

Functional Dynamics and a Peripheral Quaternary Place: The Case of Calgary

Murray D. Rice

Department of Geography

University of Northern British Columbia

Prince George, BC V2L 5P2

The existence of regional economic disparities is a persisting feature of Canada. Although numerous explanations have been advanced for variations in economic well-being throughout the country, one common element faced by all is the inherent spatial character of the problem (Michalak and Fairbairn 1988). Among the most prominent conceptualizations of the Canadian space-economy that have been advanced in the regional development literature has been the core-periphery, or heartland-hinterland, theory (Green 1990; McCann 1987). This paper focuses attention on the core-periphery conceptualization of the Canadian space-economy as it relates to the development of a system of corporate headquarters centres, or quaternary places, in Canada.

In recent years, a number of researchers have begun to focus on the changing location of headquarters and related services in Canada. In connection with corporate decision-making, researchers have examined the implications of domestic and foreign ownership for headquarters location (Semple 1977; Semple and Smith 1981), the inter-city linkages associated with corporate board members (Green and Semple 1981; Rice and Semple 1993), and the impact of mergers, acquisitions, and joint ventures for cities and firms (Green 1985, 1990; Green and McNaughton 1989). In related areas, researchers have also investigated the location and linkages of offices (Gad 1985, 1991a, 1991b) and services (Coffey and Polèse 1989; Stabler and Howe 1993) that are themselves highly connected to corporate decision-making. Much of this effort has emphasized the role of cities in Ontario and Quebec as the focus of high-level corporate activity in Canada (Rice and Semple 1993; Semple and Smith 1981). While some work has focused on the location of producer services outside of the Canadian heartland (Ley and Hutton 1991; Michalak and Fairbairn 1988), re-searchers have recently begun to write specifically about headquarters location in the periphery (Semple 1994). This paper attempts to extend the theory relating to advanced corporate functions, and decision-making in particular, by examining the location of headquarters in the periphery of Canada.

This paper examines the emergence of Calgary as an important quaternary place in the Canadian periphery over the period 1970-1990. The paper particularly focuses on the composition of the city's headquarters community, and the context of this community within the broader economy for the nation as a whole. The study attempts to relate the spatial conceptualization of the Canadian economy embodied in core-periphery theory to Calgary's status as a peripheral quaternary place.

Quaternary Location Research

Advancement and Connections

This study's major contribution is to the literature on quaternary location (Holloway and Wheeler 1991; Rice and Semple 1993; Semple 1973, 1977, 1985, 1995; Wheeler and Mitchelson 1989). Despite its relatively recent introduction, quaternary location analysis finds its roots in the well-established field of location analysis in economic geography. Beginning with the work of Thünen (1826), location analysis has built a long tradition of explanation for the location of a wide variety of economic activities, ranging from agriculture (Dunn 1956) and manufacturing (Lösch 1954) to the highest-order services located in the elite cities of the world (Ó hUallacháin 1989). The study of the location of headquarters and related decision-making activities constitutes one of the latest additions to this growing body of theory.

Quaternary location research finds a close counterpart in service location analysis. Although quaternary activities are arguably distinct from other kinds of advanced services (Semple and Rice 1994), quaternary location research and service location research are highly complementary. The substantial producer service literature that has evolved in recent years (Daniels 1991; Kirn et al. 1990; Ó hUallacháin 1989) deals specifically with businesses such as law firms, accounting firms, and management consultants that locate in close proximity to important corporate headquarters. Indeed, research into the flexible specialization of business has demonstrated the important role that elite service firms play in coordinating the activities of businesses of all kinds (Christopherson 1989; Sayer and Walker 1992). The development of a framework for understanding the location of corporate decision-makers has implications for the development of location theory dealing with the producer service firms and other businesses that work closely with many headquarters functions.

The search for a decision-making location framework benefited from the publication of two important books on the subject in the mid-1970s. The first, Quante's (1976) *The Exodus of Corporate Headquarters from New York City*, took up the challenge of understanding the shifting importance of headquarters cities by examining change in the single most influential headquarters city in the U.S. Quante's study showed that some kinds of firms find centralized locations in the national centre unnecessary, while other kinds of firms demand a location in the core of the dominant national city, despite its high costs. The second book, Pred's (1977) *City-Systems in Advanced Economies*, portrayed the importance of multiple-location corporations for the North American economy and urban system. Taken together, the companies headquartered in a given centre may give the city considerable control over its own economic destiny, as well as over the fortunes of other cities throughout the country.

