10	0	0	0.10	0	0

Summary of Inter- and Intra-Provincial interlocks by select Eastern Canadian cities, 1912 and 2012

City	Ontario			Quebec			Atlantic Canada			West			North		
	1912	2012	Change	1912	2012	Change	1912	2012	Change	1912	2012	Change	1912	2012	Change
Toronto	83.06	64.98	-18.09	12.47	8.45	-4.02	0.69	1.83	1.14	3.77	24.70	20.93	0	0.04	0.04
Montreal	27.66	28.50	0.84	67.83	55.92	-11.90	1.94	1.48	-0.46	2.57	14.10	11.52	0	0	0
Hamilton	86.50	75.00	-11.50	10.95	4.17	-6.78	0.73	8.33	7.60	1.82	12.50	10.68	0	0	0
London	89.37	55.45	-33.92	8.66	5.45	-3.21	0	0.91	0.91	1.97	37.27	35.30	0	0.91	0.91
Ottawa	89.89	57.96	-31.93	8.24	14.33	6.09	0	4.14	4.14	1.87	22.29	20.42	0	1.27	1.27
Quebec City	25.69	16.81	-8.88	69.44	72.84	3.40	0	0.86	0.86	4.86	9.48	4.62	0	0	0
Halifax	9.87	28.09	18.22	13.45	5.11	-8.35	76.23	36.60	-39.64	0.45	30.21	29.76	0	0	0
St. John	13.21	50.00	36.79	16.98	0.00	-16.98	67.92	50.00	-17.92	1.89	0.00	-1.89	0	0	0
Sydney	17.86	42.86	25.00	14.29	14.29	0	67.86	0	-67.86	0.00	42.86	42.86	0	0	0

Interlocks by company (as measured by centrality)

1912 company name	Industry	Centrality	2012 company name	Industry	Centrality
Dominion Coal Company Ltd.	Manufacturing	0.091	London Life Insurance Company	Fire	0.076
Canadian General Electric Company Ltd.	Manufacturing	0.091	The Canada Life Assurance Company	Fire	0.076
Western Assurance Company	Fire	0.090	The Great-West Life Assurance Company	Fire	0.075
Toronto Electric Light Company Ltd.	Light, Power, and Water Company	0.090	Canada Life Financial Corporation	Fire	0.075
Toronto and York Radial Railway Company	Transport	0.090	Great-West Lifeco Inc.	Fire	0.074
British America Assurance Company	Fire	0.090	Power Financial Corporation	Fire	0.074
National Trust Company Ltd.	Fire	0.089	Canada Life Financial Corporation	Fire	0.073
Canadian Pacific Railway Company	Transport	0.089	Burnet, Duckworth & Palmer LLP	Commercial & Professional Services	0.073
Toronto Railway Company	Transport	0.089	IGM Financial Inc.	Fire	0.073
Royal Trust Company	Fire	0.089	Power Corporation of Canada	Energy and Resources	0.073
Dominion Iron and Steel Company Ltd.	Manufacturing	0.088	Alexis Minerals Corporation	Energy and Resources	0.073
Canadian Bank of Commerce	Fire	0.088	Sulliden Gold Corporation Ltd.	Energy and Resources	0.072
Bank of Montreal	Fire	0.088	Continental Minerals Corporation	Energy and Resources	0.072
Toronto General Trusts Corporation	Fire	0.087	Northern Dynasty Minerals Ltd.	Energy and Resources	0.072
Central Canada Loan and Savings Company	Fire	0.860	Crowflight Minerals Inc.	Energy and Resources	0.071
Dominion Securities Corporation Limited	Fire	0.860	Nyah Resources Corp.	Energy and Resources	0.071
Sao Paulo Tramway, Light and Power Company Ltd.	Transport	0.860	Lundin Mining Corporation	Energy and Resources	0.071
Montreal Trust Company	Fire	0.860	Kria Resources Ltd.	Energy and Resources	0.071
Montreal Light, Heat and Power Company	Light, Power, and Water Company	0.085	Penn West Energy Trust	Energy and Resources	0.071
Rio de Janeiro Tramway, Light and Power Company Ltd.	Transport	0.085	Valencia Ventures Inc.	Energy and Resources	0.071
Canada Foundry Company Ltd.	Manufacturing	0.084	McCarthy Tétrault LLP	Commercial & Professional Services	0.070
London Electric Company Ltd.	Light, Power, and Water Company	0.083	Avion Gold Corporation	Energy and Resources	0.070
Canada Paper Company Ltd.	Manufacturing	0.083	Brookfield Asset Management Inc.	Fire	0.069
Ogilvie Flour Mills Company Ltd.	Manufacturing	0.083			

