

# SITUATING BC IN THE GLOBAL ECONOMY

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**JUNE 2009**

*A paper prepared for the  
Business Council of British Columbia Outlook 2020 project.*

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We would like to thank Gregg Burkinshaw and Ken Peacock of the Business Council of British Columbia as well as J. Harris of Statistics Canada for helpful advice.

## 1. INTRODUCTION

British Columbia is a small dynamic open economy, integrated with Canada and the global economy through product markets, capital markets, and increasingly global labour markets. This presents challenges and opportunities that will require skill in managing to ensure the best possible outcomes for all British Columbians. Our purpose is to lay the groundwork for this task — to provide an assessment of how BC is currently situated in the global economy.

British Columbia is the fifty-seventh largest economy in the world, placing it in the top thirty percent of all countries, and ahead of such countries as Ireland and New Zealand.<sup>1</sup> From this perspective, treating BC as an economy in its own right is natural and we will use this as an organizing theme. But there are limits to this perspective as events and outcomes in BC are shaped by its place within Canada, something that cannot be ignored as we look to BC's future.

The defining features of a small open economy are its external linkages. The most obvious of these are the trade flows, exports and imports of goods and services to and from the rest of Canada and the global economy. Equally important are the financial flows from the rest of Canada as well as the global economy, which provide resources for physical investment in BC, providing new infrastructure, plants and equipment, and new technologies. Finally, BC's external linkages are shaped by its labour markets and workforce. In part, this linkage is direct through migration. But equally important are the indirect influences: BC's position in the Canadian and global economy depends very much on our ability to maintain and develop the province's human resources.

Each of these aspects of the BC economy — trade, financial markets, and the labour force — is important in its own right, as key drivers of the economy and potential sources of external shocks. But they are all interdependent as well, part of the whole of the BC economy, and this larger perspective is necessary to understand the opportunities and challenges the province faces. Our goal is to examine these components: the current situation and what challenges lie ahead for British Columbia.

## 2. PRODUCTION AND GROWTH

Growth in real economic activity in BC for the last five years and the last decade is summarized in Table 1.<sup>2</sup> Growth rates are presented for both overall production (gross domestic product or GDP) as well as GDP per capita. The former provides a measure of overall *economic activity* while the latter provides a limited measure of *economic wellbeing*. For comparison purposes, growth rates are also presented for Canada as well as Quebec, Ontario and Alberta.

Over the ten-year period, *growth* in BC has been slightly less than that of Canada as a whole. In contrast, during the last five years BC has significantly outperformed Canada as a whole in terms of growth in overall production. More importantly, BC's growth in per capita GDP has also outperformed Canada as a whole and each of the other provinces in the table, including Alberta.

Growth rates are important for assessing the pace of economic activity and the rising wealth of the population. We can get a further perspective by considering the *level* of economic activity. Figure 1 presents the levels of real GDP per capita (2002 chained dollars). Despite the impressive growth rates for BC in recent years, on a per capita basis the province still lags

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<sup>1</sup> This ranking is based upon purchasing power parity adjusted real GDP measures for 2000 from Heston, Summers and Aten, *Penn World Table Version 6.2*, Centre for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006. To calculate BC's place, it is assumed that the comparable measure is 12.2 percent of that of Canada's, which is the ratio of nominal GDP in BC to Canada in 2000. 2000 was chosen as this provided a complete set of countries for comparison.

<sup>2</sup> At the time of writing, the Provincial Economic Accounts are current up to 2007 and apart from odd instances where more recent data is available this will be the last year for which we are able to present data.

Canada as a whole as well as Ontario and Alberta. Also evident is the astonishing wealth generated by the petroleum sector in Alberta over recent years.<sup>3</sup>

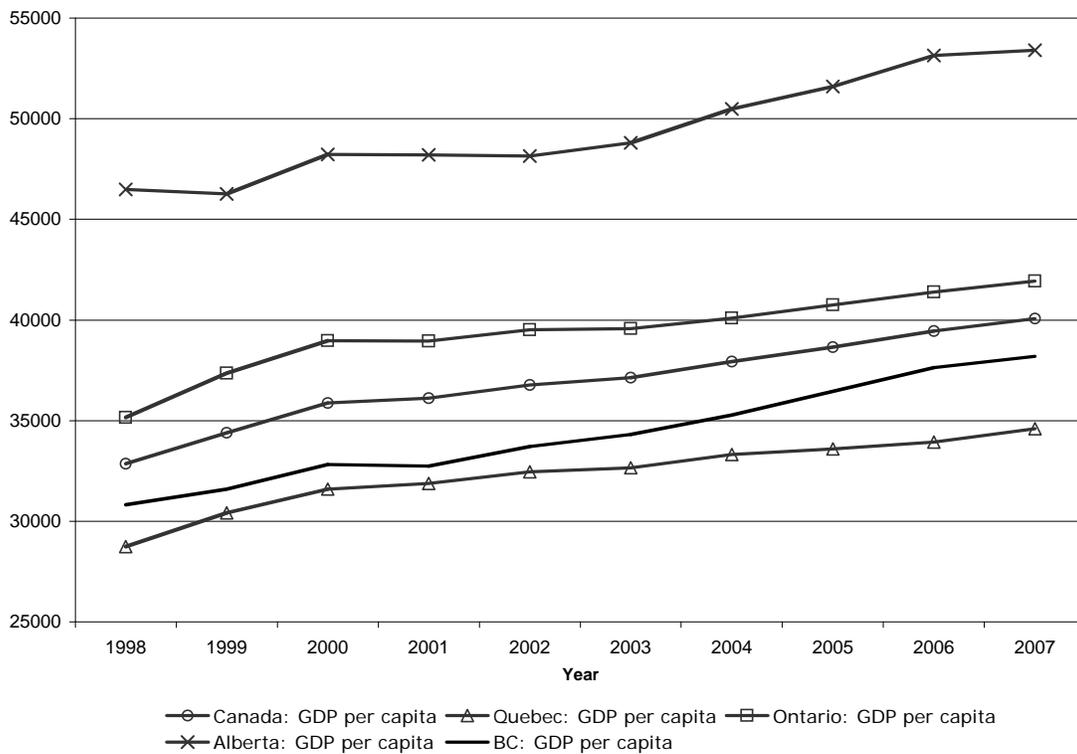
**Table 1: Economic Growth**

Real GDP Growth (annual percent)					
	Canada	Quebec	Ontario	Alberta	BC
1998-2007	3.33	2.73	3.49	3.90	3.12
2003-2007	2.74	1.95	2.34	4.49	3.56

Real GDP Growth per capita (annual percent)					
	Canada	Quebec	Ontario	Alberta	BC
1998-2007	2.34	2.17	2.15	1.69	2.22
2003-2007	1.74	1.29	1.19	2.10	2.52

Source: Statistics Canada CANSIM II Tables 3840002 and 510001. GDP is expenditure based, chained 2002 dollars.



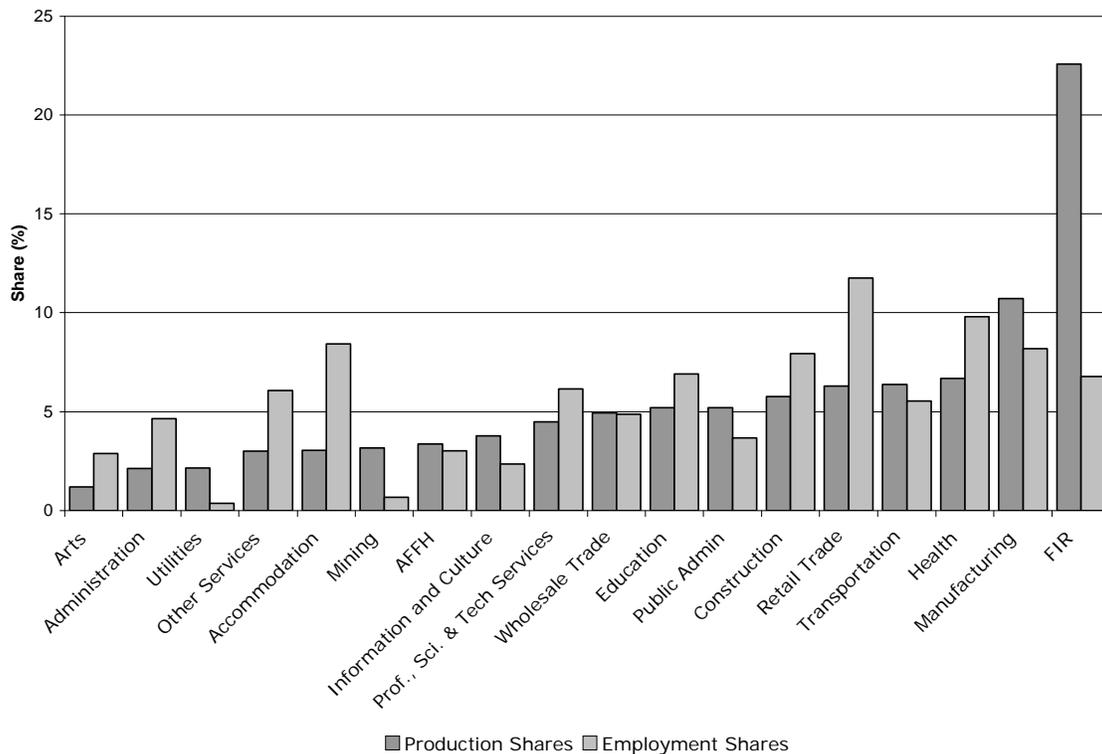
**Figure 1: Per Capita Gross Domestic Product (Expenditure Based)**

Source: Statistics Canada CANSIM II Tables 3840002 and 510001.

