

Producer Services in a Peripheral Economy*

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Introduction

Regional disparities and regional differences in economic development are inherently spatial problems (Richardson 1978). There are a number of economic theories that attempt to explain uneven development in terms of staples, productivity, and movement of goods and capital. One of these, the core/periphery framework, has been used frequently by economists (Savoie 1986; Ruggeri 1987) and geographers (Bourne and Simmons 1978; Simmons 1979; McCann 1987) to explain economic disparities in Canada. This framework is used here to examine the trade of producer services in a peripheral city, Edmonton. There is no attempt to evaluate the core/periphery framework as a whole; rather, its explanatory potential with respect to the interregional trade of producer services is assessed. We show that the trade of producer service firms based in Edmonton is more spatially diversified than is implied by the core/periphery paradigm.

Producer services have been selected because they are becoming, along with the consumer service and finance, insurance, and real estate (FIRE) sectors, increasingly important sources of employment in Canada. There is also growing empirical evidence and theoretical consensus that producer services play an important role in promoting regional development (Coffey 1987). The principal role of producer services is to integrate and "bind" together the increasingly differentiated, specialized parts and functions of the market system (Stanback et al. 1981). Accordingly, greater attention should be focused upon interregional and international trade in these services, and upon their

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ability to attract, reinforce, and generate economic activity in other sectors. The contribution and role of producer services are particularly important for peripheral economies. There is an ongoing debate as to the impact of these activities on local economies.

The investigation reported in this paper is structured around the issues discussed above. A survey of Edmonton's producer services sector is used to investigate three of these issues. More specifically, the aim of the investigation is to identify:

1. Exports of producer services. A large proportion of the total revenue generated by producer service firms comes from sales outside local markets. In other words, the flows of producer services do not support the core/periphery assumption that the direction of these flows is confined to the surrounding hinterland of peripheral cities. The average proportion of the export sales varies with the number, size, and diversification of firms in a particular city. Empirical studies to date show that the exports of producer services account for approximately 50 percent of sales in the Central Puget Sound region (Beyers and Alvine 1985), and 20 percent in Metro Vancouver (Ley and Hutton 1987).

2. Degree of exports by type of service. The average proportion of export sales is sector dependent. That is, export revenue varies between different types of services. It is unlikely that all producer services have the same characteristics in terms of their export potential as well as their degree of local ownership and control. It is therefore important to determine the exact role of each subsector in the local economic base.

3. Intersectoral sales of producer services. The majority of research in this area suggests that the producer services sector is strongly tied to the goods producing sectors. The growing demand for services from manufacturing and mineral industries has often been pointed to as the principal reason for the very fast growth of the producer services sector. However, it is an oversimplification to view the role of producer services as merely responding to demand from these industries. A more detailed investigation of market ties to other sectors is essential for a better understanding of the complex factors that led to the recent growth of the producer services sector.

Producer Services

According to the traditional core/periphery framework developed by Myrdal (1957), Hirschman (1958), and Friedmann (1966; 1973), the national space economy is a system in which the core innovates and the flow of such innovations is from the core to the periphery. This

ability to innovate includes social, managerial, and technological inventions that foster increased productivity (Friedmann 1973; Richardson 1978). These innovations are possible through the concentration of financial, administrative, and political resources in the core. The core has, therefore, the resources to direct, regulate, and coordinate business activities in the periphery. As a result, peripheral cities are characterized by high numbers of branch plants and branch offices of multi-branch establishments whose head offices are located in the core cities. Dominance in the national urban system is thus related to the degree of economic and business control that emanates from an urban centre to regional centres farther down the urban hierarchy, mostly through branch establishments (Semple 1987). In short, the core determines economic development in the periphery.

Producer services are central to economic development because they are, in a broad sense, innovations. First, they are by all accounts a young economic activity, since most of these services were not considered as specialized until the post-war period. Second, some specialized producer services, such as research and development laboratories, management consulting, engineering consulting, and computer services, are unquestionably technologically innovative.

Producer services can be viewed as "institutional" or "structural" innovations in that they introduce new or innovative ways of mediating control and of distributing goods and services to other sectors of the economy. Producer services are, therefore, intermediate services. An overwhelming proportion of their sales is to other businesses, not final consumers. In the past, many of these services were carried on "in-house", within head offices of large enterprises. What is *innovative* is the specialized organization of producer services in separate firms, which integrate different sectors of the economy into a more efficient economic complex. "The *innovation* here is the creation and spread of a new market and the growth and location of new economic specializations to satisfy that market" (Bears 1978, 564).