The work of Quante and Pred laid a foundation for much of the headquarters location research that occurred in the 1980s and 1990s. A number of researchers have continued the process of trying to explain the location of economic decision-making, with increasing emphasis on the entire system of cities which administers major national economies. For example, Holz (1977) and Strickland and Aiken (1984) have examined the location of corporate headquarters in Germany, while Semple (1977, 1994, 1995),

Semple and Green (1983), Edgington (1989), and O'Connor and Edgington (1991) have done the same for Canada and Australia. In the U.S., several empirical studies of headquarters location have been published through the 1980s and 1990s (Holloway and Wheeler 1991; Lord 1987, 1992; Wheeler 1988; Wheeler and Dillon 1985). More recently, quaternary location researchers have shifted their attention to the international level (Semple and Rice 1994). The development of quaternary location theory is an international effort, although its early development has been dominated by work based on the U.S. and Canadian economies.

Quaternary Location and Core-Periphery Theory

Numerous studies have shown that Canadian corporate decision-making activity and related services have remained highly agglomerated in a select group of cities through the 1970s and 1980s (Ley and Hutton 1991; Semple 1977; Semple and Smith 1981). Although a few important corporate centres such as Calgary and Vancouver lie in the Canadian west (Ley and Hutton 1987), by far the majority of corporate headquarters are located in the region traditionally identified as the Windsor-Quebec corridor (Semple 1995; Yeates 1991).

The existence of this spatial structure of headquarters location lends itself well to the application of core-periphery theory. According to core-periphery theory (Friedmann 1973, 1975), the existence of wealthy regions, as well as less-wealthy regions, is a persisting feature of national economies. Each country in this conceptualization is comprised of a small number of core regions that innovate and lead economic change, as well as a larger periphery whose prospects for development depend on decision-makers and corporations which reside in the core. This view of the spatial structure of the national economy accurately defines the distribution of decision-makers in the most advanced countries of the world (Green 1990: 48-54).

The core-periphery conceptualization of regional development has found general support in much previous research on the Canadian economy and urban system (McCann and Smith 1991). Research into the development of the regions of Canada has focused specifically on southern Ontario and Quebec as the core of the nation (Yeates 1985, 1991). This core dominates the nation in many ways, including such dimensions as population, purchasing power, and political power, not to mention corporate services and decision-making. At the same time, the rest of the country acts as a periphery for the core region (McCann 1987). Although change is occurring in the Canadian urban system over time (Yeates 1985), a core-periphery relationship persists in Canada.

Resource Dependence and Headquarters Location

Along with core-periphery theory, another important foundation for the study is the resource dependence perspective.⁽¹⁾ Resource dependence is an attempt to explain the behaviour of firms based on their relationship with the external business environment (Pfeffer and Salancik 1978; Pfeffer 1987). The resource dependence perspective emphasizes the reliance of individual businesses on factors outside of their control. This

perspective asserts that companies attempt to indirectly influence important elements of their external business environment that they cannot control directly, such as markets, suppliers, and competitors. From this view of corporate behaviour, an understanding of the nature of the relationship between a firm and its external environment leads to an understanding of the firm's activities.

According to resource dependency, the ability of companies to survive is dependent on their ability to influence important elements of their surroundings. A variety of techniques have been used by firms in the pursuit of such influence, including interlocking directorates (Palmer et al. 1986; Pennings 1980; Rice and Semple 1993), corporate mergers and acquisitions (Green and McNaughton 1989; Green 1990), and joint ventures (Green 1985).

The external linkages that a firm develops with its environment can take on many different forms, depending on the importance and nature of the dependence. Although inter-firm influence often manifests itself in the formal relationships mentioned already, it is important to note that more subtle connections can be just as important. Code (1991), for example, argued that financial firms cluster their key decision-makers in a small number of large, influential places because of the need for communication based on established relationships. Clearly, informal relationships also comprise an important and influential linkage between firms and external elements of their business environments.

Rice and Semple (1993), in their study of spatial interlocking directorates, connected the linkage needs of firms with the development of quaternary location theory by asserting that headquarters location is itself an important means used by firms to maintain contact with their surroundings. As they put it, companies locate their headquarters in a particular place to have "immediate local contact with many of the important external elements affecting their business" (Rice and Semple 1993: 379). Cities offering good linkages to an important element of a firm's external business environment are potential candidates to host the headquarters of that firm.

From this perspective, the headquarters located in a city are a reflection of the business environment present in that place. Decision-makers from a specific firm are drawn to a particular city, or even to a specific district of a city, by the elements of the external environment that are represented in that place (Gad 1985, 1991b). However, once in a particular location, the decision-makers of the firm modify the local economic environment by their very presence. The community of decision-makers present in a given city represents a complex set of external influences for businesses operating in the city, as well as for businesses based in other centres (Green 1990, 1993). This environment may act to retain existing businesses and attract others from alternate locations, or to repel yet other headquarters that find their needs mis-matched with the linkages available in the city.

This perspective forms the basis for this paper. Rather than focusing on the intensively-studied core of the Canadian urban system, the following case study examines the

implications of the core-periphery conceptualization of the external environment for headquarters location in the Canadian periphery.