We might also ask what industries underlie production in BC currently. Figure 2 provides a summary of industry production and employment shares in BC for 2003-07 (the series are ordered based on production shares). In terms of production, by far and away the largest industry in BC is FIR, comprising firms involved in finance, insurance, and real estate. The next largest is manufacturing, within which the largest two sub-groups are wood product manufacturing and pulp, paper and paperboard mills.

<sup>3</sup> As much of Alberta's growth is very capital intensive, GDP per capita likely overstates the economic wellbeing of Albertans since much of returns to production will be accruing to capital owners, resident and non-resident, rather than the general population of Alberta.

Employment by industry, however, provides a somewhat different picture demonstrating among other things that BC is more diversified than the shares of GDP would suggest. In terms of employment, measured as number of jobs, the top five employers are retail trade, health services, accommodation (i.e. tourism), manufacturing, and construction. Taken together, these sectors account for just almost half of all the jobs in BC over the period. In addition, the finance sector (FIR) is noticeably smaller, accounting for less than ten percent of employment.<sup>4</sup> In this latter case, though, a large part of the explanation for the difference between production and employment arises because the FIR sector of GDP includes imputed rent on owner occupied dwellings. This is a substantial part of GDP in FIR, just less than 50 percent (on average) for the 2003-07 period; in terms of overall GDP, it is about 10-11 percent.



**Figure 2: Industry Shares (2 Digit Level) for the BC Economy (2003-07 Average)**  
**Source: Statistics Canada CANSIM Table 3790025 and 3830010**

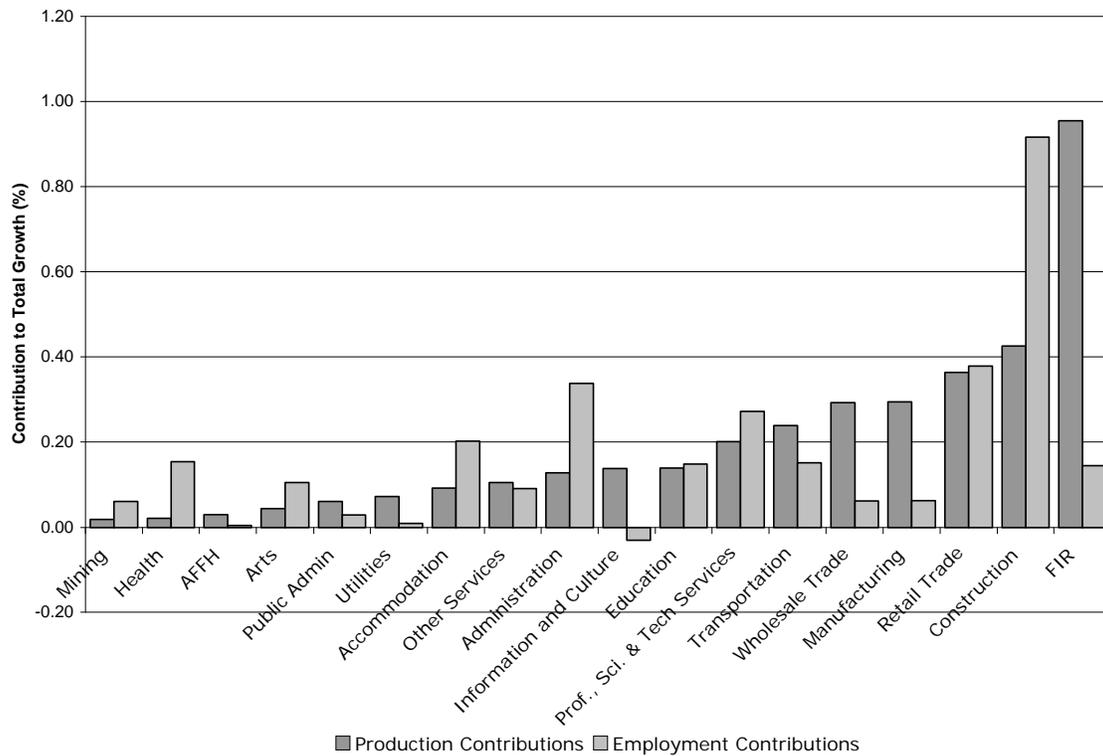
If we focus on the contributions to growth presented in Figure 3, a slightly different picture emerges. Averaging over the last five years, GDP growth in BC has been 3.5 percent. Of this, FIR accounts for around one percent – clear evidence of the driving force that real estate has been for the BC economy over this period.<sup>5</sup> This is further supported by the strong growth in the construction industry, which contributes about ½ of one percent. The other major contributors are manufacturing and trade (combining wholesale and retail trade).

Not surprisingly, the construction boom again shows its influence in employment growth, accounting for 0.9 percentage points of the 3 percent per annum average employment growth over the period. And, not surprisingly, as BC households have responded to low interest rates

<sup>4</sup> Bear in mind that these figures are measuring jobs, aggregating both part-time and full-time employment. This provides the broadest measure of where employment is located serving to demonstrate the diversity of economic activity within BC.

<sup>5</sup> Imputed rent makes a contribution in this regard as well, contributing about 0.22 percent to overall GDP growth (on average) per year over the 2003-07 period.

and access to equity in their homes, the retail sector has also contributed a significant component to employment growth. Whether viewed from production or employment growth, it's hard not to conclude that the sources of growth in recent years can be simply described as real estate and shopping.<sup>6</sup>



**Figure 3: Industry Contributions (2 Digit Level) to BC Growth (2003-07 Average)**  
**Source: Statistics Canada CANSIM Table 3790025 and 3830010**

Noticeable in both of these figures is the relatively unimportant role for the resource sectors, forestry (which is the major part of Agriculture, Forestry, Fishing and Hunting or AFFH) and mining; neither of these sectors have played a large direct role in the share of what we produce in BC or how these industries have contributed to economic growth. This is not to say they are unimportant; they provide raw material for important manufacturing industries and on a regional basis they are often much more important than their role in the overall BC economy suggests. Moreover, the resource sector continues to be an important source of government revenue. Over the 2005–2008 period, natural resource royalties averaged 13 percent of BC government revenue.<sup>7</sup> In dollar terms, these royalties were between 3.5 and 4.2 billion dollars. To put this in some perspective, BC sales tax averages 16 percent of BC government revenue for this period. In future years, as BC continues to develop its natural resources, we expect these royalties to continue to provide significant revenue to the BC government.

There is a natural inclination to identify certain types of employment as inherently superior to other types, though this is often done without any solid justification. In our view, there is generally

<sup>6</sup> Administration, which also is an important source of employment growth, refers to Administrative and Support, Waste Management and Remediation Services. The administrative and support component refers to activities that support the activities of other organizations, for example travel arrangements and facilities management.

<sup>7</sup> This is calculated as a proportion of own source revenue for the BC government. As a proportion of total revenue, natural resource royalties average 11 percent for this period. Source: CANSIM Table 3850002.

