

The Peripheries of British Columbia: Patterns of Migration and Economic Structure, 1976-2002*

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Introduction

Recent appraisals have suggested that British Columbia's space economy has begun to evolve beyond its traditional core-periphery structure (Barnes et al 1992; Davis 1993; Hutton 1997a). Davis (1993), for example, has argued that the connections between the core and periphery have weakened, and that two relatively independent economies may be emerging in the province. Focussing on Vancouver, he argues that a significant proportion of the core's economy has become re-oriented through the internal growth of its quaternary sector, and its increasing participation in global labour markets and capital flows. This reorientation has helped insulate the city from the boom and bust commodity cycles that characterize staples economies. Vancouver's current economy, according to this interpretation, is less coloured by its resource hinterland than it once was. Its dynamic linkages are now across, rather than down the urban hierarchy.

Structural economic change in British Columbia is not confined to the core. The entry of large retail operations and footloose industries, the application of post-Fordist strategies, the depletion of renewable and non-renewable resources,

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and an aging population has significantly affected the periphery's economy over the past thirty years. These changes, furthermore, have not been felt equally across space. While some areas have experienced dramatic job loss in extractive industries, others have enjoyed rapid population growth and expansion in non-traditional economic sectors. As a result, echoing Hutton's observations, a new and more complex "regional and community-level economic geography" has begun to emerge in the periphery (1997b: 253). At one extreme are depressed coastal regions. At the other is the relatively diversified and hierarchically ascendant economy of the Central Okanagan. In between are regions that still rely on staples, but which have moved beyond, to varying degrees, the parameters of their traditional economies. The goal of this paper is to document the emergence and character of these diverse regional economies through an analysis of intraprovincial migration patterns. The paper begins with a summary of the core-periphery concepts and their relationship to structural economic forces and patterns of migration within staples economies. Emphasis is placed on their application to Canada, the evolution of British Columbia's core-periphery space economy, and recent evidence of changes in the Mountain West region of the United States. The latter is a peripheral area that has experienced considerable in-migration since the 1970s despite the decline of its traditional resource-based economy. Against this backdrop, the empirical section of the paper assesses the current character of regional economies within British Columbia's periphery, and in particular, the degree to which it soon may not be possible, if it is not already, to interpret the province's economy within a simple core-periphery, staples framework. The paper subsequently proposes a more nuanced and, we believe, more useful model for understanding British Columbia's regional economies.

Cores and Peripheries in Staples Economies

Canada's Historical Pattern

The division of space into cores and peripheries is a common element of many attempts to understand the organization of, and relationships between, regional economies (McCann and Smith 1991). Prominent examples include Myrdal's (1957) cumulative causation explanation of underdevelopment, Wallerstein's (1974) world system theory, Friedman's (1966) models of development, and Frank's (1971) dependency theories. In Canada, the core-periphery concept has provided an important framework for understanding the country's place within the capitalist world economy, as well as the evolution of regions within its borders. The first perspective is intimately associated with Innis' staples interpretation of the country's political economy. Innis suggested that Canada's abundance of raw materials created comparative advantages for resource-intensive exports within the capitalist world economy (Innis 1933; Watkins 1963). These exports drove economic development through direct investment and through diversification around the staple base. Cores and peripheries were central to this process since, as Larry

McCann notes, "the demand for staple commodities" and the "capital, labour, technology and entrepreneurship" required for their exploitation originated in more economically-advanced countries (McCann 1998: 8). France and England initially played this role, but were later supplemented, and largely displaced, by the United States and Japan. While associated with different staples and economic phases, these core countries have enjoyed a dominant position with respect to Canada. Canada, with its small population and narrow economic base, has largely had to accept the terms of trade dictated by its more politically powerful and economically innovative trading partners (McCann 1998: 4, 9). Such asymmetrical relationships between regions are a central feature of staples theory.

At the regional scale, historians and historical geographers have used the core-periphery and staples concepts to interpret the origins and character of Canada's urban hierarchy. The Metropolitan thesis, as put forward by Careless (1954), Stelter (1975), McCann (1981) and others, argues that "urban outposts" played a critical role in the development of Canada's staples economy (Davis 1985). Typically associated with strategic gateways or break-of-bulk locations, urban outposts functioned as entrepôts, "collecting staples from their region for shipment to the metropolitan centre for final processing and, in turn, distributing the manufactured goods from the metropolis" (Stelter 1975: 271). These nascent urban centres also had important political and cultural functions, providing points of contact and control for the core, and a vehicle for transmitting the core's "style of life" to the periphery (Stelter 1975: 270). These initial advantages and functions could compound over time, "particularly when income ... was reinvested in the urban economy, spawning a more diverse profile of specialized manufacturing, tertiary, and quaternary services" (McCann 1978: 24-25). Coupled with financial and political power, select cities were subsequently able to enlarge their hinterlands, and in the process, transform themselves into metropolitan centres. Urban development beyond these favoured communities was more dispersed and sporadic. Subject to the vagaries of staples extraction, and limited by small and poorly connected populations, communities in the periphery struggled to diversify their economies. Towns could seemingly appear overnight in response to new discoveries, transportation linkages, and state initiatives. However, they could just as quickly stagnate, or even disappear, when demand dropped below critical levels or the resource played out. Over time, these divergent fates have created local versions of core-periphery power structures. The most obvious example of a Canadian core is the industrial heartland of southern Ontario and Québec. Regional centres such as Vancouver, Winnipeg, Edmonton, Calgary, and perhaps even Halifax, have also developed "a position of strength achieved through successive phases of capitalist development" (McCann and Smith 1991: 71). Due to their "superior trading, manufacturing, transportation, and financial roles," these cities "take on a leading role in defining – even dominating – the urban character of Canada" (McCann and Smith 1991: 71).

While Canada's core-periphery structure is a product of its mercantile and industrial history, recent post-industrial economic and social trends have also shaped the country's space economy, although in complex and sometimes contra-

dictory ways. On the one hand, electronic communication, corporate consolidation and the ongoing globalization of trade has re-enforced the existing urban hierarchy. Research by Coffey and Shearmur (1997), for example, indicates that the proportion of producer services within the top level of Canada's urban hierarchy has increased in recent decades. The concentration of financial and information dependent services in southern Ontario, in particular, has elevated the status of Toronto at the expense of regional centres (Coffey 1994; Gertler et al 2002). At the same time, the rise of the quaternary sector, corporate restructuring, and market integration have also undermined the linkages between cores and peripheries in Canada. Cores still function as resource processing, distribution, and control centres; however, these functions are increasingly overshadowed by their service sector exports to "extra-regional and international networks," and by their tourist and leisure-oriented spaces of consumption (Hutton 1997a: 97). In combination, the impact of these post-industrial trends have led some researchers to suggest that core regions are "diverging" or perhaps even "disengaging" from their still resource-dependent peripheries (Davis 1993; Hutton 1997a).

The Historical Pattern and Transformations in British Columbia

British Columbia has been frequently cited as a good example of a staples economy in microcosm (Robinson 1973; McCann 1978; Bradbury 1987; Hayter and Barnes 1990). The province has both a clearly delineated core-periphery structure and a history of exporting its raw material resources to distant markets. Its staple exports comprise a diverse range, from furs, fish, and a variety of minerals (gold, silver, lead, zinc, copper, coal and molybdenum) to forest products, hydroelectric power, natural gas, and oil. The development of each of these staples came at different times and under different circumstances, and the unique physical characteristics of British Columbia -- with its rugged coastline, mountain chains, turbulent rivers and diverse vegetation -- posed significant challenges for resource extraction and transportation (Robinson 1998: 349; McGillivray 2000: 21). The emergence of a clearly defined core-periphery economic and settlement pattern within the province dates to the completion of the Canadian Pacific Railway (CPR) in 1886. The CPR connected the relatively isolated interior of British Columbia to Vancouver, which permitted the shipment of lumber and other staple products to overseas markets (Bradbury 1987: 406-408; Hayter and Galois 1991: 176). The opening of the Panama Canal in 1914 likewise permitted the shipment of prairie grain to European markets through Vancouver, thus promoting Vancouver's economic ascendancy. The CPR's freight tariff structure also favoured Vancouver as a location for manufacturing, transportation and trading services related to staples exports; and Canadian banks and financial institutions preferred Vancouver over other cities as a western base for their operations (Bradbury 1987: 414). Consequently, Vancouver recorded unprecedented demographic and economic

growth during the late nineteenth and early twentieth century. By 1911, Vancouver's population had reached 100,000, and in 1931, 250,000 (Wynn 1992: 69). By 1951, metropolitan Vancouver's population exceeded one-half million, accounting for just over half of British Columbia's inhabitants.

Following World War II, successive provincial governments implemented initiatives to further integrate the economies of the interior and the Lower Mainland. Under the Social Credit administration of W.A.C. Bennett (1952-1972), especially, resource development throughout the interior of the province was a priority (Bradbury 1987: 415-422). Government financing underwrote the construction of new roads, the widening and paving of existing roads, and the extension of the Pacific Great Eastern Railway (later, the British Columbia Railway) into the north of the province (from Prince George to Fort Saint John). Government policies further encouraged corporate investment in the various resource sectors and promoted the development of staple exports. The "Instant Towns Act" of 1965, for example, promoted the establishment of single-industry resource-based towns by enacting municipal governance structures and offering resource towns instant municipal status. At the same time, this legislation transferred the costs of running and organizing these town sites from the resource companies to the communities themselves and the province (Bradbury 1980: 19-38, 1987: 432). In the promotion of forestry, long-term leasing arrangements allocated publicly-owned timberlands to private corporations, almost in perpetuity, provided that the companies follow sustained yield practices, offer fire and pest management protection, and adhere to other provincial guidelines (Bradbury 1987: 417). The provincial government also set the stage for massive public investment in hydroelectricity development by taking control of the British Columbia Electric Company in 1961, and promoting the development of this resource (Black 1989: 131).

By the 1970s, one-third of British Columbia's non-metropolitan population lived in approximately 100 single-enterprise communities that collectively represented nearly 50 % of British Columbia's non-metropolitan places. This was the highest ratio of single-industry towns to total settlements in all of Canada (Bradbury 1987: 430). Common characteristics among "hinterland" communities included: a lack of cultural facilities, limited social and economic opportunities, an unbalanced occupational structure, and a perception among residents that "economic and social affairs are manipulated by managers and decision-makers in distant metropolitan centres" (Bradbury 1987: 432-433). Even in the larger, sub-regional centres, the "social fabric and culture" was significantly different from that of the metropolis. Such centres were characterized by "occupational pluralism," lower levels of skilled employment and "high population turnover" resulting from employment-related migration (Bradbury 1987; Halseth 1999). The vagaries of a staples economy is clearly evident in recent cycles of population growth in Kamloops, Nanaimo, and Prince George. These regional centres more than tripled in size during the resource-fuelled expansion of the 1960s and 1970s (Forward 1987; Belshaw and Mitchell 1996). However, in the early 1980s, their fortunes changed abruptly as high interest rates and economic re-structuring fashioned the deepest and longest economic downturn in British Columbia since the Great Depression

of the 1930s: "At the bottom of the depression in 1982," as documented by Barnes et al, "over 50 per cent of all loggers, between 25 and 30 per cent of workers in sawmills, and 60 per cent of shake and shingle workers were unemployed" (1992: 181-182). In Kamloops, the unemployment rate rose from 6.7 % in 1981 to 15.9 % in 1986, while the city's population fell by 3.5 %. The situation was even worse in smaller centres. In the late 1980s, economic conditions and population growth rates reversed again, and then again in the mid 1990s (Barnes et al 1992: 173-175). This on again, off again pattern is one of the key reasons for the periphery's stunted urban hierarchy. In 2001, only five urban areas in the periphery had populations greater than 50,000, and only two of these -- Abbotsford (147,370) and Kelowna (147,739) -- more than 100,000 residents.

In the process of tapping the interior's timber and mineral wealth, large-scale resource development solidified Vancouver's status as the province's core. Vancouver benefited from its traditional control over the transportation and distribution of resources and production factors, as well as from its increasing importance as an administrative centre for the large companies and crown corporations that came to dominate the province's staples industries during the post-War era of economic growth and regional integration (Barnes 1996: 58-59). As Hayter's assessment of British Columbia's "open staple economy" in this period indicates, "the pace of corporate concentration within the forest sector was rapid: in 1940 the largest 58 companies controlled 52 percent of timberland, but by 1974, the top eight controlled 82 percent" (1978: 98). The pulp mills and lumber operations controlled by these vertically and horizontally integrated firms were widely dispersed across the province. However, by the 1970s, most had relocated or consolidated their managerial operations within downtown Vancouver. Hayter argues that this spatial consolidation was necessary because "larger firms had reached a size that required entrepreneurial adaptations to coordinate operations of increasing complexity," including the organizational capacity for further expansion (1978: 98). As the province's primary service centre, Vancouver's downtown corporate complex facilitated these adaptations through immediate, face-to-face access to high-order economic (banking, insurance, and investment), legal, consulting, and research functions. Similar trends in the mining and fish processing sectors, coupled with multiplier effects within the quaternary service sector, compounded the city's growth. In 1971, the population of the Greater Vancouver Regional District topped one million. Thirty years later, it had nearly doubled again. At present, Vancouver's status at the province's metropole is unchallenged. It accounts for 51 % of the province's inhabitants -- over 59 %, when the Capital Regional District is included within the core -- and almost all of its head-office functions (Ley and Hutton 1987).