Centrality of top companies

1912		2012	
Industry	Centrality	Industry	Centrality
Manufacturing	0.343	FIRE	0.226
FIRE	0.181	Energy	0.111
Transportation	0.127	Materials	0.092
Light, Power, and Water	0.089	Utilities	0.046
Telegraph and Telephone	0.031	Transportation	0.037

Discussion

Results show that Ontario's proportion of all interlocks across Canada decreased more than the other two regions in this study. However, we argue that Quebec's decrease was actually more substantial. The French province's proportion decreased from 29% of all interlocks in 1912 to only 10% in 2012. In fact, not shown here, but British Columbia and Alberta's directorships and interlocks actually rose from almost nothing in 1912 to make-up more than Quebec's proportion in 2012. Atlantic Canada's proportion of interlocks decreased as well, albeit a small proportion of all interlocks.

Perhaps the most important finding of this study is the fact that Quebec firms interlocked intra-provincially more than any other province and their propensity to transform these interlocks to external links was the least over the 100 year study period. In Quebec's case, this can be explained by the cultural dissimilarities with the rest of the country. Ontario's intra-provincial interlocks maintained a healthy proportion of intra-provincial interlocking as well. Ontario's results can be explained by the sheer volume of companies, and thus the interlocking opportunities within the province. Directors sitting on Ontario boards make-up 40% of all directors in the 2012 dataset and Quebec directors only constitute 16% of all directors (Table 1), this difference is even more noteworthy.

A second noteworthy finding of the study is the emergence of a hierarchical pattern amongst the cities in this study. For headquarters and directors, Toronto is at the top of the hierarchy, followed by a second tier consisting of Montreal. But when it comes to interlocks, Montreal's decline is staggering. Certainly, the change in interlocking by Montreal firms is comparable to Toronto. However, in 1912 a quarter of all interlocking directorates encompassed a Montreal firm. This decreased to 6% in 2012. While not displayed here, Vancouver and Calgary gained dramatically to out-pace Montreal. Montreal decreased in all categories, and significantly decreased for interlocks. It could be suggested that Montreal decreased so significantly for interlocks, more than any other city, that it could be argued that it is relegated to a third tier in the hierarchy of Canada.

Perhaps more important, were results for Montreal, the other large city in the study. Montreal and Toronto are similar in that they are at the top of Canada's business and urban hierarchy, and international business centers. Therefore, it was anticipated that the proportion of Montreal's firms intra-provincial interlocking would decrease significantly. In fact, it only decreased 12%. The difference between Montreal and Toronto (18% to 12%) is more meaningful by the fact that the opportunities for Montreal firms to share an interlock with other firms in Quebec are much less than Toronto's opportunity to link to other Ontario firms. Only 12% of Hamilton firms, as noted previously, suffered tremendous losses to their interlocking network, and Quebec City, which actually increased their intra-provincial connections, did not expand their interlocking network more than Montreal.

Conclusion

Results revealed that all three regions diffused their interlocking to more distant networks over the 100 year study period. All three regions increased their linkages to Western Canadian firms via interlocks, however Ontario and Atlantic Canada increased much more substantially than Quebec for linking to Western Canada. The geographically based results show that Quebec firms continued to interlock intra-provincially more than Ontario and the Atlantic Provinces.

At the city level, Montreal and Toronto are comparable international urban centers and exert considerable influence as business focal points. Of the two, Montreal's fall from the top of the interlocking hierarchy is troubling. In 1912 a quarter of all interlocking directorates encompassed a Montreal firm. This decreased to 6% in 2012. Perhaps more important is the fact that Montreal's change in intra-provincial interlocking decreased only 12%.

Quebec City, the other notable Quebec City in this study followed a similar pattern. Firms from Quebec City actually increased intra-provincial interlocking over the 100 year study period. This inward bias in the long run can leave a region, in this case Quebec, at a distinct disadvantage and contribute to its decline. Disregarding ideas from external individuals, especially employment pivotal to the success of the corporation, can leave firms vulnerable.

This study invites further questions on the subject, especially when considering Quebec City and Montreal. The following question is raised: Do cultural differences outside the province prevent directors of Quebec City firms from accessing important sources of external knowledge? A qualitative study that asks specific questions will allow this to occur.