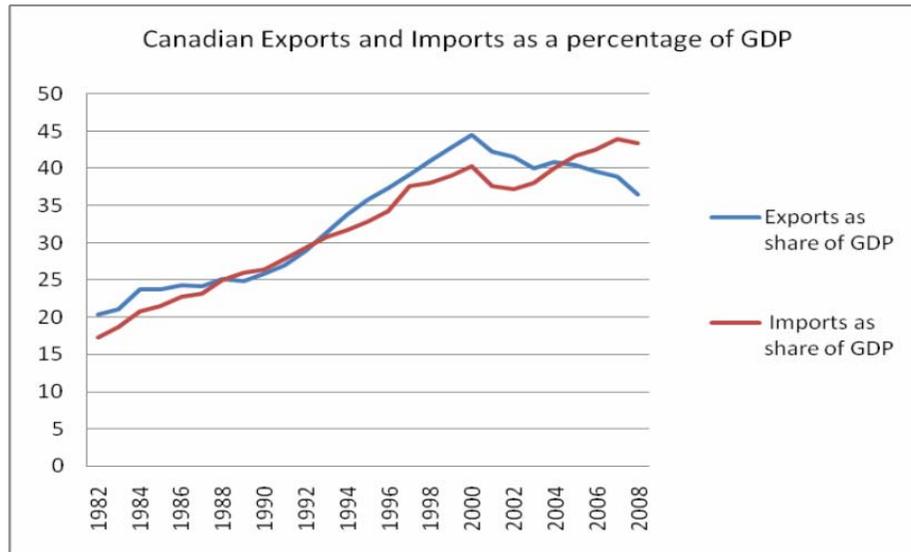
little gained in these sorts of exercises; we don't, for example, view employment or production in the manufacturing sector as more desirable than employment in the service sector simply because the former produces tangible goods. Nor do we view retail trade employment as less desirable, even if part-time. This is an important sector providing a valuable service; moreover, it is also an important sector for young people and other new entrants to the labour market to find employment and gain skills. There are, however, other instances, when it does make sense to view certain types of employment as having potentially important spillovers for the broader economy. Employment in professional, science, and technical services has been a strong contributor to employment growth in BC and this bodes well for the BC economy as this sector, more than most, is a very likely source of innovation of long term growth.

In summary, BC is clearly not a simple resource dependent economy. In terms of employment and production, BC is pretty well diversified and comparable to most developed economies, though in recent years these have been dominated by construction and the real estate sectors. As all such booms eventually come to an end, as indeed this one seems to have, we suspect these sectors to play a much less dominant role - at least until the next real estate boom arrives.

### 3. TRADE IN GOODS AND SERVICES

#### i) Overview of Trade

The importance of international trade in the world economy has increased substantially. In 1960, exports accounted for 12.1% of world GDP, that figure rose to 18.1% in 1980, to 21.1% in 1995 and, by 2007, the share of exports in GDP had risen to 25.3%.<sup>8</sup> In Canada, this number is even higher, with exports accounting for almost 40% of GDP in 2007, though falling to 36% in 2008. Figure 4 shows Canadian exports and imports as percentage of GDP from 1982 to 2008.<sup>9</sup>



**Figure 4: Canada Exports and Imports as Share of GDP (constant 2002 dollars)**  
**Source: Statistics Canada CANSIM Table 384002**

Trade has grown so much more quickly than GDP (hence increasing its share of GDP) predominantly for three reasons. The first is technological change – improvements in transportation and communications have made international trade faster and cheaper. Second, firms have globalized their supply chains, sourcing multiple components from around the world. This has led to a large increase in trade in components. For example, a car exported from the US to Canada in 1950 would have been built with parts that were almost all made in the US, meaning the car would cross the border only once. Today, however, a car exported from the US to Canada will have multiple components made in Canada, as well as other countries, with some components crossing the border several times before completion. Accordingly, the production and export of one car accounts for considerably more total trade today than in the past. The final reason for trade's rapid growth is the decline in trade barriers beginning when the General Agreement on Tariffs and Trade (GATT) was signed in 1948. Tariffs have fallen considerably, from average levels of approximately 40% in 1948, to OECD average tariffs on manufactured goods of approximately 3% in 2008.<sup>10</sup> In Canada, the Canada-US Free Trade Agreement, implemented in 1989, acted to essentially eliminate tariffs on manufactured goods between the two countries by 1998. This was particularly significant for Canadian trade as in 1998 almost 85% of Canadian exports were destined for the United States. As we will discuss below, this figure is smaller for British Columbia, though the United States remains BC's most important trading partner.

<sup>8</sup> *World Investment Report* (2008).

<sup>9</sup> The series in Figure 4 are expressed as shares of real exports and imports in real GDP, all measured in 2002 constant dollars, which provides a useful measure of relative production. However, as it does not measure flow values, the difference between exports and imports does not represent the balance of trade.

<sup>10</sup> TRAINS data base.

British Columbia's exports and imports both increased rapidly in the past 25 years, though look to decrease in 2009 with the global recession. Figure 5 shows the value of BC's exports and imports, in constant 2002 dollars, from 1981 to 2007. The real dollar value of BC's exports and imports has grown substantially, with imports growing faster than exports. Between 2002 and 2007, when the Canadian dollar was appreciating, this was particularly pronounced with imports growing three times faster than exports.



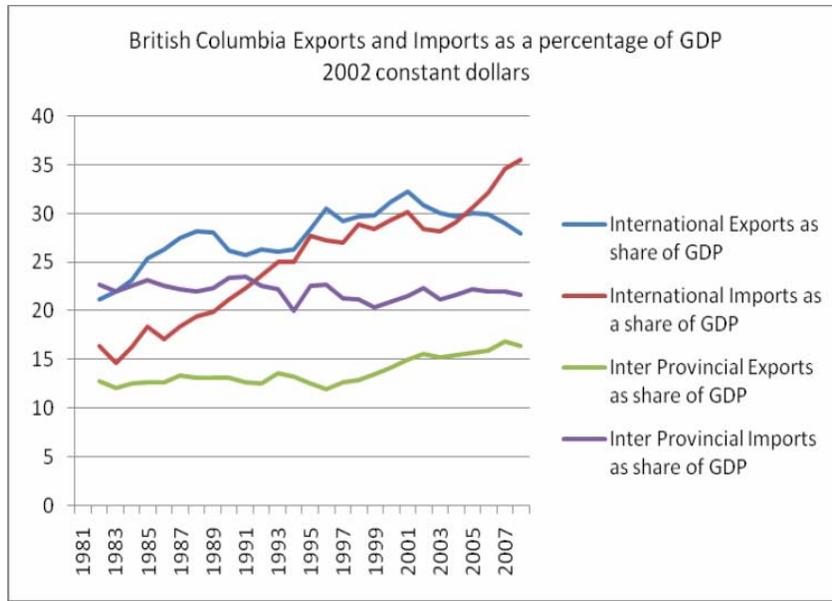
**Figure 5: British Columbia Exports and Imports (constant 2002 dollars)**

**Source: Statistics Canada CANSIM Table 3840002**

Despite British Columbia's strong growth in dollar value trade, BC remains less trade intensive internationally than the rest of Canada. Figure 6 indicates that while the shares of international exports and imports in BC's GDP have grown substantially since 1981, they remain significantly smaller than the rest of Canada (recall Figure 4). Interprovincial exports and imports are also significant components of the BC economy, though here too they tend to be smaller than in other provinces.

One caveat to consider when looking at British Columbia's export performance is the import content of BC's exports. The import content of exports refers to the amount of imported components used in exported goods. In recent years BC's import content of exports has been between 16% and 18%, indicating that value-added exports as a percentage of GDP are approximately 25%.<sup>11</sup> A benefit of having lower import content of exports is that there are more domestically sourced inputs in the final export product, and hence each dollar of exports represents a larger amount of domestic economic activity than in cases with higher import content of exports. On the other hand, a potential challenge is this leaves BC's export sector more exposed to currency appreciation. An appreciation in the Canadian dollar makes Canadian exports relatively more expensive to foreign buyers (or reduces receipts in Canadian dollars for exports paid for in foreign currency) but, at the same time, it makes imported inputs cheaper to Canadian manufacturers. Manufacturers with higher import content of exports may be able to use some of their cost savings in imported inputs to offset the negative effects of the appreciation on their export revenue. The converse is true during a depreciation of the currency.

<sup>11</sup> BC Stats (2008).



**Figure 6: British Columbia Exports and Imports as Share of GDP (constant 2002 dollars)**  
**Source: Statistics Canada CANSIM Table 3840002**

**BC's Exports**

Looking in detail at the destination of British Columbia's exports, several interesting points arise. Table 2 details the percentage of exports by destination in 1998 and 2008 for both BC and Canada as a whole. In 2008, 78% of Canadian exports went to the US, down from 85% ten years previous. BC's shipments to the US have also fallen over the past decade, however, they account for a much smaller share of the total with only 52% of exports destined for the US market in 2008. The biggest driver of this divergence is BC's engagement with Asia. About 29% of BC's exports go to Asia, where the Canadian average is closer to 6-7%. Within Asia, BC's exports are primarily destined for Japan (15%), though that percentage has declined from its peak.<sup>12</sup> Emerging as destinations for a growing share of BC's exports are China and South Korea. In the past decade China has more than tripled its share of BC's exports and the share of exports to South Korea more than doubled in the same time period. Between 2007 and 2008 alone, BC's exports to the Pacific Rim rose by \$2 billion, a 25% increase, and were worth over \$10.7 billion in 2008.