Staples continue to play a central, although diminished, role in British Columbia's economy. Natural resources currently account (by value) for over 70 % of the province's exports, and approximately 13 % of its gross domestic product. Only Newfoundland is more dependent on its resource sector (BC Stats 1996). This dependency is reflected in the spatial origins of the province's exports. According to one estimate, workers in the periphery contribute three times more value to the

province's international exports than do those in the core. This observation has led some analysts to argue that the core's economy is not only dependent on, but is effectively "subsidized", by wealth generated in the resource periphery (Baxter and Ramlo 2002). There is also evidence, nevertheless, that the relative importance of staples has recently decreased. While still high, the resource sector's share of exports, for example, has fallen 10 percentage points over the last decade. The sector's direct shares of employment and economic activity have also fallen, in these cases, by about a third since the mid 1980s, as have its indirect contributions, especially in the core (BC Stats 1999b). According to an input-output analysis, resource activity in the periphery accounted for close to one-half of Vancouver's service sector output in the early 1970s (Hutton 1997b: 255). A survey completed in the mid 1980s found, in contrast, that 71 % of the revenue generated in Vancouver's producer services was linked to local customers, 17 % to those in other provinces or countries, and only 12 % to those in the province's periphery (Ley and Hutton 1987: 137). On the flip side of the equation, non-staples goods and service industries have seen their share of the province's economy rise steadily in recent decades. The service sector now employs three of four workers and accounts for a similar share of the province's gross domestic product. Exported services have grown especially fast, almost doubling their share of international exports to 7 % between 1990 and 1997 (BC Stats 2000). Perhaps even more telling, however, is the fact that non-staples goods production has jumped to 13 % of the province's gross domestic product (BC Stats 1998a). Production of high-technology goods generally, and electronic equipment, in particular, have increased rapidly. Exports of high technology products expanded at annual rate of 15 % during the last decade -- nearly double the figure for goods production as a whole -- and they now outrank shipments of coal, industrial ores, fish, paper, and even solid wood products other than lumber (BC Stats 1998b, 2001).

This shift in the province's economy is a result of several interacting factors. As in other staples regions, resource industries in British Columbia were hit hard by the severe recession of the early 1980s, and have since struggled to adjust to depressed commodity prices, the possibilities of new technologies, and the realities of free trade agreements, market integration, corporate consolidation and environmental legislation (Hayter 2000). And, as elsewhere, adaptations have often led to layoffs, and in some cases, outright closures. Coastal communities dependent on the region's aging forest and fishing industries have suffered the most, but are by no means unique (Hayter and Barnes 1990; Barnes and Hayter 1994; Behrisch et al 2002/03). At the same time, global market forces and post-industrial trends have diversified the province's economy by opening up new opportunities and connections in the quaternary sector. Most notably, British Columbia has benefited from its proximity to dynamic Asian economies and to high technology and entertainment hubs along the American west coast (Barnes et al 1992). Japanese and Hong Kong based companies have invested heavily in local shopping malls, residential and office developments, and hotels and associated tourist infrastructure, while American "runaway" firms, attracted by Canada's weak currency and a skilled labour force, have been active in movie and television production. In 2000, Ameri-

can firms accounted for two-thirds of the \$1.1 billion film and television production injected into the provincial economy, a situation that has drawn formal complaints from unions in California (BC Stats 2002b).

These shifts have widened the economic and cultural divide separating the core and periphery. As the province's gateway and metropolitan centre, Vancouver has attracted the vast majority of the new investment (Davis and Hutton 1989; Davis 1993). New production spaces, in the form of light industry and advanced services, have re-shaped the city's economic landscape, and reduced the region's sensitivity to commodity cycles (Hutton 1997b). In addition, affiliated gentrification processes and a wave of immigration from Asian countries have reworked the city's social and cultural fabric. Collectively, these changes have transformed Vancouver from a "cozy place, slightly in the backwaters," to a world city that is horizontally linked to the "global circulation of money, people, information, and investment" (Barnes et al 1992: 199). It has also been suggested that Vancouver may be an example of Gottman's transactional city "in which information linkages among metropolitan centres nationally and internationally become more important and dynamic relative to the traditional market linkages with the local area" (Ley and Hutton 1987: 415). Other studies take the argument a step further, arguing that the bonds between the periphery and core are loosening, and that, as a result, two distinct economies may be emerging within the province. Hutton argues, for example, that the "relationships between Vancouver and the rest of the province," given the dynamics of change currently operating within British Columbia, "are subject to renegotiation and redefinition" (Hutton 1997b: 235). He consequently proposes a modified core-periphery framework; one that can accommodate the core's more diversified industrial base, and its diminished reliance on the hinterland.

Economic and Social Transformations in Peripheral, Staples Economies

Given the nature of the changes occurring in Vancouver and other metropolitan cities, one might expect that the impact of post-industrialism on peripheral regions would be negative. And while true for some areas, many peripheral regions have, nevertheless, experienced substantial population growth in recent decades. This growth is most prominent in the United States. Since 1960, the southern and western parts of the United States have collectively increased their share of the national population from 46 to nearly 60 %. Growth in peripheral regions has also been documented in Canada, western Europe and Japan (Vining and Pallone 1982). This phenomenon is, in part, a reflection of the spatial restructuring of industrial economies and of the impact of new technologies on regional population trends (Plane 1989). Over the last 40 years, the heartlands of developed countries have lost heavy industry to lower cost and less regulated places in the periphery, while advancements in electronic communications have given service industries greater freedom and flexibility in their locational behaviour (Fuguitt and Beale

1996). The migration of labour has thus become more complex in post-industrial economies, with bi-directional flows of blue-collar and service workers between cores and peripheries (Findlay et al 2002). The shift to the periphery is also a product of changes in social values (Champion 1991). Commonly referred to as the 'deconcentration hypothesis,' counterurbanization in this form broadly refers to the migration of people to towns and villages in search of community and recreational opportunities in idyllic rural settings. This flow has been associated in the literature with concepts of nostalgia, authenticity, and sense of place specifically, and thus the rise of postmodern culture generally (Halfacree 1997; Dahms and McComb 1999). Other studies suggest that cost-of-living factors and expanding senior populations are also implicated (Frey 1991; Alonso 1996). Whatever the motivation, sustained in-migration to peripheral regions has reversed the "century-long migration towards high density core regions" (Vining and Pallone 1982: 339).

In the context of this study, a clear and particularly relevant example of growth in a peripheral region is the mountainous west of the United States. This region – collectively Montana, Idaho, Wyoming, Colorado, Utah, Nevada, New Mexico, and Arizona – has experienced among the highest growth rates in the United States in recent years, more than doubling its population since 1970 (Power 1996). Data compiled by Shumway and Davis (1996) indicate, furthermore, that with the exception of a out-flow during the first half of the 1980s, migration has been the driving factor behind population growth, and that growth rates have been high in both urbanized and rural counties. Since 1985, population and employment growth was stronger in the region's non-metro counties (those not within metropolitan statistical areas) than in the United States as a whole, and three times greater than their counterparts in other regions (Beyers 1999; Cromartie and Wardwell 1999). The causes of, and the demographic, economic and environmental impacts of, growth in this region have subsequently become the subject a substantial literature.

Like British Columbia, natural resources have historically driven the economy of the Mountain West (Power 1996). As a result, migration in this region has been traditionally associated with cycles of resource exploitation (Power and Barrett 2001). Over the short term, rising commodity prices and new discoveries would spur economic activity, creating employment opportunities, and enticing workers to migrate into the region. The opposite would happen when prices slumped or the resource was exhausted: jobs would contract and migration flows ebb as migrants sought work in the more diversified, and thus more stable, labour markets of core areas (Nelson and Beyers 1998). In recent decades, this cyclical migration pattern has largely disappeared due to the decline of the resource economy. According to figures compiled by Power and Barrett (Power and Barrett 2001: 55, 52), the resource sector's share of employment in the Mountain West fell by over 60 % between 1969 and 1998. The largest decline was in mining, where 44 % of the industry's jobs disappeared between 1981 and 1998. While concomitant growth in service industries has compensated for some of these losses, the disappearance of "good", high wage jobs in the resource sector has contributed to a measurable drop in the region's average income compared to other areas in the United States.

Ranked per capita income fell in 6 of the 8 states in the Mountain West between 1978 and 1998, with Montana falling 15 places and Wyoming 28. Colorado (6th) and Nevada (11th) were the only states to rank in the top half. Utah (40th), Idaho (43rd), Montana (46th) ranked in the last quintile (Power and Barrett 2001: 42). In a staples economy, job and income losses of this magnitude would have resulted in significant out-migration. The fact that the region actually experienced the opposite suggests that the forces driving migration between cores and peripheries have changed in critical ways.

Migration into the Mountain West appears to be the product of factors associated with both the deconcentration and economic restructuring hypotheses, although arguments prioritizing one over the other are not uncommon. One of the strongest arguments for the former is found Thomas Power and Richard Barrett's (2001) recent book, subtitled *Pay and Prosperity in the New American West*. Power and Barrett argue that the Mountain West has entered a "post-cowboy" phase in which environmental amenities in the form of unspoiled scenery, "recreational opportunities, cultural richness, reasonable costs of living, safe communities, and quality public services" are the key pull factors for migrants (Shumway and Lethbridge 1998: 95). Writing from an economic perspective, Power and Barrett contend that amenities are not trivial and are routinely factored into the decisions people make when migrating: "Clearly, people care about where they live, and they act economically in the pursuit of their preferences," including making "major sacrifices in pursuit of higher-quality living environments" (2001: 113). In essence, Power and Barrett suggest that amenity-driven migrants are willing to trade attractive and less expensive living environments for lower wages. This logic not only accounts for the upswing in migration, but also helps explain the region's relative decline in average income.

Power and Barrett's argument that the Mountain West is experiencing a fundamental economic transformation centred around the local consumption of place has received broad theoretical and empirical support (Nelson 1997; Cromartie and Wardwell 1999; Ohman 1999; Rudzitis 1999; Vias 1999). A study by Nelson (1997), for example, has found that recent migrants tend to have lower incomes and are more dependent on non-earnings income than existing residents. Nelson acknowledges that this difference may reflect the impact of early retirees moving into the area; however, he also suggests that the situation is complex since migrants are "on average younger than oldtimers" (Nelson 1997: 425). While his data do not permit a cross tabulation of income by employment, he does argue that "it is possible that non-earnings income allows newcomers to be more footloose and free to locate wherever they choose" (Nelson 1997: 428). Vias (1999) has taken this argument a step further, suggesting that the preference for areas with high amenity values has not only drawn retirees and highly skilled labour and entrepreneurs into the region, but that amenity migrants are driving economic change. To prove this hypothesis, Vias used regional adjustment models to assess the degree to which growth in the Mountain West was driven by changes in population or employment. The results of his analysis indicate that since 1970, and unlike the country as a whole, population growth has been the dominant factor. He

subsequently concludes "the mechanism of change in the region does not support the traditional notion that people follow jobs into a region. In fact, evidence is strong that the opposite is true – jobs follow people" (1999: 22).

Other studies, in contrast, place greater emphasis on the role of economic restructuring. Smutny (2002) points out, for example, that recent improvements in transportation and telecommunications have not only "played a role in enhancing flexibility in residential location for workers in a post-Fordist economy," but they have also "made non metropolitan ... areas attractive to a wide range of capital investment" (Smutny 2002: 441). Several "techno-poles" have developed in the Mountain West, with Boise and Pocatello, Idaho recording some of the fastest growth in the United States. As in other areas, high technology industries have tended to locate in the region's largest centres or in those with the greatest endowment of educational resources. Booth's (2002) work tests the hypothesis that access to these and other metropolitan areas has had a significant impact on growth patterns in the Mountain West. His findings indicate that many migrants try to balance environmental amenity with access to urban centres. His work thus suggests that the rapid growth of urban-adjacent counties is essentially a suburbanization process. The importance of economic restructuring has also received modest support from studies of the region's changing employment structure (Beyers 1991; Nelson and Beyers 1998). On the one hand, studies have found a strong positive correlation between population and service sector (both tertiary and quaternary) growth rates at the county scale. On the other hand, only about half of the change can be attributed to structural changes in the economy; the other half appears to be a product of population growth and associated multiplier and substitution effects (Beyers 1991).

Overall, the existing research confirms the intuition that fundamental economic changes have occurred in the Mountain West over the last 30 years, and that these changes are associated with broader transformations occurring in post-industrial societies. These changes appear to have altered, furthermore, the character, although perhaps not the status, of this peripheral region. Once primarily a source of raw resources, the Mountain West has become a place where -- at least for some highly skilled, footloose persons -- people can "work where they recreate" (Smutny 2002: 441). While the broad context is fairly clear, it must be recognized at the same time that the processes driving these changes are complex and, as several studies have found, that the geography of change is anything but uniform (Shumway and Lethbridge 1998; Cromartie and Wardwell 1999). According to one assessment, highly urbanized and high amenity counties in the "New West" recently accounted for 82 % of the region's in-migrants, even though they were home to only 45 % of its residents. In counties with dominant farming and mining economies, the pattern was reversed: they received only 13 % of migrants but contained 30 % of the region's population. Similar variations have been found in studies of post-industrial change in other peripheral regions (Fuguitt and Beale 1996; Lindgren 2002).

Research on the Mountain West provides a provocative complement to the core-focussed "two economies" thesis and post-Fordist interpretations of the

challenges facing the periphery's resource sector. In particular, this body of research indicates that post-industrialization, globalization, and counterurbanization may not only be re-shaping British Columbia, but that it is reasonable to expect that these forces have resonated, to different degrees and ways, across the periphery. Studies by Gill and Reed have documented the emergence of a post-productive economy in the Squamish-Whistler corridor north of Vancouver (Reed and Gill 1997; Gill and Reed 1999; Gill 2000). Their survey of Squamish residents indicates, for example, that newcomers are less dependent on the area's resource sector, and have different priorities in terms of housing, recreational activities, and community development (Gill and Reed 1999). In their assessment, the consumption of the environment as a source of amenity and social status is gradually displacing the environment's value as a staples warehouse. Other surveys have found, however, that employment opportunities in the resource sector are still the key pull factor for migrants in more remote regions of the province (Halseth 1999). With this theoretical and empirical context in mind, the goal of this study is to determine if a broader reappraisal of the core-periphery model is in order, and if so, what a re-configured periphery may look like.

Data and Methodology

Our analysis draws on BC Stats' *British Columbia Regional District Migration Components* figures that have been compiled annually since 1976.¹ These reports show the number of international, interprovincial, and intraprovincial migrants moving into and out of the province's twenty-eight regional districts (Census Divisions) (Figure 1). The intraprovincial counts – the focus of this paper – are acquired by BC Stats from federal income tax returns.² We grouped the Peace, Stikine, and Northern Rockies, as well as the Greater Vancouver and Capital regional districts together. The latter compose the core while the former is a statistical convenience that accommodates boundary changes. The Northern Rockies regional district was created in 1986 out of parts of the Stikine and Peace. Since data before this date cannot be accurately assigned, we amalgamated the three districts. A similar caveat is required for the Fraser Valley.³ This regional district is an amalgamation of three earlier districts. Counts for the Fraser Valley and the GVRD also reflect boundary changes between these districts in 1986 and 1995.