Case Study

Data

The headquarters location case study analyzes data for the top several thousand resource, manufacturing, and service companies in Canada as ranked by annual revenues over the period 1970-1990.⁽²⁾ Data on headquarters location and annual revenues for these companies come from a number of major business publications, including the *Financial Post 500*, *Canadian Business*, the *Report on Business* of *The Globe and Mail*, and *Dun & Bradstreet*. The study selects companies from this data base for each year of the 1970-1990 period by including only those firms whose revenues exceed a given cut-off value for the year in question. This revenue cut-off begins at \$25 million in 1970 and is inflated for each year of the period using the gross domestic product implicit price index (Statistics Canada 1988, 1992a, 1992b) to a final value of \$93 million in 1990. In this way, the study examines a well-defined selection of companies comprising the largest, most influential businesses operating in Canada throughout the study period.

A simple summary of headquarters location for companies included in this selection illustrates the extent of core-periphery structure in the spatial distribution of headquarters in Canada.⁽³⁾

Table 1 summarizes the location of headquarters in selected core and periphery cities by economic sector and subsector for 1990. From this table, it is evident that the two major core cities, Toronto and Montreal, dominate in most, but not all, resource, manufacturing, and service subsectors. Of the twenty subsectors, headquarters located in Toronto or Montreal administer more than 50% of subsectoral revenues in seventeen. In terms of simple summary figures alone, it is apparent that the core-periphery concept fits the geographic distribution of headquarters for the Canadian economy as a whole.

However, beyond a confirmation of the overall core-periphery structure of headquarters location in Canada, another equally important finding emerges from Table 1. Although the core dominates in many subsectors, it is also evident that this dominance varies from subsector to subsector. From a high of 97.4% in the pharmaceutical subsector, Toronto and Montreal's combined proportion of subsectoral revenues falls to 48.6% in construction, 33.3% in petroleum, and 32.1% in co-operatives. Even among subsectors such as forestry (56.7% in Toronto and Montreal, versus 25.8% in Vancouver, Calgary, Edmonton, and Winnipeg), wholesaling (53.3% versus 35.6%) and miscellaneous manufacturing (51.1% versus 34.6%), a substantial proportion of subsectoral revenues is administered from outside of the core. Although Toronto and Montreal dominate as headquarters locations for most subsectors, some components of the economy have more of a tendency than others to locate their headquarters outside of major core centres.

TABLE 1 Headquarters in Core and Peripheral Centres of Canada, 1990

It is in this area that further study is needed. Although core-periphery theory fits well with the overall pattern of headquarters location in Canada, it also appears that the theory fits some parts of the economy better than others. Table 1 shows that headquarters in some subsectors are highly concentrated in the core, while headquarters in yet other subsectors have more of a tendency towards location outside of the core. Such business behaviour has meaning for the development of theory relating to both corporate headquarters and the specialized services that have close ties to headquarters in specific sectors and subsectors of the economy. More research is necessary to clarify the locational patterns of headquarters in the various subsectors, and the reasons for such patterns. The remainder of this paper focuses on analyzing headquarters location in the periphery through a case study of Calgary, Canada's largest headquarters city outside of the national core in 1990.⁽⁴⁾

Calgary's Headquarters Community

As might be expected from the foregoing discussion, Calgary, as a peripheral headquarters city, draws its headquarters from a select group of economic subsectors. A breakdown of Calgary's headquarters community by subsector in 1990 illustrates the extent of this concentration. While Table 1 shows that the petroleum subsector only accounted for 8.2% of all revenues in the three major sectors under study, Table 2 reveals that the subsector dominated Calgary's headquarters community with 57.6% of all revenues associated with the city's headquarters in 1990. Calgary is, in fact, Canada's leading petroleum headquarters centre.⁽⁵⁾ The next-ranked chemical subsector, with 9.4%, is itself highly related to the city's petroleum specialization. Accounting for 3.3% of all revenues in the three major sectors country-wide, this subsector is also more highly represented in Calgary than in the nation as whole. A number of service subsectors account for much of the remainder of the city's headquarters.

Table 3 adds detail to the subsectoral breakdown by depicting the ten largest companies headquartered in Calgary and their revenues in 1990. These ten companies alone account for 67.8% of the \$50,611 million in revenues associated with Calgary's resource, manufacturing, and service headquarters in that year. The table shows that six out of the top ten companies come from the petroleum subsector. Nova (chemical subsector), Canada Safeway (retail), PWA (transportation), and the Alberta Wheat Pool (co-operatives) comprise the non-resource contribution to the top ten.

Overall, it is evident that Calgary has attracted headquarters from a subset of all resource, manufacturing, and service subsectors. This observation leads to the question as to why these particular subsectors are attracted to Calgary. Is there some common feature among the headquarters of Calgary, versus those headquarters that are located in Toronto and Montreal? The research premise focuses on this question.