**Table 2: Top 10 Export Destinations as percent of Total, 1998 & 2008**

<b>BRITISH COLUMBIA</b>	<b>1998</b>	<b>2008</b>	<b>CANADA</b>	<b>1998</b>	<b>2008</b>
United States	63.49	52.23	United States	84.76	77.70
Japan	17.06	15.02	United Kingdom	1.39	2.68
China	1.74	6.19	Japan	2.71	2.29
South Korea	2.54	5.90	China	0.78	2.15
Taiwan	1.52	1.82	Mexico	0.46	1.21
Germany	1.50	1.61	Germany	0.85	0.93
Italy	1.63	1.46	South Korea	0.57	0.79
Netherlands	0.94	1.32	Netherlands	0.59	0.76
Brazil	0.29	1.31	Belgium	0.48	0.67

<sup>12</sup> The share of BC's trade going to Asia actually declined from a peak of 37% in 1989 to low of 21% in 2001, and has risen steadily since 2001. The decline between 1989 and 2001 is almost exclusively due to decreasing exports to Japan as the Japanese economy cooled considerably. The increase post 2001 can be primarily attributed to increasing exports to China and South Korea, while the importance of Japan continues to decline. In 2007, for the first time, Japan accounted for less than half of BC's exports to Asia.

United Kingdom	1.19	1.28	France	0.53	0.67
Other	8.09	11.73	Other	6.88	10.15

From a trade policy perspective this makes BC's situation somewhat unique in Canada. While the United States remains by far the most important export market for British Columbia, 48% of BC's trade goes elsewhere compared with 22% for the rest of Canada. This means that trade policy initiatives that reduce export barriers to the US, such as the Canada-US Free Trade Agreement, cover a smaller percentage of BC's trade.<sup>13</sup> Conversely, British Columbia would have a tremendous amount to gain from trade initiatives coming out the Asia Pacific Economic Cooperation (APEC) forum. APEC's 21 Pacific Rim member countries include Canada, the United States, China, Japan, South Korea and Taiwan. Together, APEC countries accounted for 86.9% of Canadian exports in 2008, only about 9.2% more than was accounted for by shipments to the US alone. For British Columbia, APEC countries accounted for a similar percentage of exports (86.6% in 2008), but for BC, this is 34.7% more than was destined for the US alone. Accordingly, while Canada as a whole would see trade liberalization within APEC affecting about 9% of their exports (those not already covered by the Canada-US Free Trade Agreement), an APEC based trade liberalization would affect an additional 35% of British Columbia's current exports, creating a substantial potential benefit to BC.

Turning our attention to the composition of BC's exports, we note that BC's export sector continues to be commodity based. Table 3 details BC's largest export industries in 2008, 2007 and 1998. In 2008 Coal Mining overtook Sawmills and Wood Preservation as BC's largest export. This is due both to a decline in the forestry industry and a large increase in the dollar value of coal exports. Note that when combining Sawmills and Wood Preservation, with Pulp Mills and Paper Mills, the forestry sector as a whole is still BC's largest export sector, despite recent declines. The increasing share of both coal and oil and gas in 2007-08 were largely driven by record increases in the price of these commodities.

**Table 3: 10 Largest Export Industries as a percent of Total, 1998, 2007 and 2008**

Sector	1998	2007	2008
21211 - Coal Mining	6.74	7.67	16.17
32111 - Sawmills and Wood Preservation	25.94	16.26	12.01
21111 - Oil and Gas Extraction	3.8	8.76	10.3
32211 - Pulp Mills	10.3	10.43	8.56
32212 - Paper Mills	6.44	4.35	4.42
21223 - Copper, Nickel, Lead and Zinc Ore Mining	1.46	3.79	3.69
33131 - Alumina and Aluminum Production and Processing	2.07	2.45	2.29
32121 - Veneer, Plywood and Engineered Wood Product			
Manufacturing	3.76	3.02	2.06
32518 - Other Basic Inorganic Chemical Manufacturing	0.58	0.76	2.00
33141 - Non-Ferrous Metal (except Aluminum) Smelting and Refining	1.73	2.58	1.95

In 2008, over 65% of BC's coal exports went to Asia, with the vast majority destined for either Japan or South Korea. Exports to the United States accounted about 52% of total forestry sector<sup>14</sup> exports, down from 62% in 2002. China and Japan each account for an additional 12% of forestry exports, with Japan's share declining in recent years and China's rising. The US imports about half of BC's oil and gas exports, with the remainder widely dispersed.

<sup>13</sup> The important exception to this is of course policy initiatives surrounding Soft Wood Lumber, which are very important to British Columbia.

<sup>14</sup> Here we combine Sawmills & Wood (32111), Pulp Mills (32211) and Paper Mills (32212).

### **BC's Imports**

Table 4 summarizes the existing data on the origin of BC's imports in 1998 and 2008, and Canadian imports for the same years. From this table, we note that the United States is declining in importance as an import source, as it is for Canada as a whole, while Asia's importance is growing. What is also evident is the much larger role for Asia as a source of imports for BC relative to the rest of Canada, though again this may in part be due to BC's role as the principal port of entry for Asian goods.

**Table 4: Import sources, as a percentage of total, 1998 and 2008**

<b>BRITISH COLUMBIA</b>	<b>1998</b>	<b>2008</b>	<b>CANADA</b>	<b>1998</b>	<b>2008</b>
United States	48.68	41.76	United States	68.23	54.42
Asia	38.96	43.19	Asia	12.82	18.84
European Union	5.53	6.36	European Union	9.70	12.47
Other	6.83	8.69	Other	9.26	14.27

Table 5 looks at the composition of BC's imports. Petroleum accounted for the largest portion of BC's imports in terms of dollar value in 2008, a significant rise in importance since 1998 and almost double in size from 2007 alone. This largely reflects the increase in oil prices during that time period. Unsurprisingly, BC's other top imports are predominantly manufactured goods.

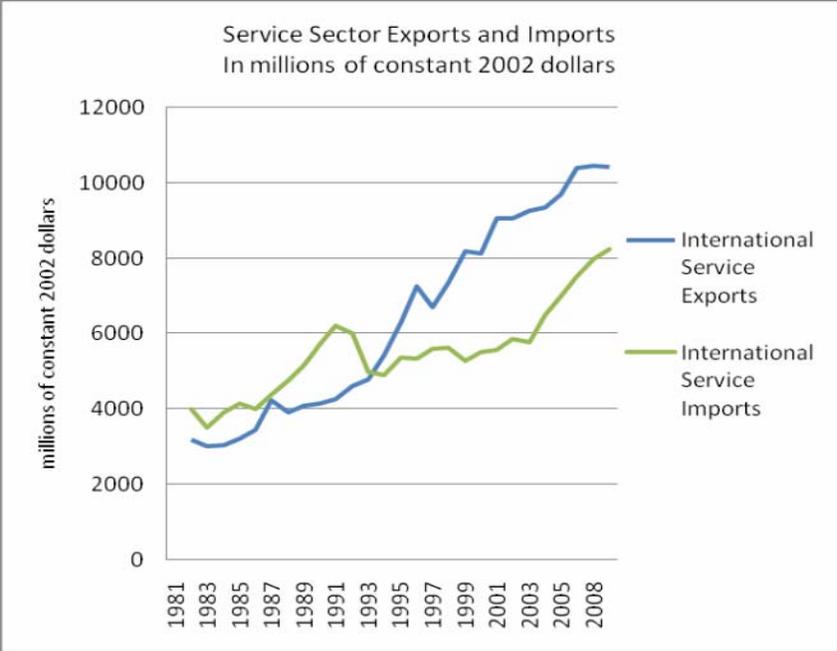
**Table 5: Imports from 10 largest industries, as percent of total, 1998, 2007 and 2008**