We selected three commodities to document commodity price cycles: lumber, pulp, and copper. Lumber and pulp are British Columbia's most valuable and

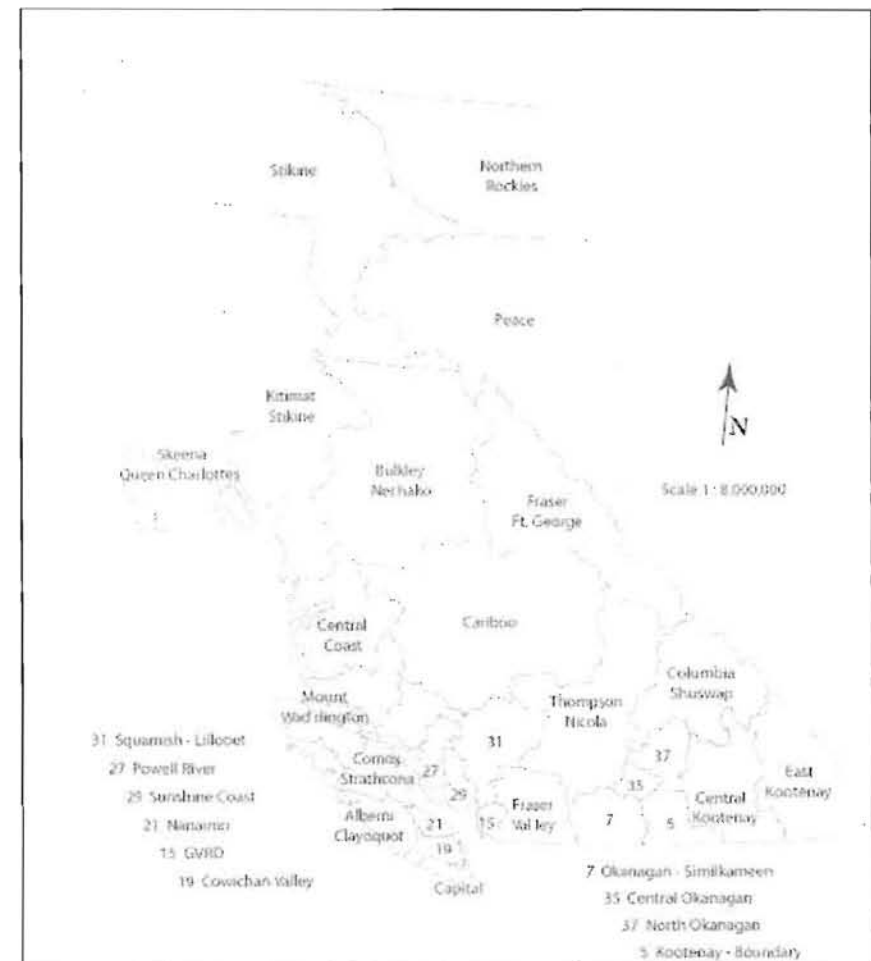


FIGURE 1

widely produced exports (Harris 2001). Copper is the province's most valuable metal: it ranks consistently as one of the mining sector's three most important exports. Copper is, furthermore, an industrial commodity whose price fluctuations closely reflect general economic conditions (Commodity Research Bureau 2001). Coal, natural gas, gold, fish, and agricultural commodities could also provide insight into migration patterns for specific regions. However, their economic and spatial impact is less significant. The lumber and pulp prices were extracted from Statistics Canada's CANSIM database while copper data were acquired from the

1. BC Stats, 2001. "British Columbia Regional District Migration Components". *Migration and Emigration*. British Columbia, Ministry of Management Services. http://www.bcstats.gov.bc.ca/data/pop/mig/comp_RDI.pdf and http://www.bcstats.gov.bc.ca/data/pop/mig/comp_RD.pdf.
2. Counts for the period 1976 to 1986 use a June through May year, while counts after 1986 are for a July through June year.
3. This decision may inflate the count of intraprovincial migrants slightly as people moving between these districts are included in the totals for the group.

BC Ministry of Energy and Mines.⁴ All commodity prices were converted to inflation-adjusted, annual averages for standard calendar years (January through December) where necessary. In addition to the commodities, we also included gross domestic product, unemployment, average personal income, and residential property time series in the analysis. The first variable, also acquired from CANSIM, was used to provide a broader assessment of fluctuations in the province's economy. The unemployment, income, and property data were collected at the regional scale to provide insight into job, wage, and cost-of-living differentials between the core and periphery. Unemployment rates were obtained from Statistics Canada's *Labour Force Annual Averages*, while the annual provincial publications, *Taxation Statistics* and *Municipal Statistics Including Regional Districts*, provided data for the income and property variables.⁵ In particular, we used the assessed value of residential property for school purposes as a proxy for housing values. These totals have been reported annually since 1984. We used annual changes in taxable land values to estimate values prior to this date. The income and property values were adjusted to reflect the effects of inflation and the latter were standardized by population counts.

Several of the time series were placed onto common scales by converting their values into ratios and indices. Our key dependent variables are intraprovincial migration ratios: this statistic is the ratio of in-migrants to out-migrants multiplied by 100. Values greater than 100 indicate that a census division or area is experiencing net in-migration from other areas of the province. Values below 100 indicate the opposite: net out-migration. Commodity price indices are annual values (in constant dollars) divided by the average value for the years 1976 to 2000 multiplied by 100. Index values greater than 100 are thus years in which commodity prices exceed the period's average. An unemployment differential and housing gradient were calculated in a similar manner. The unemployment differential is the ratio of the rate in the periphery to the rate in the core, multiplied by 100. The housing gradient is the ratio of the core's average residential property value per capita to the periphery's multiplied by 100. We used the difference in statistical years for migration and economic data to effectively create a six-month lag between the dependent and independent variables: for example, commodity pricing for 1981 was associated with migration data for 1981/1982. This lag probably overestimates the price sensitivity of resource companies with large capital investments; nevertheless, the 6-month lag for migration flows appears to fit the commodity and economic cycles well.

4. Statistics Canada CANSIM tables "Industry price indexes for lumber, sawmill, other wood products, furniture and fixtures, paper and paper products, printing and publishing, monthly", time series "LUMBER & TIES, SOFTWOOD" (P2442 and P4781) and "WOODPULP, SULPHATE, BLEACHED" (P2535 and P4876). British Columbia, Ministry of Energy and Mines, Programs and Services, "British Columbia Producer Prices, 1901 to 2000," available at <<http://www.em.gov.bc.ca/mining/MiningStats/22priceprod.htm>>.
5. Statistics Canada, Labour Force Survey Division, *Labour Force Annual Averages*, volumes, 1975-1983, 1981-1988, 1989-1994, catalogue 71-529, and CANSIM tables 282-0053, *Labour Force Survey Estimates*, by Census Metropolitan Areas and 282-0055 *Labour Force Survey Estimates*, by Economic Region. BC Stats, *Taxation Statistics*. BC, Ministry of Community, Aboriginal and Women's Services, *Municipal Statistics, including Regional Districts*.

Standard correlation and binomial tests were used to assess the relationships between the migration ratios and the independent variables. The binomial test was included due to concerns about the brevity of the times series (12 to 25 years) and the potential impact of extreme values. The binomial tests measure the degree to which the migration ratios and the independent variables change in the same direction on an annual basis. The results of these tests are interpreted in the same way that parametric tests of correlation are. Periods in which the time series moved in lock step, and are thus well correlated, are associated with low probability values. To identify regional patterns in the migration time series, we used divisive, hierarchical cluster analysis.⁶ Cluster analysis is an exploratory, descriptive technique that helps clarify patterns in data (Griffith and Amrhein 1997). The divisive approach is one of several cluster analytic strategies. Unlike agglomerative methods, divisive strategies progressively split data into smaller groups by iteratively searching for the most significant division in existing groups. Kaufman and Rousseeuw consider this approach advantageous when "users are interested in the main structure of their data" because its top-down procedure means that major groups are less likely to be affected by "unfortunate" decisions made at earlier stages in the analysis (1990: 49). We checked the credibility of the groupings suggested by the cluster analysis though visual inspections of the graphed time series and comparisons with alternative clustering algorithms.

We assessed the clarity and character of the geographical solution by associating the proposed regional structure with basic economic and demographic measures. In particular, we used data from the *B.C. Local Area Economic Dependencies and Impact Ratios* study. This study is an economic base analysis of regional economies in the province's periphery. It provides estimates of the relative importance of basic income sources as well as assessments of economic diversification, multiplier effects, and vulnerability to "potential downturns in the forest sector" (BC Stats 1999a: 44). We adapted the study's results by aggregating its local economic areas into regional districts and cluster groups using conventional weighting and averaging procedures. We also compared the cluster groups using regional district migration, commuting, labour force, and demographic data reported in the 1996 and 2001 Censuses.

Migration and Staples

The Broad Pattern

The broad migration patterns for the core and periphery are shown in Figure 2. Figures 2a through 2d respectively document the number of interprovincial and international migrants entering and leaving the core and periphery over the study

6. We used the Diana divisive cluster algorithm (Euclidean metric) in the R statistical package (Ihaka and Gentleman 1996).

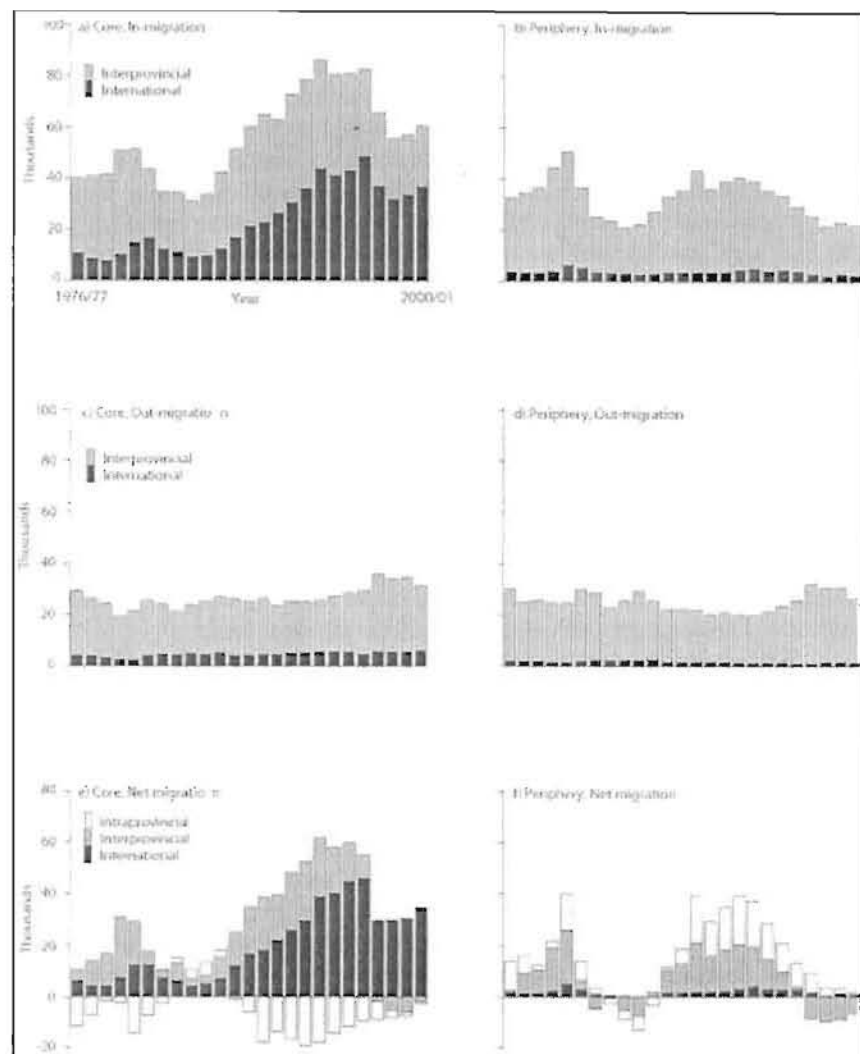


FIGURE 2

period.⁷ Figures 2e and 2f show net intraprovincial, interprovincial, and international migration for the core and periphery. The core's role as gateway to the province is evident, receiving a clear majority of international immigrants throughout the study period (and over 90 % since 1995) and approximately one-half of the interprovincial immigrants. The importance of international migration, moreover, has increased steadily in this region. International migrants have recently out-

7. Due to limitations in the data, gross in and out-migration totals cannot be estimated for intraprovincial flows.

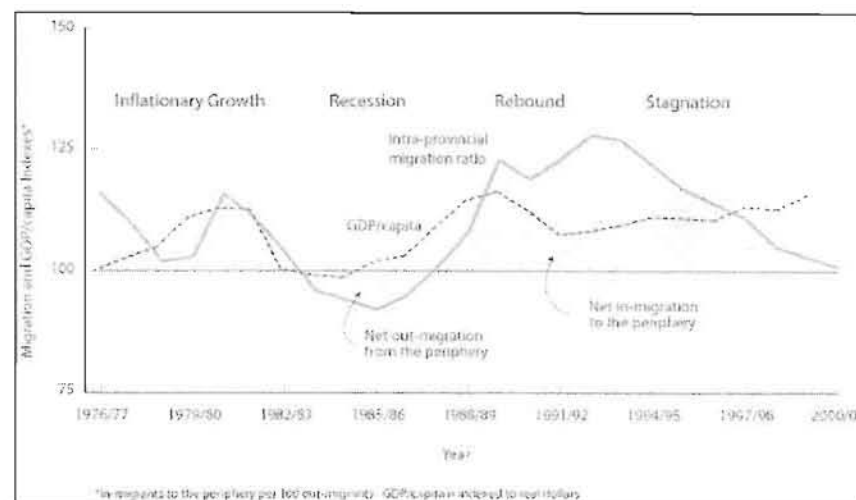


FIGURE 3

numbered Canadian migrants and in some years accounted for all of the core's positive net migration. This development reflects Vancouver's increasing status and its strong connections with countries around the Pacific Rim (Ley and Murphy 2001). The core's role as a principal source of migrants to the periphery is also readily apparent in the net-migration totals (Figure 2f). More residents of the core moved to the periphery than visa versa in all but four of the twenty-four years examined. Intraprovincial in-migrants accounted, furthermore, for 40 % or more of net migration flows in the periphery in most years, with interprovincial migrants contributing most of the rest. In contrast to the core, international migrants are the least significant component of migration flows in the periphery of the province, typically representing less than 10 % of the net flows. International migration to the periphery does not appear to have benefited, furthermore, from the rapid growth of this component in the core over the last fifteen years. As observed by Ley and Smith (2000), recent international migrants to Canada have focussed principally on the country's largest metropolitan centres.