TABLE 2 Calgary's Headquarters Community by Sector and Subsector, 1990

TABLE 3 Ten Largest Companies Headquartered in Calgary, 1990

Premise

Based on the assertions of the resource dependence perspective and the general summary data presented above, the study shifts to investigate the dynamic relationship between Calgary's headquarters community and the Canadian economy. In particular, the study attempts to clarify the reasons why headquarters from some subsectors overwhelmingly locate in the core of the nation, while yet others tend more towards headquarters locations in the cities of the periphery. The study has already shown that petroleum headquarters are disproportionately concentrated in Calgary. Does the clustering of petroleum and other headquarters in Calgary have meaning for the understanding of headquarters location in a more general sense? How do headquarters in Calgary differ from those in Toronto and Montreal? Application of the resource dependence perspective can give insight into these issues.

Consistent with the earlier development of resource dependency's application to headquarters location, not all companies want or need to locate their headquarters in the Canadian heartland. As Quante (1976) showed, some companies actively seek to locate their headquarters in regional centres, while others demand a location in the national centre. Many companies located in the national core appear to have strong reasons for being there, rooted in the dynamic elements of the business environment present in such a place. Conversely, other companies with different linkage needs find fewer benefits from a headquarters location in the national core. Following from these concepts, the study examines the premise that, from 1970 to 1990, "Calgary's headquarters community was dominated by companies in declining subsectors of the Canadian economy". From the resource dependence perspective, companies in slow-growing or declining subsectors have less need for the kind of business connections to be found in the national core and, instead, find that they are better able to conduct business from a headquarters located in a peripheral centre of importance to their subsector. Thus, a city in the periphery with high accessibility to resources, markets, or technologies of importance to companies in such a subsector is a candidate to receive headquarters relocations in the subsector from major core centres.

Results

The study, with the use of the corporate data base defined earlier, develops a picture of the dynamic structure of the Canadian economy. Table 4 depicts the changing composition of the Canadian economy by subsector from 1970 to 1990. This table ranks the resource, manufacturing, and service subsectors by their change in size as a percentage of the three sectors combined between 1970 and 1990. The largest decliners appear at the top of the table. The mining, retail, metals, and food subsectors represent the component that declined the most relative to the rest of the Canadian economy. By contrast, the four largest gainers, business services, miscellaneous services, communications, and pharmaceuticals, appear at the bottom. These subsectors represent the most rapidly-growing portion of the Canadian economy.

With this definition of growing and declining subsectors in place, the study partitions companies headquartered in Calgary into growing and declining subsectors. It is in this disaggregation of sectors that the most important results of the study appear.

TABLE 4 Change in Subsector Size, 1970-1990

Figure 1 graphs the changing headquarters of Calgary as a percentage of the total revenues in the resource, manufacturing, and service sectors combined. The figure reflects the rapid growth of Calgary as a headquarters centre through the 1970s and early 1980s, as well as a period of retraction and slow recovery through the mid- and late-1980s. It also shows that the majority of Calgary's headquarters through this entire period have been associated with the declining component of the economy. Between 1970 and 1990, Calgary's headquarters in declining subsectors grew from 2.9%, of the three major sectors combined, to 6.8%. At the same time, Calgary's headquarters in the expanding component of the economy grew from 0.3% of the national total in 1970 to 1.4% in 1990. While growth in expanding subsectors outpaced growth in declining subsectors, the importance of headquarters in declining subsectors is clear. The figure shows that, as expected, the petroleum subsector, along with chemicals and retailing, has been an important component of Calgary's headquarters growth in recent years. Declining subsectors have maintained their importance in Calgary through the entire 1970-1990 period.

FIGURE 1 Calgary's Headquarters, 1970-1990

A look at the cities experiencing the greatest growth in each subsector from 1970-1990 further reinforces the trends illustrated above. Table 5 shows that of the twenty subsectors, Calgary's headquarters community led all Canadian cities in growth in four subsectors. Out of these four subsectors, three belonged to the declining component of the economy: retail, chemical, and petroleum. Only in the transportation subsector did Calgary lead the country in growth among expanding subsectors.

A wider examination of this table further reinforces a resource dependence interpretation of the implications of core-periphery structure for headquarters location in Canada. Of the nine declining subsectors, cities outside of the core

experienced the greatest headquarters growth in five. An additional two subsectors, food and metal, experienced the most growth in core cities other than Toronto and Montreal. Only in forestry and textiles did Toronto and Montreal lead in growth among declining subsectors.

TABLE 5 Largest Headquarters City Gains by Subsector, 1970-1990

These results illustrate the order that exists in the evolving system of headquarters cities in Canada. As depicted in the introductory sections of the paper, there is a definite core-periphery structure in the location of headquarters for the Canadian economy as a whole.