Producer services not only play an intermediate role within the economic system but also perform control functions. They participate in and execute planning, decision-making, and innovating (in a technological sense), and control production in other sectors of the economy. It can be expected, therefore, that producer services, in exercising control over peripheral economies, will be controlled by corporate complexes located in the core regions of Ontario and Quebec, and the direction of interregional trade of producer services will be from the core to the periphery.

Trade of Producer Services

The trade of producer services reveals the flows of the producer services within the national core/periphery system. Selected results from a study of Edmonton-based firms providing producer services indicate that Edmonton-based producer services export some of their output beyond the surrounding local areas. This suggests that the capital, technology, and corporate strategies of firms located in Edmonton are being exported beyond the city's traditional periphery. Results also show that local demand for producer services is supplied largely by firms located in Edmonton rather than from the industrial core of Canada. A re-examination is therefore needed of the role producer services play in the regional development of peripheral economies.

There is a considerable literature on the trade of goods in different industries, with the focus on primary and secondary industries, where interregional and international trade constitutes the economic base of industrialized regions. There is also a smaller but significant literature addressing the problem of trade in services generally, and producer services in particular.

Beyers and Alvine (1985) summarized the literature on the trade of producer services. There are two perspectives on the role and geographic distribution of this trade. The traditional school regards interregional trade in most services as an insignificant activity secondary to the more important goods-producing sectors. The spatial pattern of trade in the producer services sector is governed by central place theory principles, Figure 1. The trade of various services, including producer services, is from the large urban centres down to lower levels of the urban hierarchy. According to this view, assuming equal comparative advantage among cities, it can be expected that trade in producer services, if any, at lower levels of the urban hierarchy will be local in nature. Cities in peripheral regions, in particular, will be characterized by sales exclusively to surrounding areas. In other words, the flow of producer services should be from the higher level regional centres down to the lower levels of the urban hierarchy. The direction of the producer services flows may depend, to a large degree, on the channel of trade and organizational arrangements within multisite firms. Coffey and Polèse (1987) demonstrated that in addition to direct inter-firm trade of producer services, intra-firm channels are often used in order to reduce total production costs. In the latter case, it is the vertical organization of a multibranch firm rather than the hierarchical structure of the urban system that determines the direction of the flows. This paper, however, focuses specifically on the pattern of trade between urban centres (inter-firm trade) of the national system.

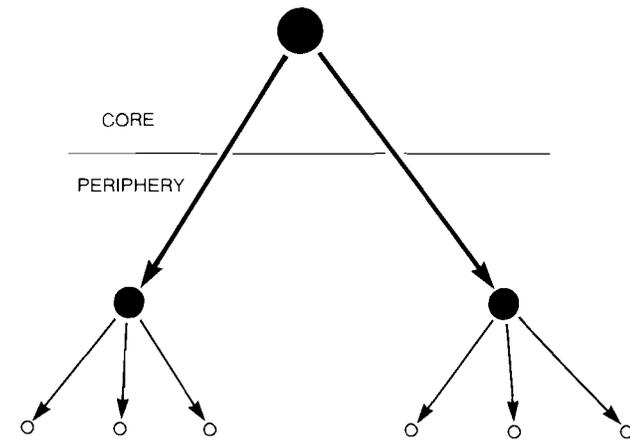


Figure 1
SCHEMATIC PRESENTATION OF HIERARCHICAL
TRADE FLOWS OF PRODUCER SERVICES

The second perspective introduces a new framework for the interpretation of the trade of producer services. According to Pred (1977), Noyelle and Stanback (1984), Beyers and Alvine (1985), and Coffey and Polèse (1987), the pattern of interregional trade of producer services does not necessarily follow a hierarchical structure of the system of cities, Figure 2. Instead, services, particularly producer services, are traded between places of the same size, from lower to higher level urban centres, and the trade is not necessarily with the nearest centres in the surrounding region. Producer services are at present an important element in the economic base of large peripheral cities. They play a key role in the process of regional economic development, because they create an economic environment capable of attracting other industries (Coffey 1987). Marshall concluded that the survival and development of peripheral industries that attempt to adjust to the quickly changing economic conditions is related, to a degree, to the quality and quantity of service inputs (see Daniels 1984, 123). They may help, in effect, ". . . to adapt skills, attitudes, products and processes to changes, or to reduce the structural, organizational and informational barriers to adjustment" (Marshall 1982, 5).