The expected connection between migration and the health of the economy is apparent in the cyclical fluctuations of the net migration totals. Net migration flows in the periphery rose during the late 1970s, fell into negative territory in the recessionary years of the early 1980s, rose again in the expansionary latter half of the decade, and then declined through the economic slowdown of the late 1990s (Figure 3). The longitudinal patterns for the core are similar, with intraprovincial flows, by definition, tracing the inverse of the periphery's totals. The magnitude and rapidity of changes in the intraprovincial and in-migration totals suggests, furthermore, that these components are extremely responsive to economic fluctuations. For example, the periphery's total net in-migration was over 40,000 in 1980/81; two years later, the total was -800, in 1985/86 -12,500, and in 1989/90 close to 40,000. The totals in the first and last example were equivalent to 3.2 and

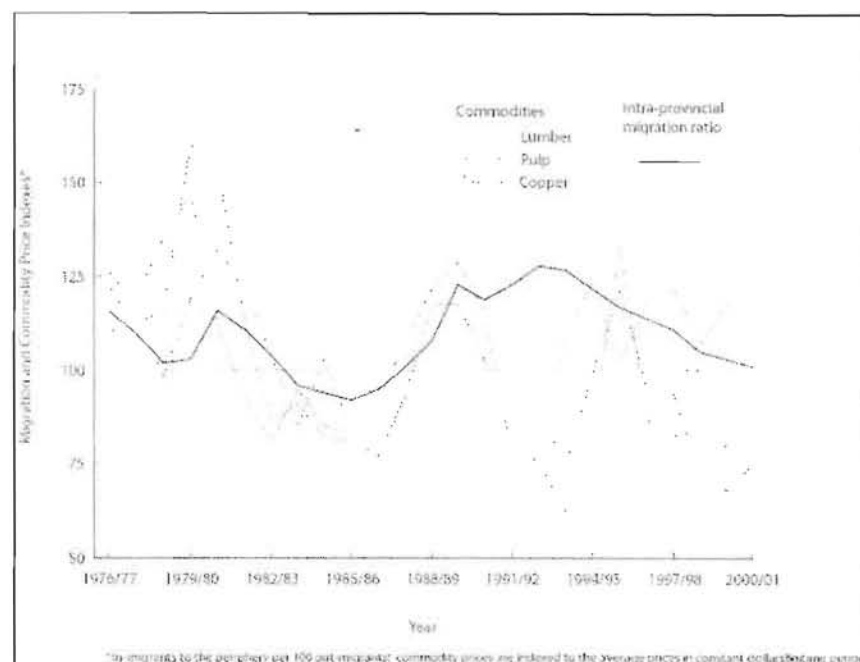


FIGURE 4

2.7% of the region's population, with total in-migration respectively exceeding 12.1 and 9.2% of its population base. The variation in the core's net migration has also been substantial, although not as great as in the periphery due to the moderating impact of intraprovincial flows. In both regions, variations in in-migration and intraprovincial flows are principally responsible for the fluctuations in net migration. Out-migration totals have been remarkably consistent over time, recording on average less than half of the annual variation of the in-migration flows.

Figures 4 and 5 further explore the connection between intraprovincial migration flows and economic cycles. Figure 4 compares the periphery's intraprovincial migration ratio to lumber, pulp, and copper price trends while Figure 5 focuses on regional unemployment rates. The commodity trends coincide best with theoretical expectations over the first half of the study period (1976 to 1988). All of the correlation and binomial test values are in the expected directions, with most exceeding or close to standards of significance (Table 1). However, over the second half (1988 to 2001), the relationships are not only weaker, but, for two of the three, opposite to the directions expected. The unemployment trends follow a similar pattern. While the periphery's unemployment rates were higher in every year, the difference in rates between the periphery and the core has varied with economic cycles. The difference was smallest in the expansionary years of the late 1970s. When the recession hit, the difference increased, and continued to do so until the economy began to recover in the mid 1980s. Changes to this point in time probably reflect differences in the structure and resiliency of the regions' econo-

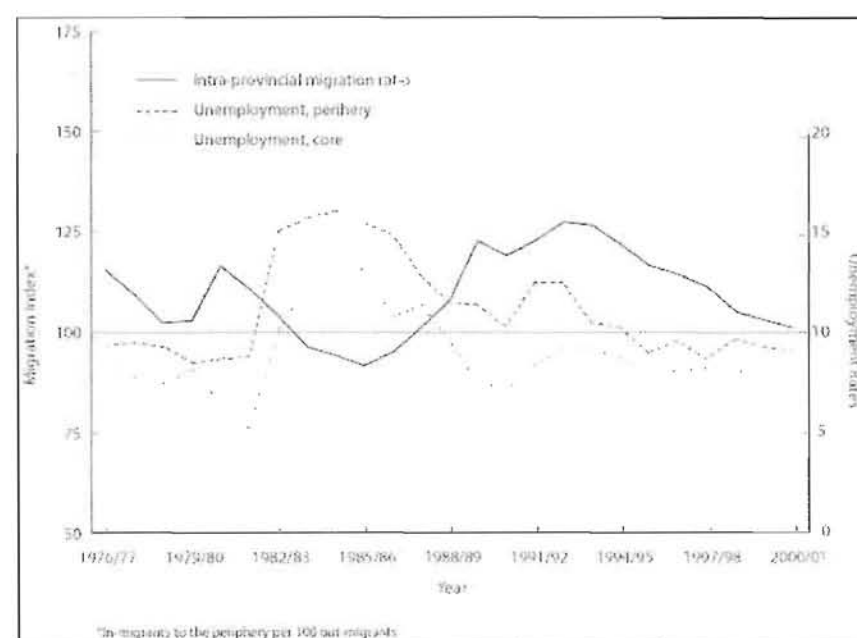


FIGURE 5

TABLE 1 Relationships Between the Periphery Migration Ratio and Economic Measures

| Period | Statistic | Economic Measures | | | |
|-----------|-----------------|-------------------|-------|--------|--------------------------|
| | | Lumber | Pulp | Copper | Unemployment (periphery) |
| 1976-1988 | Correlation (r) | 0.37 | 0.91* | 0.69* | -0.80* |
| | Binomial (p) | 0.39 | 0.00 | 0.19 | 0.07 |
| 1988-2001 | Correlation (r) | -0.32 | -0.13 | 0.28 | 0.62* |
| | Binomial (p) | 0.87 | 0.29 | 0.13 | 0.71 |

Note: * = Significant at $p < 0.05$

mies and thus fit the staples and migration pattern well (Davis 1993). However, after this point, the relationship between unemployment and migration inverts. Differences in regional unemployment rates were greatest during economic upswing of the late 1980s and early 1990s, a time when migration to the periphery was on the rise. In the economically stagnant mid and late 1990s, the migration ratio fell, as expected, but so too does the difference in unemployment rates.

These puzzling results must be interpreted cautiously, especially given the brevity of the time series. The temporal variation in the migration correlations may in part be attributable to internal variations in the time series or to changes in the

lag period between migration and economic events. For example, the higher correlations for commodity prices before 1989 may be unusual in the sense that they are likely inflated by the severity of the recession. Normally, price trends for industrial commodities will vary across business cycles, with lumber and pulp prices often moving in counter-cyclical patterns. However, between 1980 and 1985, historically high interest rates and the subsequent economic fallout caused the demand for almost all major commodities to fall in unison. The strength of the inflation-fuelled expansion of the late 1970s and the subsequent depths of the recession may similarly have demanded more rapid responses on the part of migrant labour than less dramatic economic cycles subsequently have. A precise assessment of the importance of these internal factors is beyond the scope of this paper. The results of the binomial tests suggest, nevertheless, that internal variations probably account for only part of the periodic differences. The binomial test is not affected by the magnitude or consistency of changes in a time series – it is only sensitive only to the direction of change. The fall in significance levels for this test thus cannot be attributed to changes in the scale or annual volatility of commodity prices, economic output, and unemployment after 1988. Experiments with lag periods of two or three years, furthermore, did not appreciably affect the binomial or correlation results.

Several structural forces may be responsible for the changing intraprovincial migration pattern. We suspect, for example, that the shift from Fordist to post-Fordist modes of production in British Columbia's staples industries has moderated intraprovincial migration flows over the last fifteen years. In response to the recession of the early 1980s, many resource firms adopted flexible and technology-centred production models in an attempt to cut labour costs, stabilize revenue, and adapt quickly to increasingly fluid market places (Barnes et al 1992; Hayter 2000). This strategy, coupled with a cautious corporate climate, resulted in modest job growth during the economic recovery of the late 1980s and even the mild recession of the early 1990s.⁸ In a similar fashion, recent labour agreements that tie wages to commodity prices, emphasize "functionally flexible" employees, and permit greater use of temporary workers, have probably reduced job losses and thereby the outflow of migrants (Hayter 2000: 269). While the periphery's migration ratio has declined steadily since 1992, the decline is moderate in light of the challenges faced by the province's staples economy: volatile commodity prices, grievous U.S. softwood tariffs, weak export markets, stiff competition, strict environmental legislation, and First Nations' land claims (Figure 3). Flexible employment strategies and investments in technology have enabled companies to meet these challenges by lowering costs and shifting production rather than through lay-offs and closures.

8. British Columbia's gross domestic product shrank in real dollar per capita terms between 1990 and 1992 (CANSIM table 384-0001, *Gross Domestic Product, income-based, British Columbia*). However, the decline was mild compared to other provinces. The labour force grew over 4% over this 2-year period, about 1% less than the population (CANSIM table 282-0010, *Labour force survey estimates*). International investment and migration, especially within Vancouver, helped buoy the provincial economy at this time.

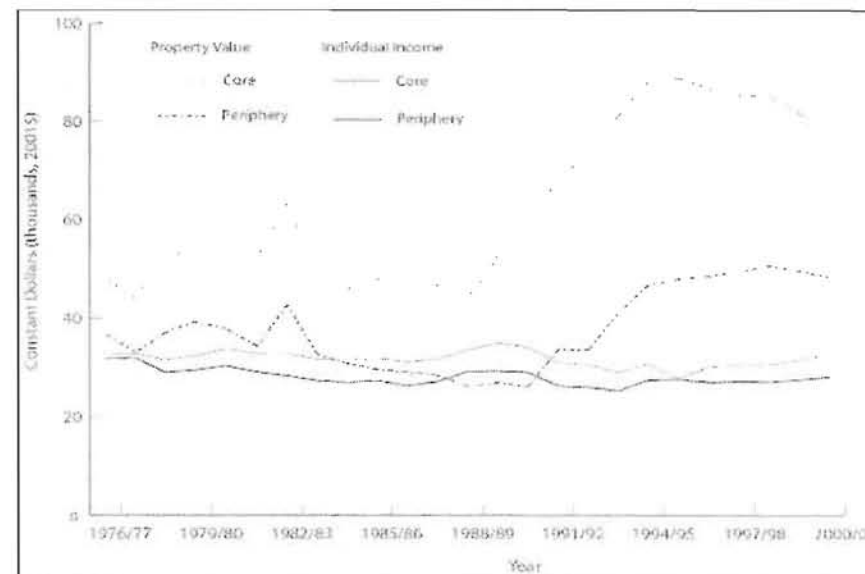


FIGURE 6

The relative pull of the core and periphery has also been affected by Alberta's vibrant resource sector, weak Asian economies, expanding service sector employment in the periphery, an aging population, and escalating property values. The precise impact of these forces is difficult to estimate and disentangle; nevertheless, data-at-hand do suggest that the latter may have played a particularly important role. While real average incomes have been remarkably stable in both the core and periphery over the past 25 years, real housing costs have risen substantially (Figure 6). From 1976 to 1990, residential property values per capita in British Columbia averaged 1.4 times tax filer's income. Since then, the ratio has averaged over 2.3, with the most dramatic changes occurring between 1990 and 1995. This increase has not been felt, furthermore, equally across the province. Residential property values rose from 1.5 to almost 2.7 times income in the core, but only from 1.1 to 1.6 in the periphery. As a result, the province's housing gradient has steepened.⁹ This gradient is undoubtedly one of the driving forces – as suggested by studies of migration in non-metropolitan areas of the western United States – behind the recent growth of commuter neighbourhoods in the Fraser Valley, and retirement and life-style communities in the southern interior and on Vancouver Island (Power and Barrett 2001; Booth 2002). It may also function as a barrier to migration in the opposite direction, and thereby account for some of the migration ratio's

9. This results coincides also with studies by the American Chamber of Commerce Research Association that indicate that communities in the interior of British Columbia are now among the least expensive places to live in North America (Venture Kamloops 2002). Vancouver's housing market, in contrast, is one of the most expensive in Canada.