However, at a deeper level, it is evident that not all components of the economy follow this overall structure. The case study of Calgary shows that it is possible for centres in the periphery to play an important role within select subsectors of the economy. In Calgary's case, this role is most prominent in selected declining subsectors of the economy. However, the city also experienced substantial growth in the transportation subsector, a rapidly-growing component of the economy. These results and their interpretation leave us with a number of implications for the further development of quaternary location theory.

Discussion and Conclusion

This investigation has highlighted the changing composition of Calgary's headquarters. It has also suggested a theoretical basis for understanding such change. During the period 1970-1990, Calgary attracted the headquarters of companies from subsectors that were declining relative to other subsectors of the Canadian economy. The growth of the petroleum and chemical subsectors as dominant components of Calgary's headquarters community exemplifies the city's role as a peripheral headquarters centre. The results relating to Calgary's headquarters community as a whole reflects the manner in which declining subsectors dominate the headquarters community of this peripheral centre, while rapidly-growing subsectors remain a relatively small fraction of all head-quarters in Calgary.

Disaggregating the economy into its component sectors and subsectors yields a number of insights into the factors that influence corporate headquarters location in Canada. The case study based on this disaggregation demonstrates that Calgary, as a peripheral centre, has attracted headquarters primarily from the declining subsectors of the economy. In Calgary's case, declining subsectors account for 82.4% of the revenues associated with the city's headquarters in 1990. Supplementary results, relating to subsectoral growth by headquarters city, place these findings in a national context, showing an overall tendency for cities in the periphery, and core cities other than Toronto and Montreal, to dominate headquarters city growth in declining subsectors over the 1970-1990 period. These results also show that Toronto and Montreal led growth in virtually all expanding subsectors through the same period.

Such findings demonstrate the importance of subsectoral disaggregation for headquarters location research. While overall trends certainly do exist, and are illustrated for Canada by a variety of studies (Semple 1977, 1996; Rice and Semple 1993), it is the study of individual subsectors of the economy that holds an important key to headquarters location explanation. The headquarters success of nationally-dominant centres such as Toronto and Montreal, as well as the successes of other headquarters centres throughout the country, may be better understood through a detailed investigation of headquarters location by sector and subsector.

Headquarters location investigation by subsector is valuable and necessary, but it is by no means the only fruitful area for future research identified by this paper. As already stated, a strong link exists between quaternary activities and producer services. Although this

paper has emphasized the location of headquarters, the resource dependence perspective and the core-periphery geographic structure highlighted in this work also have implications for the location of high-order services and other economic activities. Further research needs to be undertaken to investigate the nature of the relationship between corporate headquarters in the various sectors of the economy and other elements of the business environment. As well, more needs to be done in developing conceptualizations of the environment that more accurately reflect reality. Advancement in our knowledge of inter-firm connections and in our conceptualization of the geographic structure of the business environment is a worthy goal that has the potential to aid in the continuing effort to better understand the location of many of the highest-order economic activities.

References

- Christopherson, S. 1989. "Flexibility in the U.S. Service Economy and the Emerging Spatial Division of Labour". *Transactions of the Institute of British Geographers*, 14: 131-143.
- Code, W.R. 1991. "Information Flows and Processes of Attachment and Projection: The Case of Financial Intermediaries", in S.D. Brunn and T.R. Leinbach (eds.). *Collapsing Space and Time: Geographic Aspects of Communication and Information*. London: Harper-Collins.
- Coffey, W.J. and M. Polèse. 1989. "Producer Services and Regional Development: A Policy-Oriented Perspective". *Papers of the Regional Science Association*, 67: 13-27.
- Daniels, P.W. 1991. *Services and Metropolitan Development*. London: Routledge.
- Dunn, E.S. 1956. *The Location of Agricultural Production*. Gainesville: University of Florida Press.
- Edgington, D.W. 1989. "Foreign Multinationals in Australian Cities and Regions", in B. Higgins and K. Zagorski (eds.). *Australian Regional Development: Readings in Regional Experiences, Policies and Prospects*. Canberra: Australian Government Publishing Service.
- Friedmann, J. 1973. *Urbanization, Planning, and National Development*. Beverly Hills: Sage Publications.
- _____. 1975. "The Spatial Organization of Power in the Development of Urban Systems", in J. Friedmann and W. Alonso (eds.). *Regional Policy*. Cambridge: MIT Press.