The survey of producer service firms in the Central Puget Sound region completed by Beyers and Alvine (1985) indicated that service sectors had significant trade markets in larger metropolitan regions in the United States. The linkages found were contrary to the central place framework. Many producer services sectors had an externally and spatially diverse income base.

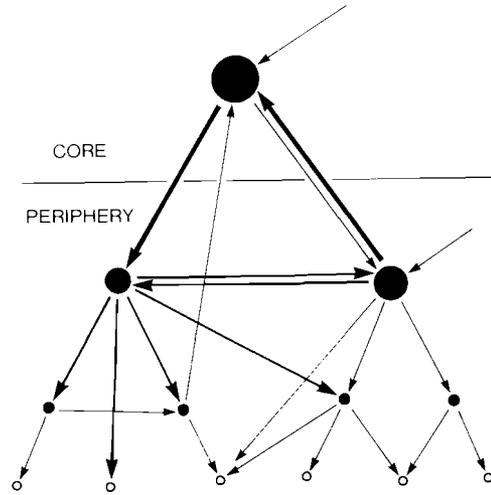


Figure 2

SCHEMATIC PRESENTATION OF NON-HIERARCHICAL TRADE FLOWS OF PRODUCER SERVICES

Furthermore, the survey research reported by Beyers and Alvine suggested strong market ties within the service complex itself. More than half of the transactions were with other service firms or with the public sector. Their results demonstrated that growth of trade in producer services was not primarily associated with the growing demand from the goods-producing sectors. Rather, the growth was related to intra-sectoral demand in the service sector itself and demand from the public sector.

Canadian Research on Trade in the Producer Services Sector

Coffey and Polèse (1987) calculated location quotients for producer services in the Canadian urban system. On that basis they estimated the "export employment" of producer services in individual urban areas. The export employment indicates the estimated number of workers over and above the national average for all cities engaged in producing output exported beyond the local area. As such, the export employment shows the direction of producer services flows within the urban system. Cities with high levels of export employment can be expected to be the control centres of the system of cities. Cities with low levels of producer services export employment are the dependent or peripheral centres. Thus, the region traditionally recognized as Canada's industrial core, Toronto and Montreal, should control the entire trade in producer services in Canada. The direction of exports

should be from these two cities to cities down the urban hierarchy. From this perspective the results of Coffey and Polèse are revealing, Table 1.

Table 1
EXPORT EMPLOYMENT OF PRODUCER SERVICES IN THE CANADIAN URBAN SYSTEM, 1981

Sector	Core Toronto Ottawa Montreal	Periphery Calgary Vancouver Edmonton	Total
Employment services	74.8	19.9	94.7
Computer services	85.6	13.6	99.2
Accounting services	55.1	34.7	89.8
Advertising services	96.8	3.2	100.0
Architectural design	27.2	64.9	92.1
Engineering consulting	12.4	79.2	91.6
Legal services	59.3	33.5	92.8
Management services	61.9	38.1	100.0
Total	59.2	35.3	94.5

Source: Coffey and Polèse (1987, 608) (modified).

Almost all producer services export employment, 94.5 percent, was concentrated in just six large metropolitan areas. The cities located in the industrial core of Canada contributed 59.2 percent; the remaining cities 35.3 percent. Although the core provided over half of the export employment of producer services, peripheral cities contributed more than one-third of the whole interregional trade in Canada. In other words, the estimates of Coffey and Polèse do not support the thesis that the *entire* trade of producer services is from the core to the periphery. These results indicate that the Western periphery achieved a significant level of autonomy. However, the results have to be treated cautiously due to the limitations inherent in all measures of concentration.

There were significant intrasectoral differences in the distribution of export employment of producer services between the core and the periphery. The periphery had much higher export employment in engineering consulting and architectural design services. Also, a significant proportion of export employment in management consulting, almost 40 percent, was in the periphery. These results led Coffey and Polèse to assume that, contrary to the core/periphery framework,

Toronto-based head offices have often imported engineering services from peripheral cities.

A recent survey of Vancouver-based producer service firms by Ley and Hutton (1987) provided some support for the generalizations proposed by Beyers and Alvine (1985), and by Coffey and Polèse (1987). According to Ley and Hutton, some 70 percent of output by value occurred with customers in Vancouver itself. The rest of the province of British Columbia accounted for only 12 percent of the trade of producer services. Considerably more important were markets for producer services located outside British Columbia; 17 percent of the trade was outside the province (Coffey and Polèse's estimate: 12.9 percent). The most active exporters were engineering consulting firms, which exported 32 percent of their output to the United States, 15 percent to Europe, and 11 percent to East and South-East Asia. The geographic distribution of markets among the firms was related strongly to their size as well as to the category of services offered. Larger firms were disproportionately represented by engineering and real estate consultants.