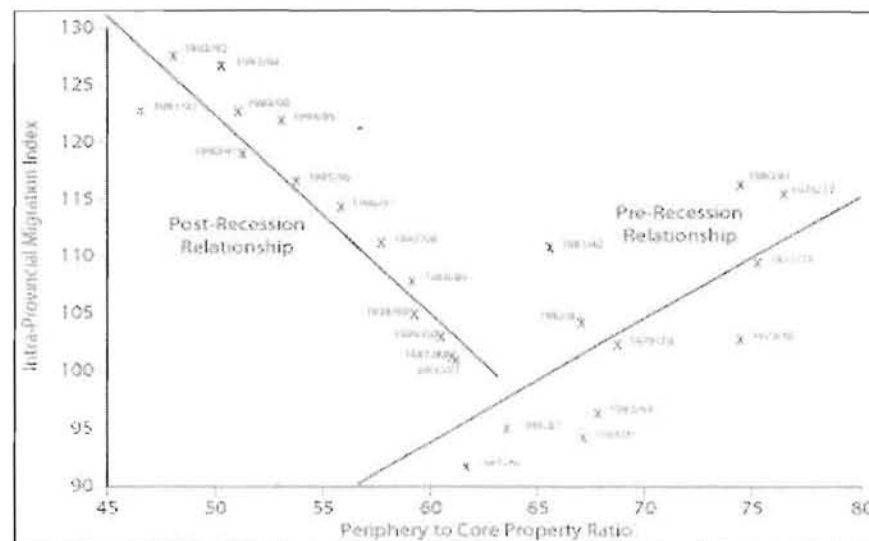


FIGURE 7

recent resiliency. Escalating property values have eliminated the core as a potential destination for many displaced workers in the periphery.

As shown in Figure 7, intraprovincial migration and the core-periphery housing differential have tracked one another closely over the second half of the study period. Since 1988, these trends have moved in the same direction in every year but one. The correlation value for this period is a remarkable 0.95. The correlation value for the first half is less significant but still relatively strong. It is, however, in the opposite direction. These results must be interpreted cautiously given the brevity of the time series, the influence of confounding variables, and the method used to estimate property values between 1976 and 1983. The change in the direction of the correlations suggests, nevertheless, that the relationship between housing and migration has inverted. In the first half, the housing gradient appears to be the dependent variable, reflecting relative changes in demand caused by cycles of migration and thus the health of the province's staples economy. In the second half, it plays the opposite role, pushing migrants into the periphery and restricting the flow into the core.

If correct, this interpretation provides further evidence that the connection between migration and staples has weakened since the recession. More boldly, it may also imply, if the findings of American geographers and economists are a guide, that staples are no longer the dominant force driving intraprovincial migration in British Columbia. While it is probably premature to argue that British Columbia's periphery, as a whole, has also entered a "post-cowboy" phase of economic development, the data presented thus far confirm our suspicions that the core is not the only area experiencing economic and social change.

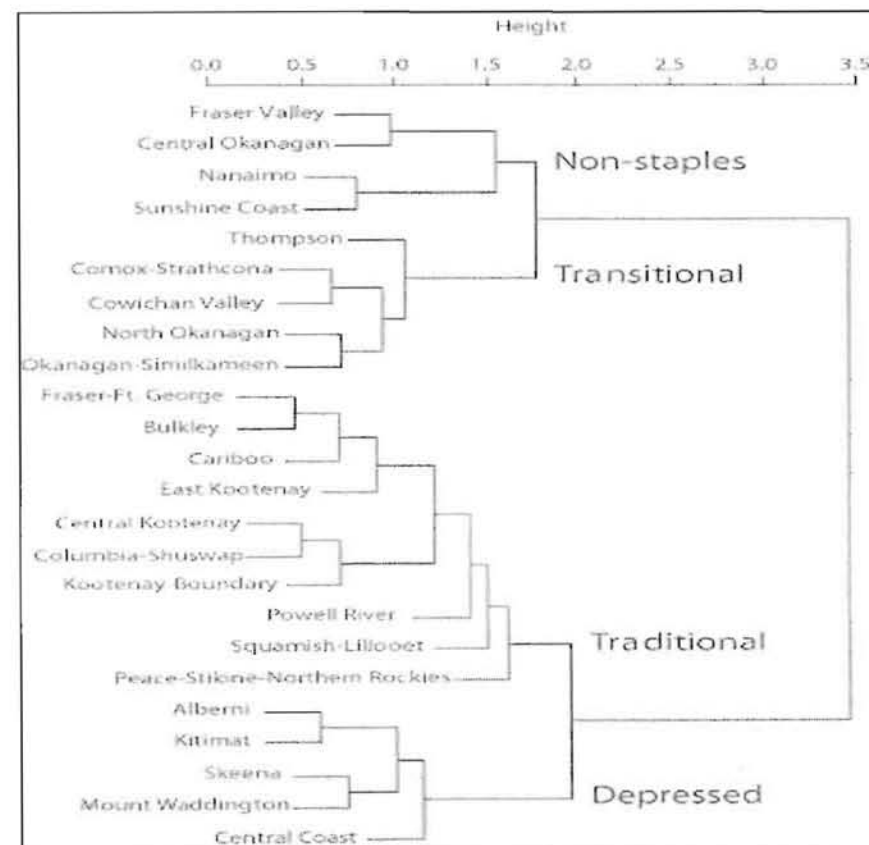


FIGURE 8

Regional Patterns

The patterns described thus far are relatively simple in the sense that the analysis treats the province beyond Vancouver and Victoria as a single region, and thus ignores the significant economic differences that exist in the interior of the province. This section offers a more geographically nuanced interpretation by means of the cluster analysis procedure described earlier. The results of the cluster analysis are shown in Figure 8 in the form of a dendrogram.¹⁰ The results suggest that the periphery can be broken into four major groups of geographical districts that display similar intraprovincial migration characteristics. Subsequent divisions would create splinter groups of one or two regional districts (e.g. Squamish-Lillooet).

10. A dendrogram is a tree diagram that illustrates both the hierarchical structure of the groups and the relative significance and order of the divisions between groups. The most important divisions (where between group differences are greatest) are associated with the largest height values and the longest horizontal branches. The divisive coefficient for the analysis is 0.76 -- values can vary between 0 and 1 -- which indicates that the clarity of the overall structure is quite good.

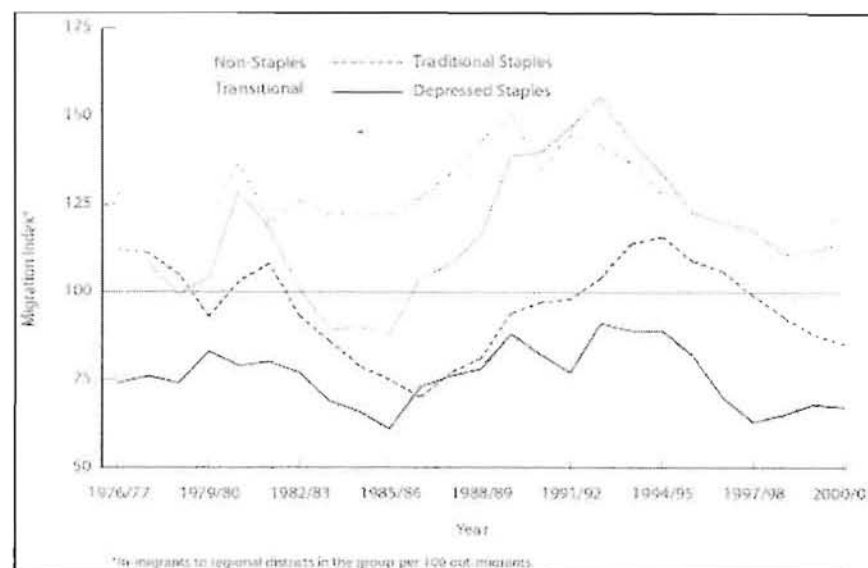


FIGURE 9

oet, Nanaimo-Sunshine Coast). Experiments with agglomerative clustering algorithms produced virtually the same structure, confirming the stability and character of the divisive four-group result. The Thompson-Nicola district is the only region that shifts between major groups in alternative solutions. An explanation of this instability is offered below.

Aggregating the district migration data, and comparing these data to other demographic and economic measures, provided a check on the clarity and consistency these groups. Each group was given a descriptive label: Non-staples, Transitional, Traditional Staples, and Depressed Staples. The results of these steps support the cluster analysis and, by extension, our position that the periphery cannot be treated as a single region. There are, for example, obvious differences in the magnitude and amplitude of the aggregated migration trends (Figure 9). There are also remarkably systematic and statistically significant variations along the demographic and economic dimensions (Tables 2 and 3). Except for a small variation in the percent of income obtained from transfer sources, all measures increase or decrease in tandem with aggregated, average migration ratios. The spatial patterns created by the assigned regional districts are highly clustered, especially when compared to the dispersed patterns found in similar studies of migration in the American west (Booth 1999) (Figure 10). Ignoring the influence of water and international borders, and discounting the idiosyncratic borders of some of the regional districts (i.e. Comox-Strathcona, Squamish-Lillooet), the groups form mutually exclusive bands, with a few exceptions, around the core. This pattern underscores the dominance of the province's primate city, and consequently of the core's influence over migration patterns. As in the western United

TABLE 2 Demographic and Economic Characteristics of Migration Regions

| Measure | Regional Economies | | | | |
|-----------------------------------|--------------------|-------------|--------------|-------------|-----------|
| | Core | Non-Staples | Transitional | Traditional | Depressed |
| Mean Migration Ratio | 75 | 129 | 123 | 109 | 82 |
| Demographic ¹ | | | | | |
| Population | 2,149,654 | 505,635 | 434,985 | 515,639 | 118,587 |
| Pop. Density (per sq km) | 485.6 | 21.3 | 5.0 | 0.8 | 0.7 |
| Age Over 65, % | 11.9 | 14.8 | 14.1 | 9.2 | 6.8 |
| Employment Income | | | | | |
| Ave. Income ¹ | 28,792 | 24,669 | 24,944 | 26,364 | 27,925 |
| Adj. Ave. Income ^{1,2} | 28,792 | 28,911 | 31,874 | 34,490 | 35,979 |
| Basic Sector Income ³ | | | | | |
| Primary, % | -- | 13.7 | 22.8 | 33.7 | 42.4 |
| Transfer, % | -- | 32.3 | 33.2 | 24.0 | 18.7 |
| Diversification ⁴ | -- | 72.1 | 70.8 | 67.3 | 64.6 |
| Forest Vulnerability ⁴ | -- | 8.1 | 17.7 | 33.8 | 46.4 |
| Labour Force ¹ | | | | | |
| Unemployed, % | 8.4 | 10.3 | 11.3 | 11.3 | 13.7 |
| Primary, % | 2.1 | 7.5 | 11.5 | 12.8 | 14.2 |
| Business services, % | 15.8 | 9.5 | 7.9 | 6.8 | 5.1 |

Note: 1. Adapted from the Census of Canada, 1996.
 2. Income was adjusted to reflected variation in the cost of housing.
 3. Adapted from BC Stats (1999).
 4. These values are indexes. Diversification varies from 0 (dependent on a single sector) to 100 (balanced sectors). The vulnerability index assesses income dependency in terms of "the vulnerability of each local area to potential down-turns in the forest sector" (BC Stats 1999: 44). The values are normalized for the province. The communities with the lowest and highest vulnerabilities were respectively assigned values of 0 and 100.

TABLE 3 Percentage Population Change in the Core and Peripheries, 1976 to 2001

| Region | 1976-1981 | 1981-1986 | 1986-1991 | 1991-1996 | 1996-2001 |
|--------------|-----------|-----------|-----------|-----------|-----------|
| Core | 6.6 | 8.5 | 16.3 | 13.0 | 7.6 |
| Non-Staples | 13.3 | 7.4 | 20.9 | 20.2 | 6.4 |
| Transitional | 10.9 | -0.2 | 12.5 | 15.7 | 0.5 |
| Traditional | 10.3 | -1.6 | 3.2 | 10.0 | -1.1 |
| Depressed | 3.2 | -4.9 | 3.1 | 3.6 | -7.4 |

migration in the American west (Booth 1999) (Figure 10). Ignoring the influence of water and international borders, and discounting the idiosyncratic borders of some of the regional districts (i.e. Comox-Strathcona, Squamish-Lillooet), the groups form mutually exclusive bands, with a few exceptions, around the core. This pattern underscores the dominance of the province's primate city, and consequently of the core's influence over migration patterns. As in the western United States, regions that are adjacent to, or that have convenient access to metropolitan areas, have higher and more stable migration ratios than their more distant counterparts. Booth (Booth 1999) argues that this pattern is a product of migrants balancing amenity against accessibility. In British Columbia's case, it also likely reflects

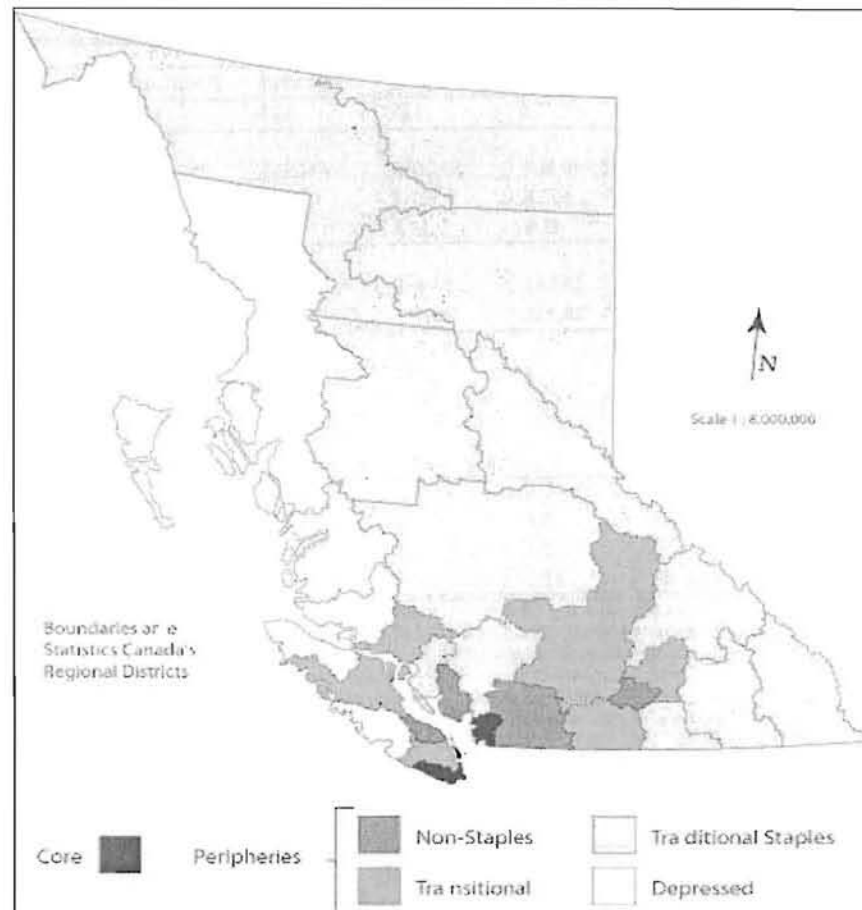


FIGURE 10

the spatial variations in amenities (e.g. climate and waterfront) and economies. The next section explores these variations in greater detail.