- Gad, G. 1985. "Office Location Dynamics in Toronto: Suburbanization and Central District Specialization". *Urban Geography*, 6: 331-351.
- _____. 1991a. "Office Location", in T. Bunting and P. Filion (eds.). *Canadian Cities in Transition*. Toronto: Oxford University Press.
- _____. 1991b. "Toronto's Financial District". *The Canadian Geographer*, 35: 203-207.
- Green, M.B. 1985. "Canadian Corporate Joint Venture Activity, 1971-1981: Aggregate Patterns". *Urban Geography*, 6: 352-369.
- _____. 1990. *Mergers and Acquisitions: Geographical and Spatial Perspectives*. New York: Routledge.
- _____. 1993. "Institutional Stock Ownership in the U.S.". *Annals of the Association of American Geographers*, 83: 66-89.
- Green, M.B. and R.B. McNaughton. 1989. "Canadian Interurban Merger Activity, 1962-1984". *The Canadian Geographer*, 33: 253-264.
- Green, M.B. and Semple, R.K. 1981. "The Corporate Interlocking Directorate as an Urban Spatial Information Network". *Urban Geography*, 2: 148-160.
- Holloway, S. and J.O. Wheeler. 1991. "Corporate Headquarters Relocation and Changes in Metropolitan Dominance, 1980-1987". *Economic Geography*, 67: 54-74.
- Holz, J.M. 1977. "The Distribution of Business Headquarters and Command Powers in Towns in the Federal German Republic". *Mosella*, 7: 229-258.
- Kirn, T.J., R.S. Conway and W.B. Beyers. 1990. "Producer Services Development and the Role of Telecommunications: A Case Study in Rural Washington". *Growth and Change*, 21: 33-50.
- Ley, D.F. and T.A. Hutton. 1987. "Vancouver's Corporate Complex and Producer Services Sector: Linkages and Divergence Within a Provincial Staple Economy". *Regional Studies*, 21: 413-424.
- _____. 1991. "The Service Sector and Metropolitan Development in Canada", in P.W. Daniels (ed.). *Services and Metropolitan Development: International Perspectives*. New York: Routledge.
- Lord, J.D. 1987. "Interstate Banking and the Relocation of Economic Control Points". *Urban Geography*, 8: 501-519.
- _____. 1992. "Geographic Deregulation of the U.S. Banking Industry and Spatial Transfers of Corporate Control". *Urban Geography*, 13: 25-48.

- Lösch, A. 1954. *The Economics of Location*. New Haven: Yale University Press.
- Martz, D.J.F. and R.K. Semple. 1985. "Hierarchical Corporate Decision-Making Structure Within the Canadian Urban System: The Case of Banking". *Urban Geography*, 6: 316-330.
- McCann, L.D. 1987. "Heartland and Hinterland: A Framework for Regional Analysis", in L.D. McCann (ed.). *Heartland and Hinterland: A Geography of Canada*. Toronto: Prentice-Hall.
- McCann, L.D. and P.J. Smith. 1991. "Canada Becomes Urban: Cities and Urbanization in Historical Perspective", in T. Bunting and P. Fillion (eds.). *Canadian Cities in Transition*. Toronto: Oxford University Press.
- Michalak, W.Z. and K.J. Fairbairn. 1988. "Producer Services in a Peripheral Economy". *Canadian Journal of Regional Science*, 11: 353-372.
- O'Connor, K. and D.W. Edgington. 1991. "Producer Services and Metropolitan Development in Australia", in P.W. Daniels (ed.). *Services and Metropolitan Development: International Perspectives*. London: Routledge.
- Ó hUallacháin, B. 1989. "Agglomeration of Services in American Metropolises". *Growth and Change*, 20: 34-49.
- Palmer, D., R. Friedland and J. Singh. 1986. "The Ties That Bind: Organizational and Class Bases of Stability in a Corporate Interlock Network". *American Sociological Review*, 51: 781-796.
- Pennings, J. 1980. *Interlocking Directorates*. San Francisco: Jossey-Bass.
- Pfeffer, J. 1987. "A Resource Dependence Perspective on Intercorporate Relations", in M.S. Mizruchi and M. Schwartz (eds.). *Intercorporate Relations: The Structural Analysis of Business*. New York: Cambridge University Press.
- Pfeffer, J. and G. Salancik. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
- Pred, A. 1977. *City-Systems in Advanced Economies*. London: Hutchinson & Co.
- Quante, W. 1976. *The Exodus of Corporate Headquarters from New York City*. New York: Praeger.
- Rice, M.D. and R.K. Semple. 1993. "Spatial Interlocking Directorates in the Canadian Urban System, 1971-1989". *Urban Geography*, 14: 375-396.

Sayer, A., and R. Walker. 1992. *The New Social Economy: Reworking the Division of Labour*. Oxford: Blackwell.

Semple, R.K. 1973. "Recent Trends in the Concentration of Corporate Headquarters". *Economic Geography*, 49: 309-318.

_____. 1977. "The Spatial Concentration of Domestic and Foreign Multinational Corporate Headquarters in Canada". *Cahiers de Géographie du Québec*, 21: 33-51.