The Case of Edmonton

Before the findings concerning the producer services sector in Edmonton are evaluated, the survey data as well as main characteristics of the sector in Edmonton will be discussed.

Survey Data

A survey of producer service firms was conducted in Edmonton between December 1987 and April 1988. It was impossible to contact all producer service establishments in Edmonton. The survey, therefore, focused on selected types of services rather than on a small number of establishments in all producer services. The following producer services were selected: advertising and marketing, employment agencies, computer and data processing services, management and public relations consultants, legal services, engineering consultants, architects, and accountants, auditors, and bookkeepers.

The list of establishments was compiled using the Yellow Pages directory (1987), Dun & Bradstreet data base (1987), and Contacts Influential directory (1987). The total of 1,676 businesses was aggregated. A sample population of 816 establishments was selected by means of stratified sampling, following recommendations by Sudman (1976). All 816 establishments were contacted either in person (138) or by telephone (678). Of the 816, 374 agreed to participate in the sur-

vey. A total of 173 usable questionnaires were processed. This represents an overall return rate of 46.3 percent.

All of the firms in the sample were located within the Edmonton CMA. There was substantial variation in the intra-metropolitan location of certain types of firms. Almost all advertising, employment, legal, and accounting firms were located within the downtown corporate complex. Most management and public relations firms were located in the downtown, as were the branches of large computer and data processing firms. However, engineering consulting firms, as well as offices of architects, were located predominantly outside the CBD. All engineering consulting firms were located in industrial parks situated in the suburbs of Edmonton. Architectural firms were the most irregularly located. Many of these firms were operating from detached residential houses converted into professional offices. Some of these firms, particularly very small ones, were operating from architects' private residences. Smaller ventures, especially those locally owned, were situated within inner-city neighborhoods.

The majority of firms located in the downtown were oriented towards local trade. Those firms located at suburban sites, particularly engineering, had a large export component in their output linkages. Large office and laboratory space, necessary for their successful business operation, was the major locational constraint for these firms.

Producer Services Sector in Edmonton

In 1987 the majority of producer service firms in Edmonton were small independent offices. Over 92 percent of all establishments employed fewer than 26 employees. Only 7.9 percent employed more than 25 workers. There were no statistically significant intrasectoral differences in the distribution of service firms by size. Only engineering consulting had more than 10 percent of firms employing between 26 and 100 workers. The largest proportion of large firms, that is employing more than 100 workers, was in the computer and data processing services subsector, 2.3 percent.

The largest group of producer service firms in Edmonton was local offices (that is, independent local establishments that did not have any branches in, or outside, the local area), accounting for 76.2 percent of such firms in Edmonton in 1987. The second largest group was branch offices of larger firms controlled from outside Edmonton, 17.8 percent. The smallest group was head offices, 6.0 percent. This group of firms, although the least numerous, was the most important, since they had branch offices located outside the local market. In all, 82.2 percent of all producer service establishments were controlled by local entrepreneurs.

There were significant differences between sectors in terms of type of offices in Edmonton. The highest proportion of head offices was in engineering consulting, 8.7 percent. This subsector also had a significant proportion of branch offices, 15.7 percent. The highest proportion of branch offices was, however, in the computer service subsector. Almost one-third of all computer service firms in Edmonton were branches of large multinational firms whose head offices were located outside the local area; for example, IBM Canada, or Xerox Canada. Only a small proportion, 6.8 percent, of computer service firms were head offices. Thus, computer services in Edmonton were controlled to a substantial degree from the core areas of Central Canada (Christy and Ironside 1987).

The highest degree of local control was in the subsectors focused on the local market. Over 95 percent of all legal service firms were locally controlled. Nearly the same degree of local control was in accounting service firms, where only 5.5 percent of firms were branches. The small proportion of branch offices in this subsector does not necessarily reflect the share of the local market captured by branches of large multinational accounting firms located in Edmonton. Price Waterhouse, Peat Marwick, Touche Ross, or Deloitte's are examples. Exact data are difficult to obtain due to confidentiality of most of the records concerning the transactions of these companies; however, it can be assumed that to justify their presence in Edmonton these firms have a large share of the local market.