<b>Sector</b>	<b>1998</b>	<b>2007</b>	<b>2008</b>
32411 – Petroleum Refineries	1.11	4.25	7.81
33611 - Automobile and Light-Duty Motor Vehicle Manufacturing	13.18	7.78	7.32
33411 - Computer and Peripheral Equipment Manufacturing	4.08	4.37	4.38
33431 - Audio and Video Equipment Manufacturing	3.28	3.31	3.44
33111 - Iron and Steel Mills and Ferro-Alloy Manufacturing	2.41	2.90	2.95
33993 - Doll, Toy and Game Manufacturing	1.71	2.08	2.35
31523 - Women's and Girls' Cut and Sew Clothing Manufacturing	1.14	2.09	2.15
33121 - Iron and Steel Pipes and Tubes Manufacturing from Purchased Steel	0.94	1.54	1.93
33312 - Construction Machinery Manufacturing	2.21	2.42	1.80
31171 - Seafood Product Preparation and Packaging	1.71	1.57	1.45

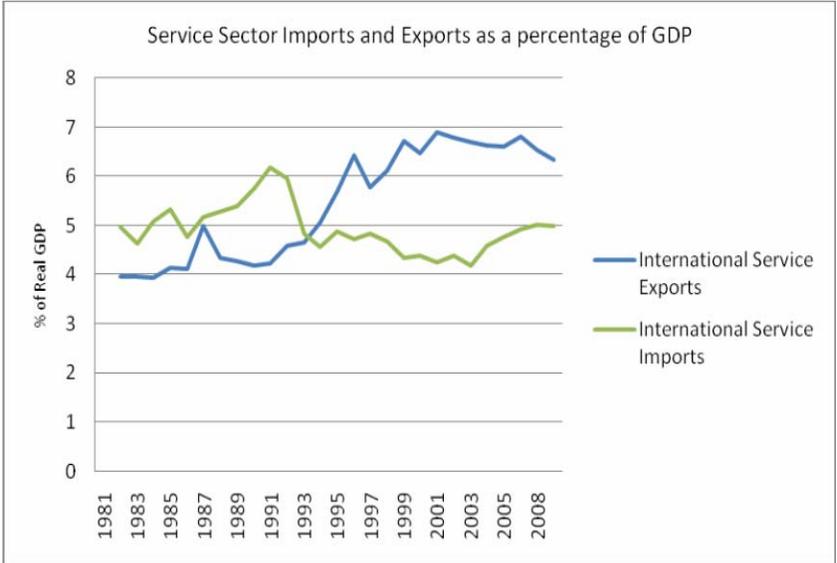
### **Trade in Services**

While commodities continue to dominate BC's exports, the importance of the services sector has grown in recent years. Figure 1.4 shows the real dollar value of BC's trade in services and Figure 1.5 shows the percentage of GDP accounted for by exports and imports of services. From these figures we see that the dollar value of service trade has increased, and the share of service exports in GDP has risen from about 4% in the 1980's and early 1990's, to about 6.5% in 2008. Service imports are more constant in value.

The service sector as a whole in British Columbia accounts for upwards of 70% of both GDP and employment, and is an area of strong growth in BC and in the international economy. Service sector exports have a significant advantage over commodity exports in that there is generally less price volatility, providing a more stable environment for employment and production. Moreover, as transportation costs and information costs continue to fall, service industries such as tourism, finance, education, offer considerable growth potential. More generally, as BC continues to see a greater diversification in its exports – reducing its reliance on a few industries – we should see a more stable economic environment.



**Figure 7: BC Service Sector Exports and Imports**  
Source: Statistics Canada CANSIM Table 3840002



**Figure 8: BC Service Sector Exports and Imports**  
Source: Statistics Canada CANSIM Table 3840002

**BC’s role in Global Supply Chains**

One important element of international trade is integration in global supply chains. Global supply chain (GSC) is a catch all phrase for the integration of different suppliers and producers across national and regional boundaries. As trade barriers and transportation costs fall, companies increasingly pursue each aspect of their productive process in the location which provides the most value to the firm – in many cases this would be the low cost location (inclusive of transportation costs and trade costs), though in other cases it might be the location which offers a quality advantage or proximity advantage, or something else. As it becomes less expensive for firms to disperse their supply chain globally, trade in intermediate products increases. A company may do its research and development in one location, source inputs to production in five

different countries; assemble in another country and contract with a marketing firm in yet another location.

There are a number of potential benefits of engaging in a global supply chain. Firms that source each component from its highest value (lowest cost) location could increase productivity and lower their cost structure. There is some evidence of this for Canada, for example, a Statistics Canada study found that between 1961 and 2003, the use of imported inputs in manufacturing firms was associated with improved productivity. There is also a potential benefit in terms of diversification, companies with diverse input sources are less affected by currency fluctuations, demand shocks, and other risks which may affect suppliers in one region differently than another. Another potential benefit is based on learning and technology transfer – engaging in global supply chains exposes firms to different technologies and markets and they may learn from this. A 2007 OECD study indicates that engagement in global networks was associated with increased stability, learning opportunities, technological improvements & expansion.

Clearly BC is well engaged as an exporter of intermediate goods. Referring back to Table 3, all of BC's top 10 exports, accounting for 63.5% of total exports in 2008, could be classified as intermediate goods. Quantifying BC's involvement in global supply chains as an importer of intermediate goods is more challenging, as import data for the province (described above) precludes accurate accounting of which imports in fact stay in British Columbia. Anecdotally, two points suggest that BC is perhaps not as engaged in global supply chains as an importer of intermediate goods. The first is the import content of exports, which is relatively low compared to other provinces and regions. This suggests that the export sector at least is using a substantial share of domestic inputs. However, as the export sector is predominantly commodity based, this is not surprising. Second, a cursory look at BC's imports suggests a substantial portion of manufactured final goods, particularly when compared with BC's exports. Accordingly, it would appear that while BC is an active global supplier of raw and intermediate goods, the province is perhaps less engaged in global supply chains as a destination for imported intermediaries. This could be both a benefit and a cost to local firms: A benefit in terms of stimulating demand for domestic suppliers, and a possible cost in terms of forgoing opportunities for cost reductions and productivity improvements.

The critical and important aspect of the GSC is that it represents industries finding the most efficient means of producing for different markets. Participation in the GSC by BC firms, whatever the industry and in whatever role, is likely to involve efficient use of resources leading to high levels of productivity, which ultimately delivers wealth to the province. Moreover, it may have significant potential for additional gains through transfer and development of new technologies and methods.

Looking forward, we would argue that the role of public policy is to ensure that impediments to firms participating in the global economy are minimized and that the commercial environment across all industries is conducive to an outward focus. This means ensuring that we have a well trained work force, minimal barriers to trade, first rate transportation infrastructure for both goods and people, and a streamlined transparent tax and regulatory framework. Overall, it involves an outward looking focus to public policy, embracing opportunities to engage with trading partners traditional and new.

These policies are admittedly generalities as space and broad focus of our discussion prevent specifics. But the overall approach is what is important - removing or minimizing demonstrable impediments to trade and investment where they occur, or to pressure the Canadian government where relevant. What we would caution against is industry specific measures. The complexity of international trade and investment relationships, the web of connections between industries locally and internationally, mean that fully understanding all of the short- and long-run implications of industry-specific initiatives is beyond analysis with the real potential to do more harm than good. Over the long-run, moving resources into one industry requires denying another industry those same resources.

#### 4. INVESTMENT IN BC

For any economy, capital investment and maintenance of existing capital are the source of future economic growth and prosperity. In this section, we first provide a broad or macroeconomic overview of investment spending in BC. We consider both the historical behaviour of investment in BC as well as a comparison to investment patterns in the rest of Canada. We then narrow the focus and consider certain key areas of investment, notably in information technology, which will be of considerable importance for the future of the province.

The source of all investment is savings, either by consumers, businesses or governments. As an integral part of the Canadian economy as well as the global economy, however, BC need not rely on provincial savings for investment; it has access to and has made extensive use of resources from Canada and the rest of the world for investment. The extent to which BC depends upon investment from outside the province, both from Canada and the rest of the world, has considerable bearing on BC's future; through the opportunities firms are likely to encounter as well as the challenges that BC policy makers are likely to face. With this in mind, our second objective is to determine the sources of investment in BC.

##### i) Overview of investment by components in BC

Both the public and private sector undertake investment in physical capital such as structures and equipment. These investments as well as capital maintenance provide the foundation for productive activity, both now and well into the future.