_____. 1985. "Toward a Quaternary Place Theory". *Urban Geography*, 6: 286-296.

_____. 1994. "The Western Canadian Quaternary Place System". *Prairie Forum* 12: 81-100.

_____. 1995. "Quaternary Places in Canada", in J.N.H. Britton, (ed.). *The Canadian Space Economy*. Montreal: McGill-Queen's Press.

Semple, R.K. and M.D. Rice. 1994. "Canada and the International System of Bank Headquarters Cities, 1968-1989". *Growth and Change*, 25: 25-50.

Semple, R.K. and W.R. Smith. 1981. "Metropolitan Dominance and Foreign Ownership in the Canadian Urban System". *The Canadian Geographer*, 25: 4-26.

Semple, R.K. and M.B. Green. 1983. "Interurban Corporate Headquarters Relocation in Canada". *Cahiers de Géographie du Québec*, 27: 389-406.

Stabler, J.C., and E.C. Howe 1993. "Services, Trade, and Regional Structural Change in Canada 1974-1984". *Review of Urban and Regional Development Studies*, 5: 29-50.

Statistics Canada. 1988. *National Income and Expenditure Accounts, Annual Estimates 1926-1986*. Catalogue 13-531. Ottawa: Statistics Canada.

_____. 1992a. *Canadian Economic Observer*. Catalogue 11-010 Monthly (January). Ottawa: Statistics Canada.

_____. 1992b. *Canadian Economic Observer*. Catalogue 11-010 Monthly (April). Ottawa: Statistics Canada.

Strickland, M. and D. Aiken. 1984. "The Headquarters City System of Germany". *Economic Geography*, 60: 164-180.

Thünen, J.H. von. 1826. *The Isolated State*. Hamburg: Perthes.

Weber, A. 1929. *Theory of the Location of Industry*. Translated by C.J. Friedrich. Chicago: University of Chicago Press.

Wheeler, J.O. 1988. "The Corporate Role of Large Metropolitan Areas in the United States". *Growth and Change*, 19: 75-86.

Wheeler, J.O. and P.M. Dillon. 1985. "The Wealth of the Nation: Spatial Dimensions of U.S. Metropolitan Commercial Banking, 1970-1980". *Urban Geography*, 6: 297-315.

Wheeler, J.O. and R.L. Mitchelson. 1989. "Information Flows Among Major Metropolitan Areas of the United States". *Annals of the Association of American Geographers*, 79: 523-543.

Yeates, M. 1985. "The Core/Periphery Model and Urban Development in Central Canada". *Urban Geography*, 6: 101-121.

_____. 1991. "The Windsor-Quebec Corridor", in T. Bunting and P. Filion (eds.). *Canadian Cities in Transition*. Toronto: Oxford University Press.

Endnotes

1. The term resource in this context includes natural resources, financial resources, markets, sources of skilled employees, centres of governmental regulation, and anything else of importance to the firm's operations that is outside of the direct control of the business.

2. The author would like to thank Keith Semple of the Department of Geography, University of Saskatchewan, for the use of his corporate database in this research.

3. This paper has chosen to associate all corporate revenues with the headquarters city of each company. Most previous headquarters location studies have taken the same approach (Semple and Rice 1994; Holloway and Wheeler 1991), but some have not (Martz and Semple 1985). To use the Martz and Semple (1985) approach, in-depth information defining the decision-making structure of each company studied must be available. This is not the case for the vast majority of companies included in this research.

4. In 1990, Canada's five largest headquarters cities in resources, manufacturing, and services were: Toronto (42.2% of national revenues in the three sectors), Montreal (21.6%), Calgary (8.4%), Vancouver (5.6%), and Winnipeg (3.4%). Calgary was also one of the most rapidly growing headquarters centres between 1970 and 1990 (an increase of 62% over the period).

5. It may seem obvious that the headquarters of resource companies ought to be located close to their natural resource base. However, this is not always the case. For example, although Canada's petroleum headquarters are presently closely associated with Calgary, this is a relatively recent phenomenon. In 1970, Calgary's headquarters community accounted for 23% of the revenues of all petroleum companies in Canada, while

Toronto's headquarters community accounted for 66%. By 1990, the situation had almost reversed: Calgary had 59% and Toronto, 33%.