Exports of Producer Services

The major geographic market for Edmonton-based producer service firms was Edmonton itself, Figure 3. Over 63 percent of the total sales were made to other businesses located in Edmonton. The second largest market was the rest of Alberta, 27.2 percent, including over 7 percent of sales that went to Calgary. The proportion of sales made to Calgary shows that not all service outputs were sold to smaller centres surrounding Edmonton. Moreover, 9.1 percent of the sales were made outside the provincial market; almost 6 percent went to other regions of Canada, and 3.2 percent to foreign customers.

To summarize, Edmonton-based producer service firms exported in 1987 a substantial proportion of their output—over one-third—outside the local market. This indicates that Edmonton not only functions as a regional centre for Northern Alberta but also plays an important role in interregional trade of services in Canada. A significant proportion of the trade was with Calgary, supporting the alternative conceptualization of the trade in producer services. Thus, according to the results presented here, flows of producer services are directed not only to urban centres down the urban hierarchy but also

to centres of similar size. Also, a substantial proportion of revenues came from markets outside the province of Alberta. This supports the assumption outlined earlier that producer services can directly contribute to the local economy through interregional trade.

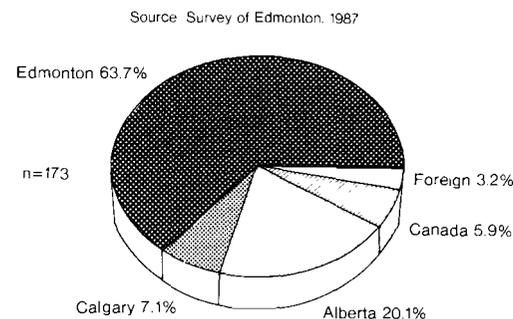


Figure 3
SALES OF PRODUCER SERVICE FIRMS BY GEOGRAPHICAL MARKETS, EDMONTON, 1987

Degree of Exports by Type of Service

The degree of export orientation varied between the different subsectors of producer services. There were two groups of producer services in terms of their export orientation, Figure 4.

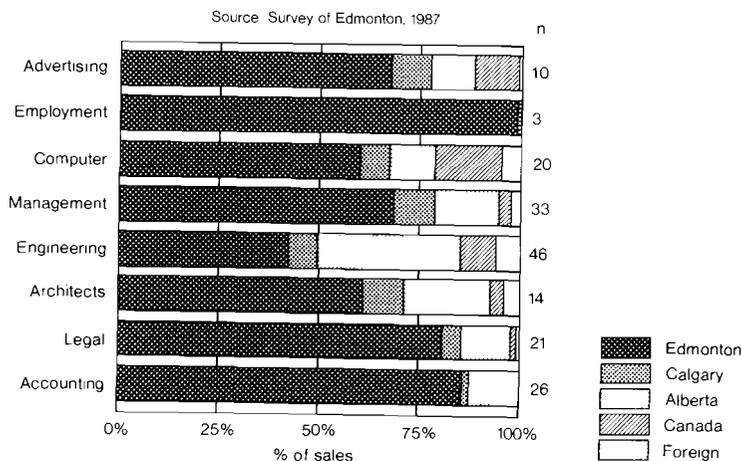


Figure 4
GEOGRAPHICAL MARKETS OF PRODUCER SERVICE FIRMS BY SERVICE CATEGORIES, EDMONTON, 1987

First, there were producer services focused on the local market. Examples include employment services, accounting, and legal services. In each case, the local market provided over 80 percent of their revenues. Only in the case of legal services did the rest of the revenue come from outside Edmonton, mostly from the Albertan hinterland.

The second group includes services with a large proportion of sales outside Edmonton. The largest sales outside the local market were made by engineering consulting firms, where 57.5 percent of the total revenue came from exports. The largest proportion of these sales were to Alberta: 35.9 percent. Calgary was also an important market, accounting for 7 percent of sales. The rest of Canada accounted for 8.8 percent of revenue, and foreign markets for 5.8 percent. Other services in the second group were architectural design, management consulting, computer services, and advertising services, all of which had substantial exports.

The western provinces (British Columbia, Saskatchewan, and Manitoba) were the most significant geographic market outside Alberta for all services in the second group except advertising services, which exported 9.7 percent of their output to Central Canada. The core of Canada was the second largest market only for computer service firms. All other subsectors in this group had significant linkages with the Northern Territories.

Edmonton-based producer services also had linkages with foreign customers. The largest foreign market was the United States, except for engineering services, which had a substantial proportion of its revenue coming from Western Europe, South-East Asia, the Caribbean, and South America. In general, foreign markets were important for the engineering consulting and computer service subsectors.