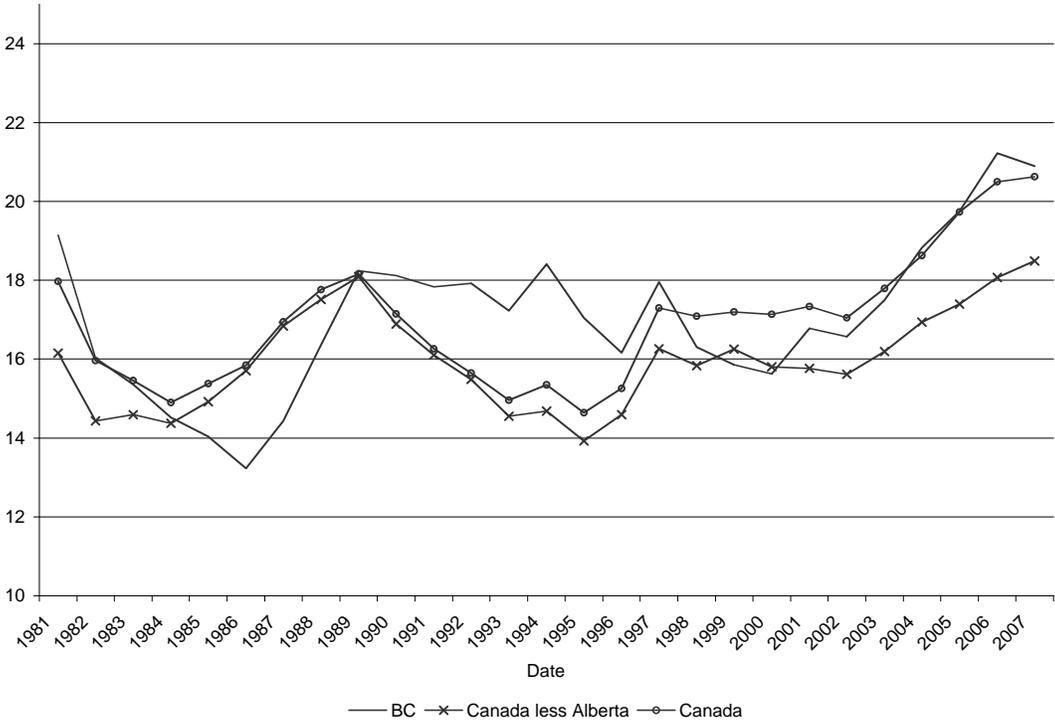
Business investment comprises three different broad categories: residential structures (houses, condominiums, and apartment buildings), non-residential structures (commercial real estate, factories buildings, and installations such as pipelines), and machinery and equipment (office equipment, assembly plant equipment, and software). Historical patterns of business investment as well as its components are presented in Figures 9-12. All are presented as a share of GDP. For comparison, we also report the same series for Canada as a whole as well as Canada less Alberta. We use this last series to make sure that Alberta, with its recent large investments in the oil and gas sectors, does not distort our comparison with the rest of Canada.<sup>15</sup>

Both BC and Canada have experienced a surge in business investment as a share of GDP over the last decade, rising above 20 percent in recent years. If we consider Canada less Alberta, we find that BC, along with Alberta, has significantly outpaced the rise in investment elsewhere in Canada. This is all part and parcel of the growing role of western Canada in the Canadian economy.

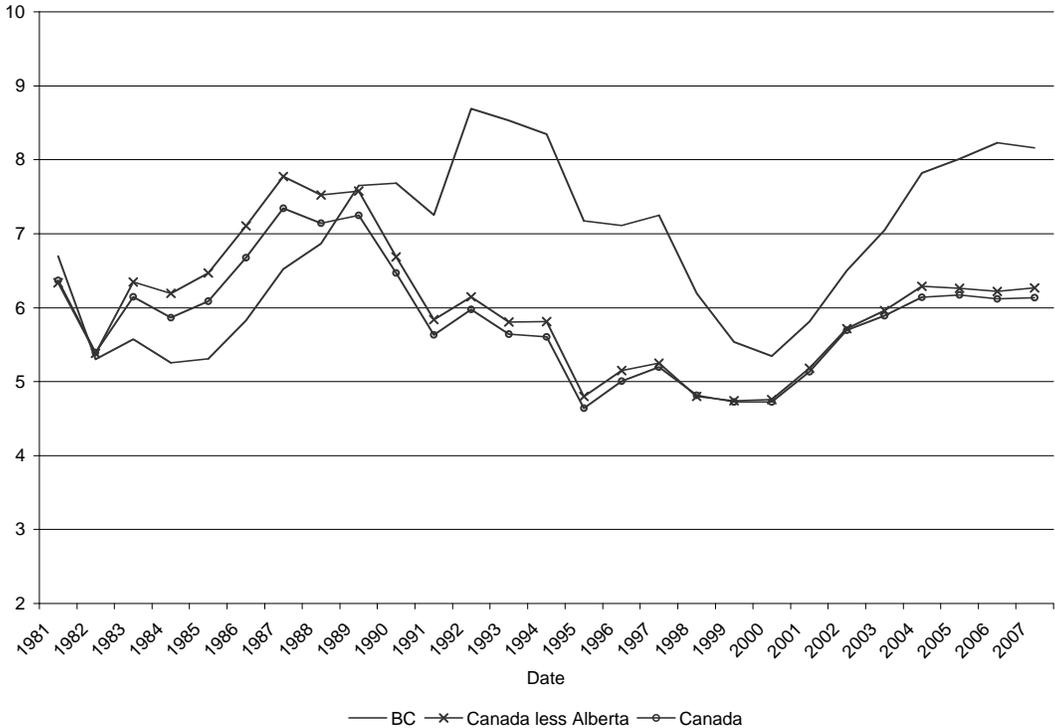
The nature of this investment, however, differs between BC and Alberta as well as the rest of Canada. In the following figure, we have investment in residential structures. Immediately evident is the strong cyclical nature of residential investment in BC – both real estate booms (the early 90s and the 00s) are evident. Also evident is the much higher share of residential investment in BC compared to Canada or Alberta (as the latter two are virtually the same).

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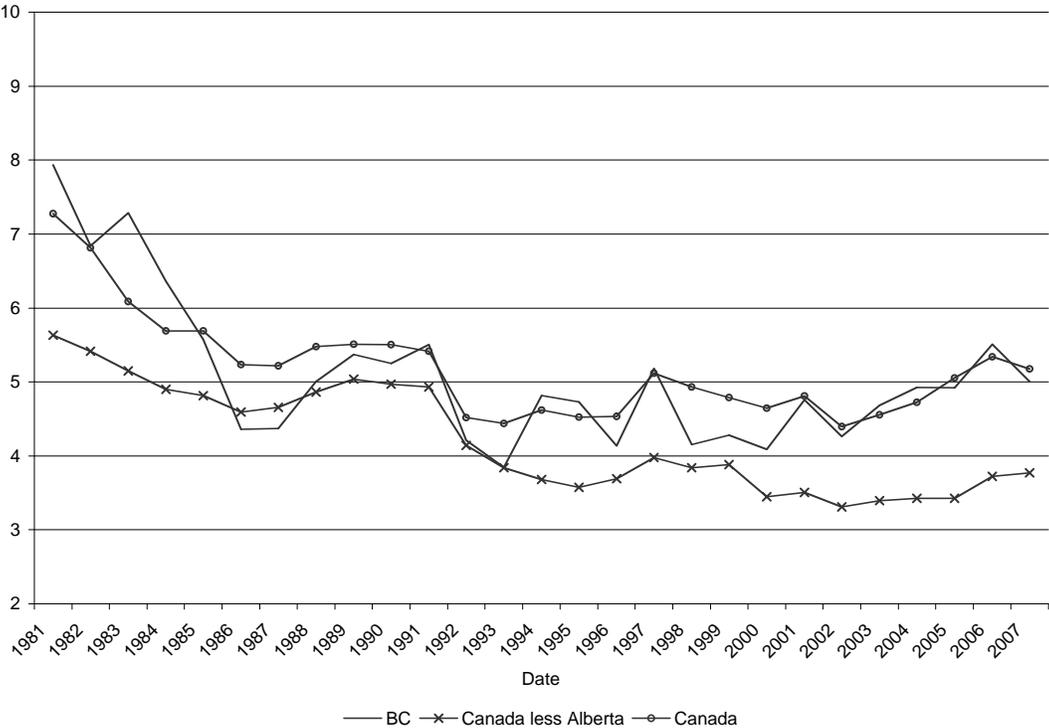
<sup>15</sup> The shares are calculated using real investment and GDP measures, 2002 chained series. The advantage of using real measures is that it controls for changes in relative prices, specifically the price of investment goods relative to the overall GDP deflator. The downside is that strictly one should not subtract one series from another as we do to construct the Canada less Alberta series. However, the effect of doing so does not affect the conclusions we draw.