Non-staples

The non-staples group consists of four regional districts that have consistently received more intra-provincial migrants than they have sent out. The regions in this group are the Central Okanagan, Fraser Valley, Sunshine Coast and Nanaimo. The first two have never experienced net annual out-migration over the past 25 years. Collectively, this group also displays the least volatility in migration and the least connection with commodity prices (Table 4). These results are not surprising. Three members of this group border the core. Migration flows for the Fraser Valley, in particular, are affected by its proximity to the GVRD. The Fraser Valley

TABLE 4 Relationships between Migration and Commodity Prices in Peripheral Regions

| Period | Region | Correlation Coefficients (r) | | |
|-----------|--------------|------------------------------|-------|--------|
| | | Lumber | Pulp | Copper |
| 1976-1988 | Non-Staples | -0.15 | 0.45 | 0.13 |
| | Transitional | 0.24 | 0.88* | 0.62* |
| | Traditional | 0.55 | 0.71* | 0.63* |
| | Depressed | 0.52 | 0.73* | 0.70* |
| 1988-2000 | Non-Staples | -0.73* | 0.25 | 0.39 |
| | Transitional | -0.58* | -0.16 | 0.04 |
| | Traditional | 0.37 | -0.32 | -0.04 |
| | Depressed | -0.41 | 0.17 | 0.36 |

Note: * = Significant at $p < 0.05$.

is the most popular destination for intra-provincial migrants from the GVRD. Approximately one in four of the GVRD's out-migrants relocate to the Fraser Valley, accounting for 75 % of the latter's in-migration. This flow is driven by growth in the core and by differences in land costs. As the GVRD's population doubled between 1976 and 2001, the western margins of the Fraser Valley regional district were increasingly transformed into commuter suburbs. Nineteen percent of the Fraser Valley's labour force (and nearly twenty-three percent of its male labour force) works in a different regional district.¹¹ As predicted by urban geographers in the 1970s (Hardwick 1972), the growth of Vancouver's urban field has also influenced the development of Nanaimo and the Sunshine Coast. Long distance commuting rates for these districts (7.7 and 9.7 % respectively) are well above the provincial average (3.8 %). However, given the distance, cost, and inconvenience of commuting by conventional means from these areas to either Vancouver or Victoria, amenities, lifestyle, and communications technology are undoubtedly also important factors driving in-migration. The Nanaimo regional district includes the retirement communities of Parksville and Qualicum Beach, both of which recorded growth rates in excess of 30 % between 1991 and 2001.

The Central Okanagan contains the Kelowna census agglomeration, the largest urban centre in the interior. Between 1976 and 2001, the population of this area doubled and is now just shy of 150,000. Like the other members in this group, the Central Okanagan's recent growth has had little to do with staples (Momer 1998). The Central Okanagan has one of the least staples dependent, and most diversified economies in the periphery. Despite its historical association with fruit production and the recent maturation of the Okanagan's wine industry, staples only account for 6 % of basic income in the Central Okanagan. Tourism, small-scale manufacturing, and regional retail, business, medical and educational services are now the dominant sectors of the local economy. Kelowna is also home to a small, but

11. It could be argued on this basis that the Fraser Valley should be considered as part of the core. Experiments with this geographical organization, however, did not affect the general geographic patterns described in this study.

expanding high-technology sector. Local economic development statistics suggest that this sector grew 15 % annually in the late 1990s, making the city, according to the Central Okanagan Economic Development Commission, one of Canada's five "high-tech boom towns".¹² The region is trying to build on this success, promoting the "Silicon Vineyard" to "new ventures and growing companies looking for a lower cost, higher quality community" (Central Okanagan Economic Development Commission 1999). The Central Okanagan's recreational, climatic, and scenic amenities also make it a popular destination for retirees. Approximately 10 % of the district's intra-provincial in-migrants, and 18.5 % of its total population, are seniors. Against the latter measure, Kelowna ranked first among Canada's 46 largest cities in 2001.

Transitional

The aggregated migration ratio for the five regional districts in the Transitional cluster group — two of which are located in central Vancouver Island, and the others in the south-central interior — has typically exceeded 100, which means that net migration has generally been positive (Figure 9). However, in comparison to the Non-staples group, the ratio has been much more volatile. All of the districts have experienced at least three years of net out-migration since 1976.

The migration pattern for the Transitional group most closely resembles the periphery's as a whole (Figure 9). Over the first half of the time series, the migration ratio is very responsive to fluctuations in commodity prices, as evident in the magnitude of the drop in the migration ratio in the early 1980s, and by the equally dramatic rebound in the latter part of the decade. In the 1990s, in contrast, swings in commodity prices appear to have had a minimal impact on migration flows. While the migration ratio gradually declined, none of the regional districts in this group experienced net out-migration during this decade.

Several factors are responsible for the shift in the migration pattern. As suggested for the periphery generally, the weaker association between migration and commodity prices may reflect the post-Fordist adjustments some resource companies made in response to the recession. For example, when MacMillan Bloedel closed its old Chemanius sawmill in 1982 (Cowichan Valley regional district), it laid off 650 employees (Hayter 2000: 131). Three years later, the company opened a new mill on the same site that employed only 125. Part of this decline was attributable to reduced production volumes; however, many jobs were displaced by automated and computerized production facilities. The company also sought and received concessions on "flexible work conditions" from the union, and shifted its production strategy to place greater emphasis on high-value, customized products (Hayter 2000: 132). These efforts to lower costs and maximize revenue have helped insulate the mill, and thereby its current workforce, from business and commodity price cycles. Similar adjustments have been made throughout the

coastal forest industry as well as in the province's mining sector. A recent example of the latter is the current labour and energy contract between Teck Cominco, its Highland Valley workforce, and the provincial government. The contract minimizes the impact of commodity cycles on the mine's operations by tying wages and power rates to the world price of copper. Company officials argued that without this agreement, the mine — one of the world's largest and one of BC Hydro's largest consumers — would not be profitable during low points in the cycle (Cominco 1999). To drive the point home, the mine closed briefly for four months in 1999, laying off 1000 high-wage employees in the process. Since re-opening, the mine has operated in the black despite low copper prices.

Detailed migration statistics also suggest that the movement of seniors within the province has also positively affected migration ratios, although not to the same degree as the Non-staples group. Like regions in the Non-staples group, this age-based migration is associated with climate, lifestyle, and recreational amenities. The Okanagan-Similkameen, in particular, has witnessed significant inflows of retirees. At 25 %, this district has the highest proportion of seniors in the province. The proximity of these districts to larger regional centres has also had an impact on their regional economies, and consequently, on their migration ratios. The largest migration flows for these regions, with the exception of the Thompson-Nicola district and not including moves to and from the core, are with their Non-staples neighbours. This pattern is, in part, a product of distance — migration rates tend to be inversely correlated with distance — as well as a reflection of the importance of Nanaimo and Kelowna in the province's urban hierarchy. In addition, place-of-work data indicates that connections between the Cowichan Valley and Nanaimo (and Victoria), and the North and Central Okanagan, are especially strong. The long distance commuting rate for the Cowichan Valley (17 %) is second only to the Fraser Valley while the North Okanagan's rate (8.4 %) ranks fifth.

The Thompson-Nicola is an anomalous member of the Transitional group in terms of its economic and demographic composition. This district includes the city of Kamloops, one of the three main regional, service centres in the interior (the others are Kelowna and Prince George). Kamloops has always had one of the most diversified economies in the periphery due to the variety of staples produced in the region and its location at the junction of major transportation routes. In recent years, its economy has continued to diversify through the expansion of educational, public service, and regional retail functions (MacKinnon and Nelson 2003/04). These quaternary and service functions now account for the largest and fastest growing sectors in the local economy. In-migration is thus driven more by its internal economy than by its associations with other districts in the Non-staples group. The principal sources and destinations of intra-provincial migrants is another factor that distinguishes the Thompson-Nicola from other Transitional districts. After the core, the Thompson-Nicola was the most popular destination for intra-provincial migrants from the Fraser Valley, Squamish-Lillooet, Cariboo, and Fraser-Fort George (Prince George) districts, and the second or third most popular destination for eight others between 1991 and 1996. While the Central

12. *Kelowna Daily Courier*, 11 April 2001.

Okanagan and Fraser Valley attracted more migrants in total, the Thompson-Nicola was the number one destination for people living in the periphery. It attracted almost 25 % more migrants from the periphery than its closest competitors (Nanaimo and the Central Okanagan) over these years. In total, 18 of 26 regional districts sent more migrants to the Thompson-Nicola than to the Central Okanagan. In relative terms, young adults tend to account for a higher percentage, and seniors and older adults (55 to 65 years of age) a smaller proportion, of these flows than other districts in the southern periphery. Given these data, the Thompson-Nicola has, not surprisingly, the smallest percentage of seniors among districts in the Non-staples and transition groups.

The Thompson-Nicola's unique migration, economic and demographic profile provides some insight into the instability of its regional classification. The region's traditional, and still important, resource sector has made it more vulnerable than most districts in the transitional group to commodity price swings. Fluctuations in its migration ratio have also been tempered less by the relocation of seniors than in other Transitional and Non-staples districts. From this standpoint, the association of this region with those in the Traditional Staples group (Columbia-Shuswap, Central Kootenay, and Kootenay-Boundary sub-cluster) in statistical terms is understandable. However, at the same time, the region's relatively diverse economy and educational opportunities, and its popularity with migrants from other areas of the periphery, have amplified in-migration during economic upswings and moderated declines during the stagnant latter half of the 1990s. If the quaternary functions of this area continue to grow, and its recreational and community amenities expand, the migration pattern of this region may become more closely related to those of the Non-staples group.

Traditional Staples

The general migration trend for the Traditional Staples group is similar to that of the Transitional group. The patterns of both groups have broadly moved in concert with economic cycles over the past 25 years. Indeed, between 1976 and 1983, there is little difference in the magnitude or volatility of migration ratios between these groups. Still, while the trends have paralleled one another since the mid-1980s, they have also diverged, with the Traditional Staples group consistently recording lower average migration ratios. This group has also experienced longer and more significant periods of out-migration. In 1986/87, at the end of the recession, the Traditional group collectively received only 70 migrants for every 100 that moved away. In contrast, the Transitional group's lowest migration ratio was 88 per 100 (in 1985/86). Regional districts in the Traditional group also displayed a slower and less vigorous recovery in the post-recession period. Their collective migration ratio did not exceed 100 until 1992/93, peaking at 116 two years later. The Transitional group, in contrast, moved into positive territory in 1986/87 and peaked at a much higher rate. Between 1989 and 1995, 134 or more persons moved into districts in the Transitional group for every 100 who left. While the

TABLE 5 Age of In-migrants to Selected Cities, 1991-1996

| Region | City | Age Cohorts (% Of City Total) | | | | |
|--------------|----------------|-------------------------------|----------|----------|----------|------|
| | | 5 to 19 | 20 to 34 | 35 to 54 | 55 to 64 | 65+ |
| Non-staples | Abbotsford | 23.2 | 31.1 | 28.6 | 7.9 | 9.2 |
| | Kelowna | 22.0 | 29.7 | 29.1 | 8.8 | 10.3 |
| | Nanaimo | 22.6 | 28.5 | 32.1 | 6.6 | 10.1 |
| Transitional | Campbell River | 24.5 | 31.5 | 31.7 | 7.5 | 4.7 |
| | Kamloops | 25.3 | 32.2 | 30.0 | 5.8 | 6.6 |
| | Vernon | 23.5 | 25.3 | 30.5 | 10.3 | 10.4 |
| Traditional | Cranbrook | 27.1 | 30.3 | 27.3 | 6.7 | 8.6 |
| | Fort St. John | 30.5 | 41.5 | 23.6 | 3.0 | 1.4 |
| | Prince George | 27.0 | 36.7 | 29.6 | 3.2 | 3.5 |
| | Williams Lake | 23.7 | 29.6 | 31.7 | 8.9 | 5.8 |
| Depressed | Terrace | 28.8 | 36.7 | 28.0 | 3.0 | 3.2 |

Source: Statistics Canada, Basic Summary Tabulations Series, catalogue number 95F0190X DB1996010, *Migrants 5 Years and Over, by Age Groups, and Sex, Showing Components of Migration (In- and Out-), for Census Agglomerations, 1996 Census*

ratios have dropped for both regions recently, only the Traditional Staples group has experienced net losses of intra-provincial migrants.

The divergence of these migration trends appears to reflect differences in the forces that drive migration. In particular, economic and demographic evidence indicates that the Traditional group's migration patterns are driven more by staples, and less by environmental and cultural amenities. This group's migration ratio has marginally stronger correlations with commodity prices and is the only group with a positive correlation with lumber prices since 1988 (Table 4). While the latter correlation is not statistically significant, it differs substantially from the statistically significant negative correlations recorded by the Non-staples and Transitional groups. It is also likely that the correlations between lumber prices and migration understate the traditional significance of this staple. As in other areas of the province, post-Fordist adaptations, rising tariffs, and changing environmental regulations have potentially reduced the impact of commodity prices on migration. Recent counter-cyclical fluctuations in key staples also appear to have moderated the average volatility of migration for the Traditional group.