To examine any differences in export propensity and size of firms, Pearson's correlation coefficients were calculated. All correlation coefficients between number of employees and percent of export revenue were found to be not significant. Also the correlation coefficients between the number of employees in a firm and exports sales by geographical markets were not significant. Thus, there was no relationship between the size of firms and their exports or geographical markets.

A linear regression model was applied to determine the relationship between exports by value and producer services subsectors. In three out of eight cases the linear regression model reasonably fitted the data. The highest standardized coefficient (Beta) was for accounting, auditing, and bookkeeping firms (.8946), followed by engineering consultants (.8687), and legal services (.6496). Thus, the size of firms, measured in terms of number of employees, was associated with the level of exports in three subsectors of producer services. This finding

suggests that the relationship between the two variables is more complex than was suggested in earlier studies. For example, Ley and Hutton (1987) found a weak relationship between exports and size of firm in a sample of Vancouver offices, while Beyers and Alvine (1985) found no such relationship in their large sample of firms in the Puget Sound Region. We found that there is no relationship between these variables for the producer services sector as a whole. However, there appear to be substantial differences on the level of individual subsectors.

Intersectoral Sales of Producer Services

Noyelle and Stanback (1984), in their quantitative interpretation of structural change in industry in the United States, argued that much of the growth of local producer services is due to greater service input requirements by the "key" (that is, export) sectors found in each region. However, Beyers and Alvine (1985) presented a convincing case based on survey results that, "... while the significance of these inputs has risen, proportionately they did not increase as much as intraservice input purchases" (Beyers and Alvine 1985, 43). The results of their survey suggested strong market ties within services. The growth of service exports was not primarily associated with local or export linkages to the goods-producing sectors. Instead, the growth of producer services was more tied to increases in intraservice demand and final demand for services by the public sector and consumers.

The results of the survey of producer service firms in Edmonton presented here support these observations, Figure 5. The largest sales of producer services were to the service sector (30.5 percent), followed by the public sector (26.4 percent) and the goods producing sector (17 percent). Although the sales to the primary and secondary sectors were significant, they were comparatively less important than the input requirements by the service and public sectors.

There were also significant differences in the interindustry sales by various producer services subsectors, Figure 6. Engineering consulting, architectural services, and computer and data processing service subsectors had significant sales to the public sector. Almost half of the output of the engineering services was absorbed by government institutions. The remaining producer services subsectors also showed a high degree of dependence on government contracts. Although the data presented here are not conclusive as to the causes of such a high concentration of sales in this market, two scenarios are most probable. First, the present structure of the interindustry linkages is a straightforward continuation of past trends. This being the case, the growth of the sector was due primarily to increasing demand from the public sector, and the demand from primary and manufacturing industries

played a relatively minor role. Second, the initial demand for producer services was a result of the economic "boom" in Alberta. In the 1980s, during the period of economic slowdown in the energy industry, the public sector increasingly "substituted" for declining demand in the form of government contracts. Thus, the present structure of interindustry linkages reflects a substantial departure from the earlier pattern.