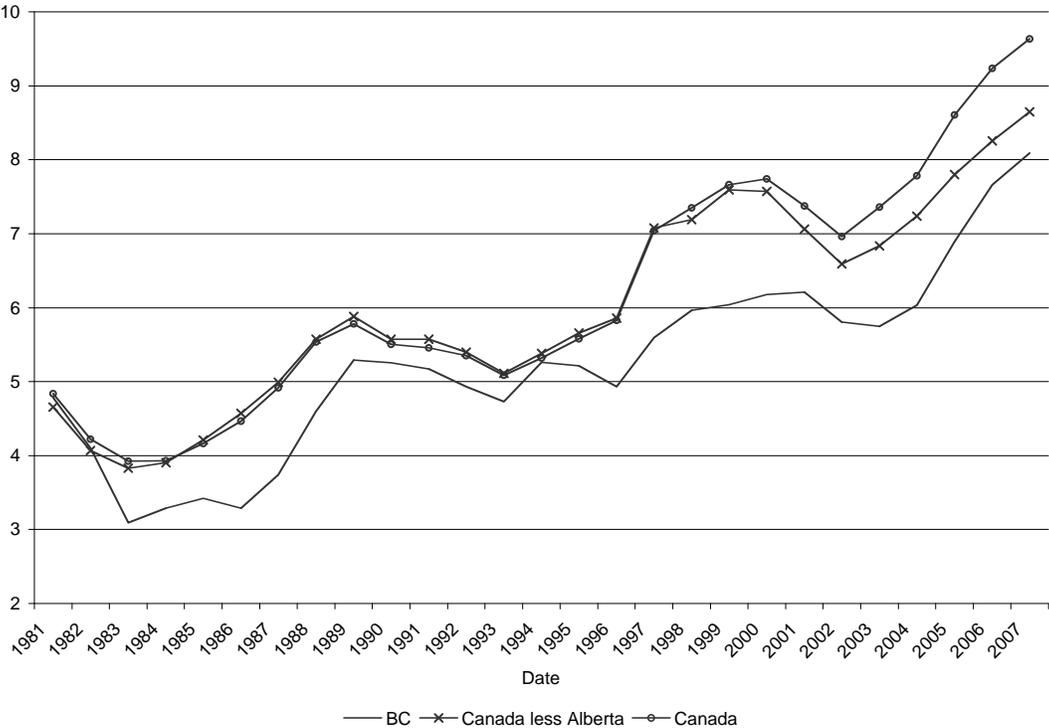
**Figure 9: Business Investment**  
Source: Statistics Canada CANSIM Table 3840002



**Figure 10: Business Residential Construction Investment**  
Source: Statistics Canada CANSIM Table 3840002



**Figure 11: Business Non Residential Construction Investment**  
Source: Statistics Canada CANSIM Table 3840002



**Figure 12: Business Machinery and Equipment Investment**  
Source: Statistics Canada CANSIM Table 3840002

For non-residential structures, the notable feature is the relatively stronger levels of investment in BC and Alberta in recent years compared to the rest of Canada. Non-residential structures, which includes industrial and commercial plants, warehouses, office buildings, and oil and gas facilities, is an important part of the production capacity. The resurgence in these types of investments, as long as they are utilized, is a positive outcome for production in western Canada.<sup>16</sup>

The final figure shows the share of machinery and equipment investment. While there is evidence of steady increases in recent years, BC is lagging, both Canada and, to an even greater extent, Alberta. That it lags Alberta is perhaps not too surprising given the massive resource boom in recent years. Of greater concern is its persistent lagging of the rest of Canada. A crude caricature is that while business investment has been on the rise in recent years, in BC it is driven more so by residential construction than it is by machinery and equipment investment.

The boom in residential construction is fairly well understood; the product of strong demand, low interest rates and a mild housing bubble. It has had important effects on the BC economy, moving resources (capital and labour) into the construction industry – as we have already seen – as well as leading to relatively high construction costs. (And this has of course been exacerbated by large amount of non-residential construction much of which is associated with the 2010 Olympics.)

The consistently lower level of machinery and equipment investment in BC relative to the rest of Canada is noteworthy. Evidence from empirical studies on economic growth shows that machinery and equipment investment is very influential, possibly more so than other forms of investment. In a well-cited study, DeLong and Summers (1991) estimate that the social return to equipment investment – that is the return to the firm and the broader effects throughout the economy – is 30 percent.<sup>17</sup> A natural question then is whether the historical patterns of investment in BC are a concern and what might be done to alter the situation. These are important questions and merit further investigation. We suspect that as the BC economy further diversifies and matures, as its workforce becomes more educated, the productive opportunities within the province will demand increasing levels of investment. What's critical is that the commercial environment is structured to facilitate this process.

One might also wish to consider how BC has fared with respect to investment in information and communication technologies as it provides some information about the ongoing development of the economy and its ability to thrive in the global economy. A simple comparison to Canada and other key provinces in this regard is provided in Table 6 below. (As 2008 data for these series are available, we use the most recent 10 years, 1999-2008).

**Table 6: Investment in Information and Communication Technologies**

Average Growth Rates 1999-2008 (annual percent)				
	M&E	Computers	Telecom	Software
Quebec	6.66	15.06	5.21	11.62
Ontario	6.33	20.74	10.41	8.88
Alberta	12.05	16.22	17.80	9.31
BC	8.08	12.40	17.79	9.31
Canada	7.30	13.46	8.57	9.01

Source: Statistics Canada CANSIM II Table 310003, 310004; chained 2002 prices.

In the last ten years, growth in M&E investment has been relatively strong in BC, as noted in the discussion above. Looking at the components, BC has seen strong growth in Telecoms (along with Alberta) and has growth rates in software investment comparable to the rest of the country

<sup>16</sup> We add this caveat because non-residential structures have at various times been the source of investment booms resulting in excess capacity, particularly in office real estate.

<sup>17</sup> J. Bradford DeLong and Lawrence H. Summers (1991), "Equipment Investment and Economic Growth," *Quarterly Journal of Economics* 106: 2 (May), pp. 445-502.

and the other provinces. The only notably slower rate of growth is in computer investment where BC has experienced growth rates well below those of the other key provinces and indeed lower than Canada as a whole.

Finally, we can look into research and development expenditure, a driver of technological growth. Average growth rates of R&D expenditure for BC and Canada are presented in Table 7. Two different measures are reported; total R&D expenditure and R&D expenditure funded and performed by the business enterprise sector. Because these growth rates are highly cyclical and volatile, we report twenty-year averages as a baseline for comparison with expenditures in the last five years. We also narrow the focus, using only Canada as a benchmark; comparisons to other provinces are considered below.

**Table 7: R&D Expenditure Growth in British Columbia and Canada**

Average Growth Rates of R&D Expenditures All Industries (annual percent)		
	Total R&D	Business Enterprises R&D
<b>BC</b>		
1987-06	6.2	6.6
2002-06	5.5	-0.4
<b>Canada</b>		
1987-06	4.5	5.4
2002-06	1.4	1.3

Source: Statistics Canada CANSIM II Table 3850001, constant 2002 prices.

Uniformly, R&D expenditure growth over the 2002-06 (the last years for which data is available) has been below historical averages. This is particularly true for R&D expenditure funded and performed by the business sector and especially so in BC where the growth rate has been, on average, below zero. Furthermore, the recent growth rate in BC has been below the rest of Canada. In terms of total R&D, which includes R&D funded and or performed by governments and research institutions, BC fares reasonably well in terms of comparison to the rest of Canada; BC has a higher long term average growth rate and a significantly higher recent growth rate.

It is hard not to conclude that for whatever reason the BC business sector has been underperforming with respect to R&D in recent years. This may in part be explained by very high growth rates experienced during the late 1990s and early 2000s and the cyclical nature of this type of spending. Nonetheless, 2002-06 was a period of generally high economic growth and prosperity in BC and it is not immediately clear why R&D expenditure has tailed away over this period.

Growth rates do not, however, tell the whole story. While much has been made of the growing economic importance of western Canada, it is still the case that R&D expenditure at all levels is dominated by central Canada. Shares of total R&D expenditure in Canada, for both all sectors and funding sources as well as for the business sector alone (funding and performer), are reported in Table 8 below.