More detailed migration data also lends indirect support to the relative importance of staples versus amenities for the Traditional group of districts. As shown in Table 5, the proportion of in-migrants to selected communities in the periphery varies systematically by age cohorts. In-migrants to communities located in the traditional staples group are more likely to be middle-aged adults with families and less likely to be seniors, than those relocating to districts in the Non-Staples and Transitional groups. This pattern makes sense, given the amenity orientation of many migrant seniors and the long, cold winters and relative isolation of regional

districts in the Traditional group, especially those in the central and northern interior.¹³ The pattern also supports the conclusions of Hayter (1979) and Halseth (1999) which point to the direct connection between employment opportunities and in-migration in the resource periphery. In his study of communities in the Cariboo, for example, Halseth concluded that employment, rather than a search for "some form of the rural idyll," was the principal factor driving in-migration. This study also suggests that the relationship between migration and staples is becoming more complicated in that economic restructuring is creating both a cohort of established but displaced workers who migrate between resource-dependent communities in search of employment, and a younger generation who are looking beyond the constricted opportunities of the staples industries (see also Behrisch et al 2002/03). Traditionally, the 20 to 34 age cohort -- the most mobile and the most employment sensitive -- should be similar to, or even more resource-oriented than that of middle-aged adults, especially during an economic upswing. However, as the random pattern of values for this age group indicates, the spatial and demographic framework of migration is changing in the periphery.

In making these general observations, it is important to also point out that this group is the least consistent of the clusters. The statistical analysis suggests that the traditional cluster can be broken into five sub-groups, three of which contain a single member (Figure 8). When examined separately, the Stikine, Peace, and Northern Rockies districts produced even more fragmented structures. The lack of coherence among members of this group reflects its size and diversity. The regional districts in this group -- stretching in a wide band from the southeast to the northwest -- encompass more than two-thirds of British Columbia's landmass. The most important exports in the area are dimensional lumber and related products. Lumber, however, is not the only staple. Pulp, coal, copper, gold, cattle, grains, tourism, metal smelting, and oil and gas are also significant in local contexts. The latter staples are, most likely, responsible for some of the unique fluctuations in the Stikine-Peace-Northern Rockies' migration ratio. Unlike other districts in this group and in the periphery as a whole, this region received more migrants than it lost between 1982 and 1985. Drilling activity increased in the Peace region at this time in response to record prices for natural gas, partially buffering the district from the recessionary forces that dampened migration elsewhere. A similar but inverted pattern occurred when petroleum prices declined after the Gulf War in 1991. Squamish-Lillooet is also an unattached regional district, and the only one that shares a border with the core. This region was the first to record net in-migration after the economic downturn of the early 1980s. Its migration ratio jumped from a low of 78 in-migrants per 100 out-migrants in 1984/85 to 116 one year later. This rapid reversal was a direct response to the expansion of the Whistler ski resort specifically and to the growth of a postproductive economy in the region generally (Reed and Gill 1997; Gill 2000). Recently, the Squamish-Lillooet district, like other regional districts in this group, has experienced several years of

net out-migration. It was the only Traditional district, nevertheless, that grew between 1996 and 2001.

By contrast, migration patterns in the Columbia-Kootenays cluster are similar to those of the Thompson-Nicola district and other members of the Transitional Group. In addition, this sub-group has the weakest correlation with commodity prices among districts in the Traditional cluster. It also appears that this subgroup has the greatest appeal to amenity migrants. The percentages of seniors in the Kootenay-Boundary (18.5), Columbia-Shuswap (16.9), and Central Kootenay (16.1) districts are both on par with those in the Okanagan and central Vancouver Island, and double those of their northern counterparts: Fraser-Fort George (7.4), Peace (7.9), and Bulkley-Nechako (8.2). Where this sub-group differs from its neighbours in the Transitional cluster is in the magnitude of its response to the recession and subsequent recovery. With a smaller, more isolated, and less developed economy, the migration ratios for the regional districts in the Columbia-Kootenays typically receive 15 to 20 in-migrants per 100 out-migrants less than those in the Transitional cluster.

Depressed Staples

The Depressed Staples cluster of districts faces the Pacific Coast (Figure 9). The five members of this group recorded the lowest average annual migration ratio for the twenty-five year period examined; on average 75 migrants per year moved into these regional districts for every 100 that left. Like the Traditional group, migration flows fluctuate in tandem with economic cycles. Uninterrupted net out-migration is, nevertheless, the distinguishing characteristic of this group. The five districts in this group have collectively recorded only 9 years of net intraprovincial migration out of the 125 possible.

The declining fortune of the forest industry is one of the main push factors behind this out-migration. Forestry employment has steadily declined across the province during the last two decades (Forgacs 1997: 170), with coastal communities among the most seriously affected by these job losses. Port Alberni, once the location of one of the largest integrated mills in the province, stands as an example of this transition. Between 1980 and 1997, MacMillan-Bloedel (now Weyerhaeuser) laid off approximately 50 % of its Port Alberni workforce, causing a series of economic (high unemployment, mortgage foreclosures), demographic (population loss), and social (depression and divorces) impacts (Hayter 2000: 299). Job losses in Port Alberni, and in other forestry-based communities along the coast, were associated with the shift to more flexible and technology-dependent production models. While this shift was not unique to coastal communities, the move towards post-Fordist production models was pursued more vigorously on the coast due to the high wood and labour costs in this region. According to Hayter (2000: 75), the British Columbia coast has the highest production costs in the world for softwood saw logs. Consequently, price-based competition has contributed to the closure of Gold River's mill and to the subsidization of other pulp mills in the region.

13. Other than Prince George (population 85,035 in 2001), there are no urban centres with populations greater than 30,000 in group three regional districts.

The decline of the coastal fishing industry has also contributed to this out-migration. As in the forest sector, the application of new technology has improved fishing efficiency but significantly reduced labour requirements (Ross 1987). Consequently, a series of studies have proposed reductions to the commercial fishing fleet (Wood and Corpé 2001). In the 1990s, implementation of such industry reform proposals reduced the commercial salmon fleet in half. Furthermore, a considerable decline in salmon stocks in this decade also contributed to job losses. In 1989, for example, 88,727 metric tonnes of salmon were caught in British Columbia's coastal waters; but by 1995, the catch had slumped to 48,793 metric tonnes, and in 1999, just 22,916 metric tonnes were landed (Canada 2002). Wages and salaries have declined even more precipitously (BC Stats 2002a). Over fishing, climate change, the loss and destruction of critical spawning grounds, and natural cycles are listed as contributing factors. Although a concomitant increase in fish farming, sport fishing, and eco-tourism, has offset some of these declines, limited employment opportunities in many small communities have encouraged many to relocate.

The impact of employment losses in the forestry and fishing sectors on intra-provincial migration has been amplified by the relative isolation and undiversified economies typical of this group. Districts in this group have generally not benefited from growth in the core or from the migration of retirees. These depressed districts are among, moreover, the least densely populated and least economically developed in the province. As a result, they have been less able to absorb displaced primary and secondary sector workers through the growth of services.

Conclusion

This study has examined changes occurring within British Columbia's regional economy, analysing in particular the evolving relationship between intraprovincial migration patterns and measures of the periphery's economy. The results of this study suggest that the linkages between the periphery's traditional staples economy and intraprovincial migration patterns have, in general, weakened since the recession of the 1980s. Our analysis also indicates that there are significant regional differences within the periphery. In particular, the cluster analysis of intraprovincial migration trends between 1976 and 2001 suggests that four migration groups can be delineated at the regional district scale. Subsequent correlations of the grouped migration patterns with economic measures verified the logic of the cluster groups, and underscored our interpretation that some areas of the periphery, like the core, are much less dependent on, and thus less coloured by staples activities, while others continue to be intimately associated with, and at the mercy of, commodity driven boom and bust cycles. The analysis also identifies a Depressed group marked by persistent out-migration due to its reliance on a depleted resource base. Overall, these results confirm our initial suspicion that a more diverse regional structure is developing in the province and that it is now difficult, if not

impossible, to describe the province beyond-the-core as a singular entity. Clearly, a more complex categorization of the province is required; one that is sensitive to the fact that the forces driving economic change do not resonate uniformly across the province.

The general character of migration and economic change in the Non-staples and Transitional cluster groups broadly parallels documented developments in rapidly growing areas of the Mountain West. Although British Columbia's 'new west' is not as dramatic or widespread, regional districts that have consistently recorded positive net intra-provincial migration are the least staples dependent. Population and economic growth in these regions now appears to be driven more by flows of retirees, post-industrial economic forces, and amenity and cost-of-living factors. A concentration of these districts around the province's metropolitan core is consistent, furthermore, with Booth (2002) and Smutny's (2002) findings that many migrants try to balance accessibility (to employment opportunities in larger centres) with affordability and quality-of-life concerns. Gill and Reed (1999) and Hutton (1997b) have also hinted that at this connection in terms of consumption linkages between Vancouver's affluent, post-industrial economy and its recreational hinterland. The "increasing presence of Vancouver residents in high-amenity areas of the southern coast and the Okanagan," Hutton believes, "denotes an increasingly important aspect of [the] relationship between the primate metropolis and the rest of British Columbia" (1997b: 258). This spillover effect is a topic that would provide a valuable complement, if not corrective, to work that has stressed how Vancouver is 'uncoupling' from the rest of the province. In the southern interior, retirement and amenity driven migration probably play a larger role, although even here there is some evidence that economic restructuring is also a factor. Kelowna, and to a lesser degree Kamloops, have diversified and extended the scale and geographic reach of their traditional service roles. Health care, education, government services, retail, and perhaps even high-tech are now the dynamic sectors in this area.

In drawing these conclusions, one must be careful not to underestimate the importance of staples, and especially the forest sector, to the periphery's and province's economy. Staples still dominate the province's export trade and subsequently underwrite basic functions and key linkages between areas in the periphery as well as the core. According to the data at hand, the staples economy still conditions intraprovincial migration in the southeastern, central, and northern regions of the province. Staples dependency is greatest in regional districts on the north coast, although economic and environmental problems have dampened their sensitivity to commodity cycles. We also suspect, furthermore, that the gradual decline in the periphery's overall intraprovincial migration ratio during the 1990s is a product of a stagnant economy brought about, in part, by depressed commodity prices. It consequently will be interesting to see how the recent jump in commodity prices (since 2002) will affect intraprovincial migration rates.

Additional research is also required, furthermore, to clarify the character and depth of the regional shifts this research has suggested are occurring. It is important to determine, for example, if changing migration and employment patterns are

accompanied by changes in the source and level of income. Research on the Mountain West suggests that average earnings should have fallen and non-employment earnings risen in the Non-staples and Transtional districts. There is also a need to assess directly the motivations of migrants, particularly those associated with the quaternary sector. Detailed analyses of the province's changing employment structure and case studies of changes in a variety of communities are required, moreover, before more substantial conclusions can be drawn about the relative influence of footloose employment, amenities, and cost-of-living factors on migration flows. There are furthermore, a range of policy issues implicated in the documented and future migration trends. Recent efforts by the provincial governments to reduce health care costs by closing facilities in smaller communities may undermine their ability to attract footloose migrants. The greying of the baby-boom generation, the possibility of commodity boom stimulated by rising global demand for industrial materials (especially from China and India), the settlement of First Nations land claims, and environmental issues (extractive versus recreational use) will undoubtedly also affect the flow of migrants to and within British Columbia.

Migration is a complex phenomenon, and one whose trends may prove to be more volatile in future. Our findings, nevertheless, support the general premise of recent research that British Columbia is experiencing fundamental economic restructuring. At the same time, our analysis challenges the scope of the 'two economies' explanation of those changes. Globalization, post-Fordist adjustments, and the information economy have reshaped Vancouver's economic, social and cultural landscapes. These forces are also directly and indirectly reworking the periphery and the connections within and between regions in the province. The changes are more dramatic in Vancouver; however, the significant differences between economic regions in the periphery clearly indicates that these changes cannot be treated as simply a case of a progressive core and a stagnant periphery -- of a core breaking free of the staples trap and a periphery still firmly held fast. We concur with Reed and Gill that there are cracks in the staples paradigm (1997: 265), that the changes fashioned by post-industrial forces require a more refined appraisal of British Columbia's space economy.

References

- Alonso, W. 1996. "Metropolis without Growth", in N.L. Shumsky (ed.). *Urbanization and the Growth of Cities*. New York: Garland, 120-138.
- Barnes, T. 1996. "External Shocks: Regional Implications of an Open Staple Economy", in J. Britton (ed.). *Canada and the Global Economy: The Geography of Structural Change*. Montreal: McGill-Queen's University Press, 48-68.
- Barnes, T., D. Edgington, K. Denike, and T. McGee. 1992. "Vancouver, the Province, and the Pacific Rim", in G. Wynn and T. Oke (eds.). *Vancouver and Its Region*. Vancouver: UBC Press, 200-233.
- Barnes, T. and R. Hayter. 1994. "Economic Restructuring, Local Development and

- Resource Towns: Forest Communities in Coastal British Columbia". *Canadian Journal of Regional Studies*, 17: 289-310.
- Baxter, D. and A. Ramlo. 2002. *Resource Dependency: The Spatial Origins of British Columbia's Economic Base*. 55. Vancouver: Urban Futures Institute.
- BC Stats. 1996. *British Columbia Still a Natural Resource Economy*. Exports. Victoria: Ministry of Finance and Corporate Relations.
- _____. 1998a. *British Columbia's Changing Industrial Structure*. Exports. Victoria: Ministry of Finance and Corporate Relations.
- _____. 1998b. *Export Emphasis Shifts to Manufactured Goods as Resource Commodities Falter*. Exports. Victoria: Ministry of Finance and Corporate Relations.
- _____. 1999a. *B.C. Local Area Economic Dependencies and Impact Ratios - 1996*. Economic Analysis. Victoria: Ministry of Finance and Corporate Relations.
- _____. 1999b. *Export Changes During 19990s Reduce Resource Dependency*. Exports. Victoria: Ministry of Finance and Corporate Relations.
- _____. 2000. *International Commerce in Services Produces B.C.'s Only Trade Surplus*. Exports. Victoria: Ministry of Finance and Corporate Relations.
- _____. 2001. *International Trade in High Technology Goods and Services*. Exports. Victoria: Ministry of Management Services.
- _____. 2002a. *British Columbia's Fisheries & Aquaculture Sector*. Victoria. September. Ministry of Agriculture, Food and Fisheries.
- _____. 2002b. *Is "Runaway" Film Production in Canada Harming the U.S. Industry?* Exports. Victoria: Ministry of Management Services.
- Behrisch, T., R. Hayter, and T. Barnes. 2002/03. "I Don't Really Like the Mill; in Fact, I Hate the Mill": Changing Youth Vocationalism under Fordism and Post-Fordism in Powell River, British Columbia". *BC Studies*, 136: 73-101.
- Belshaw, J. and D. Mitchell. 1996. "The Economy since the Great War", in H. Johnston (ed.). *The Pacific Province: A History of British Columbia*. Vancouver: Douglas and McIntyre, 313-342.
- Beyers, W. 1991. "Trends in Service Employment in Pacific Northwest Counties: 1974-1986". *Growth and Change*, 22: 27-50.
- _____. 1999. "Employment Growth in the Rural West from 1985 to 1995 Outpaced the Nation". *Rural Development Perspectives*, 14: 38-43.
- Black, E. 1989. "British Columbia: The Politics of Exploitation", in P. Roy (ed.). *A History of British Columbia: Selected Readings*. Toronto: Copp Clark Pitman Ltd., 129-142.
- Booth, D. 1999. "Spatial Patterns in the Economic Development of the Mountain West". *Growth and Change*, 30: 384-405.
- _____. 2002. *Searching for Paradise: Economic Development and Environmental Change in the Mountain West*. Lanham, Mass.: Rowman and Littlefield.
- Bradbury, J. 1980. "Instant Resource Towns Policy in British Columbia, 1965-1972". *Plan Canada*, 20: 19-38.
- _____. 1987. "British Columbia: Metropolis and Hinterland in Microcosm", in