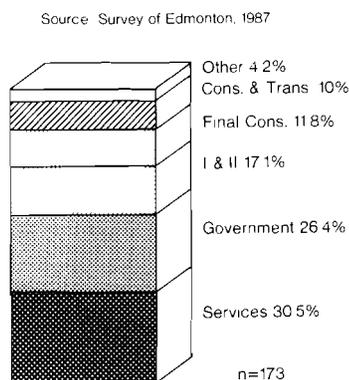


Figure 5

INTERINDUSTRY SALES OF PRODUCER SERVICE FIRMS, EDMONTON, 1987

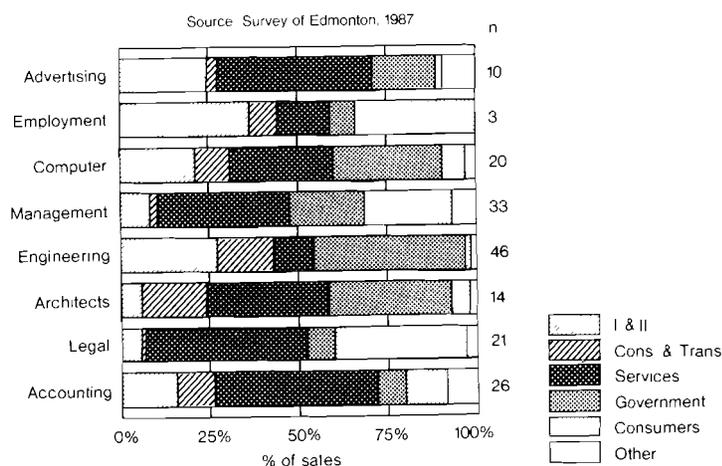


Figure 6

INTERINDUSTRY SALES OF PRODUCER SERVICE FIRMS BY SERVICE CATEGORIES, EDMONTON, 1987

A comparison of the distribution of producer service firms between Edmonton, Calgary, and the rest of Alberta is shown in Table 2. Over 45 percent of all producer service firms were located in Calgary, compared with 32 percent in Edmonton, and less than 22 percent in the rest of Alberta. Particularly interesting is the distribution of engineering consulting firms between the two "primate" cities. Calgary had in 1986 over 64 percent of all engineering consulting firms in Alberta, a very high concentration compared with Edmonton's 22 percent. Because of the lack of comparative data, we can only assume that Calgary-based engineering service firms were also involved in exports of this type of service outside the province. This assumption is strongly supported by the fact that Calgary had three times as many firms in this subsector as Edmonton, a very high number for a city slightly smaller than Edmonton. Moreover, the exports must contribute a substantial proportion of their revenue, considering the dramatic downturn in the oil and gas industry. It is unlikely that the demand from the numerous oil companies headquartered in Calgary could justify the presence of almost 1,500 private engineering consulting firms in that city.

Table 2

DISTRIBUTION OF PRODUCER SERVICE FIRMS BETWEEN EDMONTON, CALGARY, AND THE REST OF ALBERTA, 1986

Subsectors	Edmonton		Calgary		Rest of Alberta		Total
	#	%	#	%	#	%	
Employment services	40	29.0	57	42.0	40	29.0	137
Computer services	121	31.0	204	52.0	67	17.0	392
Accounting services	433	33.0	394	30.0	486	37.0	1,313
Advertising services	80	37.0	105	49.0	30	14.0	215
Engineering consulting and architects	505	22.0	1,468	64.0	321	14.0	2,294
Legal services	659	41.0	531	33.0	418	26.0	1,608
Management services	473	40.0	520	44.0	189	16.0	1,182
Total firms	2,311	32.4	3,279	45.9	1,551	21.7	7,141

Note: The total for Edmonton includes firms located in satellite cities.

Source: Alberta CDE (1987) (modified).

In comparison, Edmonton specialized in legal service firms (41 percent of the total in the province) and management and public relations services (40 percent of the total). Clearly, then, there are significant differences in the structure of the producer services sectors between Edmonton and Calgary. It can be assumed that the leading "export

centre" in Alberta, particularly in the private sector, was Calgary. On the other hand, Edmonton also had significant export sales of producer services outside the local market. However, the role of the public sector is much larger in Edmonton, and most of the non-local sales were tied to government contracts. In other words, the producer services sector in Edmonton, although smaller, was much less tied to the fortunes of primary industry. This is perhaps an indication that the competition between the two cities for markets and export customers will continue in the future.

Policy Implications

The findings presented here have some important policy implications for regional development. The Edmonton-based producer services sector achieved a substantial level of export-oriented trade, not only at the regional but also at the interregional level. Moreover, the producer services sector performs important growth-inducing functions such as import substitution and transfer of innovations. Thus, local and regional development policy objectives should explicitly acknowledge their growth-generating potential. At the moment, however, there is no specific economic policy in Alberta focused on this type of economic activity. The long-term proposal for an industrial strategy in Alberta (Government of Alberta 1984) did not make any explicit reference to producer services. Even though the long-term objectives of the policy set out in this document were to diversify the Albertan economy and balance economic growth (Government of Alberta 1984, 29), only primary and high technology industries were considered to be worth further attention.

The major reason for the lack of interest in producer services on the part of the government is the belief in its essentially ancillary role in economic growth. A growing number of economists have challenged this conventional view of services. For example, MacPherson (1988), in his recent study, found a positive relationship between the export involvement of small manufacturing firms and linkages with producer service firms. The availability, quality, and range of services present in a metropolitan area has a substantial bearing on the performance of the entire industrial base of a city. Nevertheless, it is difficult at this stage to design any specific policies directed towards the producer services sector. The exact nature of the role producer services play in economic growth remains poorly understood. Thus, efforts directed towards development of producer service firms may not bring immediate returns.