TABLE 1 Headquarters in Core and Peripheral Centres of Canada, 1990

Sector	Subsector	Major Core Centres (%) ¹	Major Peripheral Centres (%) ²	Subsector Size (%) ³
Resource	Mining	64.7	29.3	3.2
	Petroleum	33.3	61.3	8.2
Manufacturing	Chemical	55.3	28.0	3.3
	Electrical	85.9	0.8	3.6
	Food	62.9	5.0	7.0
	Forestry	56.7	23.8	5.6
	Machinery	84.1	0.0	3.3
	Metal	70.7	0.9	4.6
	Miscellaneous	51.1	34.6	1.3
	Pharmaceutical	97.4	0.0	1.6
	Transport Equip.	52.8	3.9	10.3
	Textile	93.1	0.0	1.3
Service	Business Service	81.8	12.0	2.1
	Communication	77.5	10.6	8.4
	Construction	48.6	35.2	2.9
	Co-operatives	32.1	32.5	2.8
	Miscellaneous	71.8	15.1	3.1
	Retail	78.6	13.7	12.0
	Transportation	73.7	20.7	6.1
	Wholesale	53.3	35.6	9.4

Note:

1. Percent of total revenues in the subsector administered from headquarters in Toronto and Montreal.
2. Percent of the total revenues in the subsector administered from headquarters in Vancouver, Calgary, Edmonton, and Winnipeg.
3. Size of subsector as a percent of the total revenues of the Canadian resource, manufacturing and service sectors combined.

TABLE 2 Calgary's Headquarters Community by Sector and Subsector, 1990

Sector	Subsector	Proportion of City's Headquarters(%) ¹
Resource	Petroleum	57.6
Manufacturing	Chemicals	9.4
Service	Retailing	8.7
Service	Transportation	7.1
Service	Co-operatives	4.5
Service	Construction	4.2
Service	Wholesaling	4.0
Manufacturing	Food	2.1
Service	Misc. Service	1.1
Service	Business Service	1.0
Manufacturing	Forestry	0.4

Note:

1. The subsector's share of the total revenues administered from Calgary's headquarters.

TABLE 3 Ten Largest Companies Headquartered in Calgary, 1990

Company	Sector	Subsector	Revenues in 1990 (\$Millions)
Shell Canada	Resource	Petroleum	5,508
PetroCanada	Resource	Petroleum	5,317
Nova	Manufacturing	Chemical	4,736
Amoco Canada	Resource	Petroleum	4,444
Canada Safeway	Service	Retailing	4,218
Total Petroleum	Resource	Petroleum	3,179
PWA	Service	Transportation	2,745
Mobil Oil Canada	Resource	Petroleum	1,872
Alberta Wheat Pool	Service	Co-operatives	1,228
Chevron Canada Resources	Resource	Petroleum	1,057
Total for Top Ten			34,304
Total for Calgary			50,611

TABLE 4 Change in Subsector Size, 1970-1990

Subsector	Size in 1970 ¹ (%)	Size in 1990 ¹ (%)	Change ² (%)
Mining	5.40	3.17	-70.3
Retail	19.73	12.00	-64.4
Food	10.17	7.04	-44.4
Metal	5.94	4.64	-28.0
Chemical	4.18	3.29	-27.0
Forestry	7.03	5.63	-24.9
Construction	3.44	2.90	-18.6
Textile	1.49	1.31	-13.7
Petroleum	8.35	8.20	-1.8
Transportation Equipment	9.96	10.29	+3.2
Machinery	3.06	3.27	+6.4
Co-operatives	2.43	2.77	+12.3
Electrical	3.14	3.61	+13.0
Transportation	4.94	6.09	+18.9
Wholesale	5.67	9.41	+39.7
Misc. Manufacturing	0.63	1.33	+52.6
Pharmaceutical	0.67	1.55	+56.8
Communication	3.19	8.36	+61.8
Misc. Service	0.52	3.05	+83.0
Business Service	0.05	2.09	+97.6

Note:

1. Size as a percent of total revenues in the Canadian resource, manufacturing, and service sectors combined.
2. Change is the difference between the 1970 and 1990 size values, expressed as a percent of the 1990 value.

TABLE 5 Largest Headquarters City Gains by Subsector, 1970-1990

Subsector	Subsector Size ¹ Change (%)	City With Largest Headquarters Gain	Gaining City ² Change (%)
Mining	-70.3	Saskatoon	0.12
Retail	-64.4	Calgary	0.69
Food	-44.4	London	0.39
Metals	-28.0	Hamilton	0.16
Chemical	-27.0	Calgary	0.69
Forestry	-24.9	Toronto	0.40
Construction	-18.6	Edmonton	0.38
Textiles	-13.7	Montreal	0.02
Petroleum	-1.8	Calgary	3.99
Transport Equip.	+3.2	Toronto	0.99
Machinery	+6.4	Toronto	0.24
Co-operatives	+12.3	Montreal	0.59
Electrical	+13.0	Toronto	1.19
Transportation	+18.9	Calgary	0.50
Wholesale	+39.7	Toronto	2.77
Misc. Manufac.	+52.6	Toronto	0.28
Pharmaceutical	+56.8	Toronto	0.68
Communication	+61.8	Montreal	2.45
Misc. Service	+83.0	Toronto	1.46
Business Service	+97.6	Toronto	1.47

Note:

1. This column comes directly from Table 4.

2. Change is the difference between the 1970 and 1990 sizes of the city's headquarters in the subsector as a percentage of the non-financial sectors as a whole.