- L. McCann (ed.). *Heartland and Hinterland: A Geography of Canada*. Scarborough, Ontario: Prentice-Hall, 400-441.
- Canada. 2002. *Landings and Historical Statistics*. Ottawa: Department of Fisheries and Oceans.
- Careless, M. 1954. "Frontierism, Metropolitanism, and Canadian History". *The Canadian Historical Review*, 35: 1-21.
- Central Okanagan Economic Development Commission. 1999. "High Tech". *Economic Development Commission*. November 26, 2002. <<http://www.edc-cord.com/hightech/hightech.htm>>.
- Champion, A. ed. 1991. *Counterurbanization: The Changing Pace and Nature of Population Deconcentration*. London: Edward Arnold.
- Coffey, W. 1994. *The Evolution of Canada's Metropolitan Economies*. Montreal: Institute for Research on Public Policy.
- Coffey, W. and R. Shearmur. 1997. "The Growth and Location of High Order Services in the Canadian Urban System, 1971-1991". *Professional Geographer*, 49: 404-418.
- Cominco. 1999. *Annual Report*. Vancouver.
- Commodity Research Bureau. 2001. *Commodity Yearbook*. NY: Commodity Research Bureau.
- Cromartie, J. and J. Wardwell. 1999. "Migrants Settling Far and Wide in the Rural West". *Rural Development Perspectives*, 14: 2-8.
- Dahms, F. and J. McComb. 1999. "'Counterurbanization', Interaction and Functional Change in a Rural Amenity Area - a Canadian Example". *Journal of Rural Studies*, 15: 129-146.
- Davis, D. 1985. "The 'Metropolitan Thesis' and the Writing of Canadian Urban History". *Urban History Review*, 14: 95-113.
- Davis, H. 1993. "Is the Metropolitan Vancouver Economy Uncoupling from the Rest of the Province?" *BC Studies*, 98: 3-19.
- Davis, H. and T. Hutton. 1989. "The Two Economies of British Columbia". *BC Studies*, 82: 3-15.
- Findlay, A., A. Stockdale, and S. E. 2002. "Professional and Managerial Migration from Core to Periphery: The Case of English Migration to Scottish Cities". *International Journal of Population Geography*, 8: 217-232.
- Forgacs, O. 1997. "The British Columbia Forest Industry: Transition or Decline?", in T. Barnes and R. Hayter (eds.). *Troubles in the Rainforest: British Columbia's Forest Economy in Transition*. Victoria, BC: Canadian Western Geographical Series, 167-180.
- Forward, C. 1987. "Urban System", in C. Forward (ed.). *British Columbia: Its Resources and People*. Victoria, BC: University of Victoria, Department of Geography, 359-382.
- Frank, A. 1971. *Capitalism and Underdevelopment in Latin America*. London: Penguin Books.
- Frey, W. 1991. "United States: Counterurbanization and Metropolis Depopulation", in A. Champion (ed.). *Counterurbanization: The Changing Pace and Nature of Population Deconcentration*. London: Edward Arnold.

- Friedman, J. 1966. *Regional Development Policy: A Case Study of Venezuela*. Cambridge, Mass.: MIT Press.
- Fuguitt, G. and C. Beale. 1996. "Recent Trends in Nonmetropolitan Migration: Toward a New Turnaround?" *Growth and Change*, 27: 156-174.
- Gertler, M.S., R. Florida, G. Gates, and T. Vinodrai. 2002. *Competing on Creativity: Placing Ontario's Cities in North American Context*. Toronto: Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity.
- Gill, A. 2000. "From Growth Machine to Growth Management: The Dynamics of Resort Development in Whistler, British Columbia". *Environment and Planning A*, 32: 1083-1103.
- Gill, A. and M. Reed. 1999. "Incorporating Postproductivist Values into Sustainable Community Processes", in J.T. Pierce and A. Dale (eds.). *Communities, Development, and Sustainability across Canada*. Vancouver: UBC Press, 166-189.
- Griffith, D. and C. Amrhein. 1997. *Multivariate Statistical Analysis for Geographers*. Upper Saddle River, N.J.: Prentice Hall.
- Halfacree, K. 1997. "Contrasting Roles for the Post-Productivist Countryside: A Post-Modern Perspective on Counterurbanisation", in P. Cloke and J. Little (eds.). *Contested Countryside Cultures: Otherness, Marginalisation and Rurality*. London: Routledge.
- Halseth, G. 1999. "'We Came for the Work': Situating Employment Migration in B.C.'s Small Resource-Based Communities". *The Canadian Geographer*, 43: 363-381.
- Hardwick, W. 1972. "The Georgia Strait Urban Region", in J. Robinson (ed.). *British Columbia*. Toronto: University of Toronto Press, 119-133.
- Harris, J. 2001. "Mineral Development", in C. Wood (ed.). *British Columbia, the Pacific Province: Geographical Essays*. Victoria: Canadian Western Geographical Series, 261-275.
- Hayter, R. 1978. "Forestry in British Columbia: A Resource Basis of Vancouver's Dominance", in L. Evenden (ed.). *Vancouver: Western Metropolis*. Victoria, BC: University of Victoria, Department of Geography, 95-115.
- _____. 1979. "Labour Supply and Resource Based Manufacturing in Isolated Communities: The Experience of Pulp-and-Paper Mills in North Central British Columbia". *Geoforum*, 10: 163-177.
- _____. 2000. *Flexible Crossroads: The Restructuring of British Columbia's Forest Economy*. Vancouver: UBC Press.
- Hayter, R. and T. Barnes. 1990. "Innis' Staple Theory, Exports, and Recession: British Columbia, 1981-86". *Economic Geography*, 66: 156-173.
- Hayter, R. and R. Galois. 1991. "The Wheel of Fortune: British Columbia Lumber and the Global Economy", in P. Koroscil (ed.). *British Columbia: Geographical Essays: In Honour of A. Macpherson*. Burnaby, BC: Simon Fraser University, 169-201.
- Hutton, T. 1997a. "The Innisian Core-Periphery Revisited: Vancouver's Changing Relationships with British Columbia's Staple Economy". *BC Studies*, 113: 69-

- 100.
- _____. 1997b. "Vancouver as a Control Centre for British Columbia's Resource Hinterland: Aspects of Linkage and Divergence in a Provincial Staple Economy", in T. Barnes and R. Hayter (eds.). *Troubles in the Rainforest: British Columbia's Forest Economy in Transition*. Victoria, BC: Western Geographical Press, University of Victoria, Department of Geography, 233-262.
- Ihaka, R. and R. Gentleman. 1996. "R : A Language for Data Analysis and Graphics". *Journal of Computational and Graphical Statistics*, 5: 299-314.
- Innis, H. 1933. *Problems of Staple Production in Canada*. Toronto: Ryerson Press.
- Kaufman, L. and P. Rousseeuw. 1990. *Finding Groups in Data: An Introduction to Cluster Analysis*. NY: Wiley.
- Ley, D. and T. Hutton. 1987. "Vancouver's Corporate Complex and Producer Services Sector: Linkages and Divergence within a Provincial Staples Economy". *Regional Studies*, 21: 413-424.
- Ley, D. and P. Murphy. 2001. "Immigration in Gateway Cities: Sydney and Vancouver in Comparative Perspective". *Progress in Planning*, 55: 119-194.
- Ley, D. and H. Smith. 2000. "Relations between Deprivation and Immigrant Groups in Large Canadian Cities". *Urban Studies*, 37: 37-62.
- Lindgren, U. 2002. *Counter-Urban Migration in the Swedish Urban System*. Cerum Working Paper, 57. Umeå: Umeå University.
- MacKinnon, R. and R. Nelson. 2003/04. "Postindustrial Adjustments in a Staples Economy: Urban and Economic Change in Kamloops, 1961-2002". *Western Geography*, 13/14: 69-108.
- McCann, L. 1978. "Urban Growth in a Staple Economy: The Emergence of Vancouver as a Regional Metropolis, 1886-1914", in L. Evenden (ed.). *Vancouver: Western Metropolis*. Victoria, BC: University of Victoria, 17-41.
- _____. 1981. "The Myth of the Metropolis: The Role of the City in Canadian Regionalism". *Urban History Review*, 9: 52-58.
- _____. 1998. "Interpreting Canada's Heartland and Hinterland", in L. McCann and A. Gunn (eds.). *Heartland and Hinterland: A Regional Geography of Canada*. Scarborough: Prentice-Hall Canada Inc., 1-41.
- McCann, L. and P. Smith. 1991. "Canada Becomes Urban: Cities and Urbanization in Historical Perspective", in T. Bunting and P. Filion (eds.). *Canadian Cities in Transition*. Toronto: Oxford, 69-99.
- McGillivray, B. 2000. *Geography of British Columbia*. People and landscapes in transition: Vancouver.
- Momer, B. 1998. "The Small Town That Grew and Grew And ... A Look at Rapid Urban Growth and Social Issues in Kelowna, British Columbia, Canada". *Salzburger Geographische Arbeiten*, 32: 65-80.
- Myrdal, G. 1957. *Economic Theory and the Under-Developed Regions*. London: Duckworth.
- Nelson, P. 1997. "Migration, Sources of Income, and Community Change in the Nonmetropolitan Northwest". *Professional Geographer*, 49: 418-430.
- Nelson, P. and W. Beyers. 1998. "Using Economic Base Models to Explain New

- Trends in Rural Income". *Growth and Change*, 29: 295-318.
- Ohman, D. 1999. "Restructuring and Well-Being in the Nonmetropolitan Pacific Northwest". *Growth and Change*, 30: 161-183.
- Plane, D. 1989. "Population Migration and Economic Restructuring in the United States". *International Regional Science Review*, 12: 263-280.
- Power, T. 1996. *Lost Landscapes and Failed Economies: The Search for a Value of Place*. Washington, DC: Island Press.
- Power, T. and R. Barrett. 2001. *Post-Cowboy Economics: Pay and Prosperity in the New American West*. Washington, DC: Island Press.
- Reed, M. and A. Gill. 1997. "Community Economic Development in a Rapid Growth Setting: A Case Study of Squamish, British Columbia", in T. Barnes and R. Hayter (eds.). *Troubles in the Rainforest: British Columbia's Forest Economy in Transition*. Victoria: Western Geographical Press, 263-285.
- Robinson, J. 1973. "Areal Patterns and Regional Character", in J. Robinson (ed.). *British Columbia*. Toronto: University of Toronto Press, 1-8.
- Robinson, L. 1998. "British Columbia: Canada's Pacific Province", in L. McCann and A. Gunn (eds.). *Heartland and Hinterland: A Regional Geography of Canada*. Scarborough: Prentice-Hall Canada Inc, 321-355.
- Ross, W. 1987. "Fisheries", in C. Forward (ed.). *British Columbia: Its Resources and People*. Victoria: Western Geographical Series, 179-198.
- Rudzitis, G. 1999. "Amenities Increasingly Draw People to the Rural West". *Rural Development Perspectives*, 14: 9-13.
- Shumway, J. and J. Davis. 1996. "Nonmetropolitan Population Change in the Mountain West: 1970-1995". *Rural Sociology*, 61: 513-529.
- Shumway, M. and J. Lethbridge. 1998. "The Economic and Demographic Restructuring of Nonmetropolitan Counties in the Mountain West". *Research in Rural Sociology and Development*, 7: 91-111.
- Smutny, G. 2002. "Patterns of Growth and Change: Depicting the Impacts of Restructuring in Idaho". *Professional Geographer*, 54: 438-453.
- Stelter, G. 1975. "The Urban Frontier in Canadian History", in A.R. McCormack and I. Macpherson (eds.). *Cities in the West*. Ottawa: National Museums of Canada, 270-283.
- Venture Kamloops. 2002. "Kamloops Ranked as the Most Affordable Place to Live in North America". *Venture Kamloops*. January 10, 2003. <<http://www.venturekamloops.com/pressreleases/july2-02.htm>>.
- Vias, A. 1999. "Jobs Follow People in the Rural Rocky Mountain West". *Rural Development Perspectives*, 14: 14-23.
- Vining, D.R. and R. Pallone. 1982. "Migration between Core and Peripheral Regions: A Description and Tentative Explanation of the Patterns in 22 Countries". *Geoforum*, 13: 339-410.
- Wallerstein, I. 1974. *The Modern World System*. New York: Academic Press.
- Watkins, M. 1963. "A Staple Theory of Economic Growth". *Canadian Journal of Economics and Political Science*, 29: 141-148.
- Wood, C. and C. Corpé. 2001. "Fisheries", in C. Wood (ed.). *British Columbia, the Pacific Province: Geographical Essays*. Victoria: Canadian Western

Geographical Series, 329-344.

Wynn, G. 1992. "The Rise of Vancouver", in G. Wynn and T. Oke (eds.). *Vancouver and Its Region*. Vancouver: UBC Press, 69-145.