Despite these problems, considerable attention has been devoted to the development of producer services in medium-sized cities. Gilles-

pie and Green (1987) suggested long term regional policy objectives for the United Kingdom. These objectives, after modification, could be adopted as policy guidelines for producer services in Edmonton. The objectives are:

1. To develop an investment policy providing financial assistance or tax exemptions for projects involving producer services.
2. To encourage new firm formation and diversification of existing producer service firms.
3. To provide assistance in identifying potential markets outside Alberta.
4. To develop government policies favouring purchases from local producer service firms.
5. To encourage branch firms to increase their inputs of locally supplied producer services.
6. To reduce assistance to investment projects which fail to meet a certain level of local service inputs.

Conclusions

An attempt has been made to examine producer services in the context of the core/periphery model. There are five conclusions that should be elaborated.

First, the core/periphery model is not adequate as the context for explaining trade in producer services at the interregional level. Contrary to the core/periphery concepts, Edmonton has a large and diversified producer services sector. The conventional wisdom that Edmonton is a peripheral centre dependent for its economic development on the core cities in Central Canada offers very little explanation for the volume and the role of interregional trade by producer services in the local economic base. This conclusion may appear somewhat paradoxical, in that Alberta's small and resource-oriented economy is very much dependent on external conditions. Resources and linked sectors provide about one-fourth of the total regional revenue. However, the resource industry is more dependent on decisions made on world energy markets than in the industrialized core of Canada. This inevitable dependence on external conditions generates sentiments of economic alienation, and the core/periphery framework has often served as a convenient theoretical context for expressing these sentiments.

However, the core/periphery relations are evident at the regional level. Alberta is unique among Canadian provinces in that it has two core centers relatively independent of each other. Although the data are not conclusive, there appears to be a clear segmentation of markets between the two cities. Edmonton specializes in legal services,

and management and public relations consulting, while Calgary has far larger and diversified engineering and architectural service subsectors. Moreover, Edmonton's producer services sector relies to a large extent on servicing the public sector, while Calgary appears to have much stronger linkages to the private sector. This is particularly true for export-oriented engineering and architectural services. All other urban centres in Alberta have much smaller numbers of producer service firms. This implies that they depend for most producer services on the provincial core areas.

The second conclusion is that Edmonton's economy is developing independently from the core region of Canada. The basic economic structure of Alberta generally, and of Edmonton specifically, can be effectively explained by market forces without reference to control or dependency linkages. Federal economic policies as well as the economic supremacy of Central Canada have (with the notable exception of the Crow rate and National Energy Program) played little or no role in determining the structure of industries in Edmonton, including the producer services sector. The flows of producer services from the industrial core have not made Edmonton's producer services sector less competitive or diversified than it might have been otherwise; evidence has been presented to the contrary.

Edmonton-based producer service firms have significant markets within the region as well as outside the provincial boundaries. This leads to the third conclusion. Producer services benefit smaller cities in the periphery. In their recent study of service exports in Western Canada, Stabler and Howe (1988) reached a similar conclusion, suggesting that service exports may be unrelated to the size of the metropolitan area in which the firms are located.

Perhaps the most interesting are the results indicating the linkages of the producer service firms to other sectors of the economy. The public and service sectors were particularly significant as major sources of demand for producer services. Relations with the goods-producing sectors, although important, were not as prominent as the traditional view of the service sector would imply. These results allow a fourth conclusion to be made. The principal role of producer services in a peripheral economy is that of integrating local industries into a more competitive and efficient economic complex. The secondary role is that of import substitution. The third most important function is that of direct revenue contribution through interregional trade.

A fifth general conclusion is that the development and growth of the local industrial base depends, to a large extent, on an efficiently functioning complex of service activities. Producer services are particularly important in this process, since they most effectively provide other businesses with new ideas, methods, and technologies that

enhance their productivity and competitiveness. Many new industrial location studies suggest that the traditional locational factors of transport costs and access to markets and raw materials are less important now than they were in the past. Prominent among the new locational factors is the availability of advanced services in a region. Thus, the degree of development of the local producer services sector may be an increasingly important pull factor in locating industries such as high technology plants and research facilities.

Finally, more research is needed to determine the exact role that producer services play in smaller and less diversified regional centres. However, our research would suggest that the core/periphery model, if applied literally, does not provide a satisfactory framework for the analysis of the role of producer services in regional development. In the context of the findings presented here, future research should concentrate on microeconomic studies of the impact of producer services upon the performance of selected industries in cities of various levels in the urban hierarchy. The growth of regional economies in Canada depends, to a large degree, on the range and availability of the producer services sector in the local economic base.

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