The discrepancy between eastern and western Canada is substantial; Alberta and BC account for around about 15 percent of R&D expenditure while Ontario and Quebec account for between 70-80 percent between them. Another way of seeing what these numbers mean: for every one dollar of R&D expenditure in BC, Ontario has about five. BC is of course a smaller economy, about twelve percent of the Canadian economy as a whole. Even from this perspective, though, BC still falls short. Admittedly, there have been some modest gains in recent years; nonetheless, there is a long way before any catch-up.<sup>18</sup>

<sup>18</sup> Shares and growth rates are useful gauges but it is helpful to have a sense of the overall size of these types of expenditures. In 2006, the last year for which data is currently available, the total amount of R&D expenditure in Canada as a whole was \$23.6 billion; in BC it was \$2.2 billion.

Why does this matter and what underlies it? It matters because it is widely accepted that there are significant spill-overs to R&D expenditures; see Bernstein (1988) for Canada. These spill-overs arise in general increases in productivity through innovation and skills development. There are also likely to be significant network effects arising through research and development which further contribute to society's well-being. One should bear in mind that BC, as part of Canada and with many connections to central Canada, still benefits from R&D expenditure located outside its provincial borders. But in terms of employment in particular, many of the benefits are not available to BC residents unless they leave the province.

What then underlies the discrepancy between provinces? This is an extremely important question and one that lies beyond the scope of this study. One obvious explanation is a head office effect: most businesses still locate their head offices in Ontario or Quebec and one suspects that R&D is most likely going to be close to head office.<sup>19</sup> Differences may also arise due to provincial tax treatment. R&D in all provinces is subsidized to some extent with federal tax credits playing an important role. But individual provinces also provide tax credits and these are not uniform across provinces. Mackenzie (2005) provides detailed estimates of marginal effective tax rates on the components of R&D expenditure by province; BC is reasonably generous (more so than Alberta) but not as generous as Ontario and Quebec. Interestingly, Quebec appears to be the most generous of all the provinces and still has a significantly lower share of expenditure than Ontario – tax rates cannot explain all of the variation.<sup>20</sup> One final point is worth emphasizing. While there is a consensus that R&D expenditure, because of its potential spill-overs, merits subsidies from governments, Mackenzie notes that the size of subsidies on offer from the federal and some provincial governments appear difficult to justify – though as yet we have no definitive study in Canada that has explicitly addressed this question.

**Table 8: R&D Expenditure Shares**

Share of Total R&D Expenditures in Canada, All Industries (percent)				
	Quebec	Ontario	Alberta	BC
<b>All Sectors &amp; All Funding Sources</b>				
1987-06	26.5	45.2	7.3	7.5
2002-06	27.2	45.3	8.0	8.6
<b>Business Sector</b>				
1987-06	31.0	51.2	6.8	7.2
2002-06	29.8	51.3	7.6	7.5

Source: Statistics Canada CANSIM Table II 3850001, constant 2002 prices.

Public investment supports a wide range of infrastructure services in areas such as education, health care, transportation water and sewer facilities, and public amenities. Within the province, federal, provincial, and municipal governments undertake public investment, though the bulk of it is through the provincial government, primarily in health and education. (Investment in power generation and transmission, often viewed as a component of infrastructure spending, is undertaken in BC primarily on a commercial basis by crown corporations and as such is part of business investment in the national accounts.) This type of investment is an important part of the economic environment in BC, providing amenities to its citizens as well as supporting BC businesses directly.

As a share of GDP, public investment is considerably smaller than business investment (2-3 percent compared to about 20 percent). Despite the difference in magnitude public investment is

<sup>19</sup> Related to this, one might suspect that Ontario's and Quebec's share of R&D is over-stated because of the large role played by the federal government, which is primarily located in Ottawa-Hull (a type of head office effect). For exactly this reason, Statistics Canada separates out Ottawa-Gatineau from the Ontario Quebec numbers and treats this as a separate region.

<sup>20</sup> K. Mackenzie (2005), "Tax Subsidies for R&D in Canadian Provinces," *Canadian Public Policy* 31(1), 1-16. His calculations are based on 2004 tax rates.

clearly an important complement to business investment. Numerous studies have demonstrated this empirically (the most well known being Aschauer, 1989) but the argument is really self-evident. Efficient and well-maintained infrastructure is a critical aspect of a commercial environment promoting investment and economic growth.

One recent feature of public investment undertaken by the provincial government in BC is a growing reliance on public private partnerships, or P3s. There are a number of oft-touted advantages to these arrangements:

- A significant portion of financing of large projects is not a general taxpayer liability; though user-pay fees must be put in place for a private sector role.
- Private sector expertise is available for project management both in construction and operation.
- Some investment risk may be borne by private investors rather than solely by the taxpayer.

There are of course important caveats to these advantages. Much depends upon the terms of the partnership and the quality of the private partners. There is no inherent reason why private construction should necessarily be superior to public construction. As well, much depends upon the availability of financial capital, as has been seen with the recent financial crisis that has affected P3 projects in BC. These are important issues but for the most part secondary to what we believe is critical for BC, which is ensuring that the appropriate mix of infrastructure services are provided to support business investment and overall well-being.

There is, however, one qualification that has not to our knowledge received much attention. Some infrastructure projects lend themselves well to P3 arrangements, where there is a commercially viable operation for private operators to recoup their investments. Toll roads and bridges come to mind. But other public investments are not well suited to P3s, such as schools and other facilities where fee for service is not possible or politically acceptable. The concern is whether P3 projects crowd out these other projects.

Suppose the government has a set amount that it is willing to commit to capital expenditures and is considering a variety of projects that, for simplicity, all have the same social rate of return. Projects that can be done as P3s may be preferred over other projects that require sole government financing, even though the social rates of return across all projects are the same. A further possibility is that the desire to pursue P3 funding may mean altering aspects of the project so that there is a commercial aspect to it. For example, re-structuring existing roadways to ensure that a toll road captures a commercially viable amount of the traffic. The requirement that all projects of a certain cost, as is the case in BC, be considered for P3 has the potential to push projects in such directions.

Alternatively, the ability to bring private investors on board for some projects may *free* up resources for traditional infrastructure spending. The common thread of these conjectures is that the reliance or promotion of P3s may influence not just the level of public investment but also the *composition* of public investment. Both are important influences on the commercial environment in BC and warrant further investigation, particular compositional effects.

## ii) Sources of Investment

### (a) *Broad Perspective*

All investment is sourced from saving but in an economy like British Columbia investment does not depend upon saving by BC households, firms or governments. Resources for investment can and indeed do flow into BC from the rest of Canada and the rest of the world. The ease by which capital is raised in BC is an important advantage of having a stable and well functioning regional economy tightly linked with the Canadian financial system and with access to the global financial system.

A natural question, though, is how dependent is BC upon external sources for its investment? One concern about dependence upon external sources is that these sources can be slowed or reversed, independently of events in BC itself. In other words, a dependence upon external sources of investment leaves a region like BC exposed to external shocks. Now, it is certainly the case that the benefits of access to national and international capital markets far outweigh potential costs from external shocks; nonetheless, it is still useful to understand the extent of exposure.<sup>21</sup>

There is another reason to consider the dependence upon external funding, though it is possibly tenuous given BC's integration in the Canadian banking system. There is ample empirical evidence on a cross-country basis that domestic levels of investment are dependent upon domestic levels of saving despite the apparent high degree of integration of international capital markets. One explanation for this relationship is that investment is facilitated by local knowledge and relationships. An extreme example of this is investment by firms using retained earnings (a type of saving) because they are otherwise unable or unwilling to raise capital. More generally, investors local to a region may be better able to assess local investment opportunities, or develop borrower/lender relationships, than investors or financial institutions from outside the region.

These sorts of arguments undoubtedly hold up when looked at from a national perspective. But from a regional perspective it is less clear. BC is seamlessly integrated into the Canadian financial system.<sup>22</sup> When firms raise funds using Canadian financial institutions or markets, it really doesn't matter (nor is it possible to determine) the origin of those funds. As long as financial institutions are aware of, and appreciate, investment opportunities within BC then no difficulties or concerns arise. That said, it is possible that investment is constrained to some extent due to a dependence on financial institutions largely based outside of the region.<sup>23</sup> Whether or not this is the case is an important area for further research since it is crucial to the long-term development of BC industry.

With these motivations – the exposure to external shocks and constraints on raising finance – we now consider as best as possible, the sources of BC investment with a focus on how dependent BC is on external sources, both Canada and the rest of the world.

We begin with a very broad perspective, the household saving rate in BC, which is presented in Figure 13. Comparable saving rates for Canada and three other comparable provinces are also included. While all provinces and Canada as a whole have seen a decline in saving rates since 1981, BC has experienced a much greater decline and since 1997 has had a negative saving

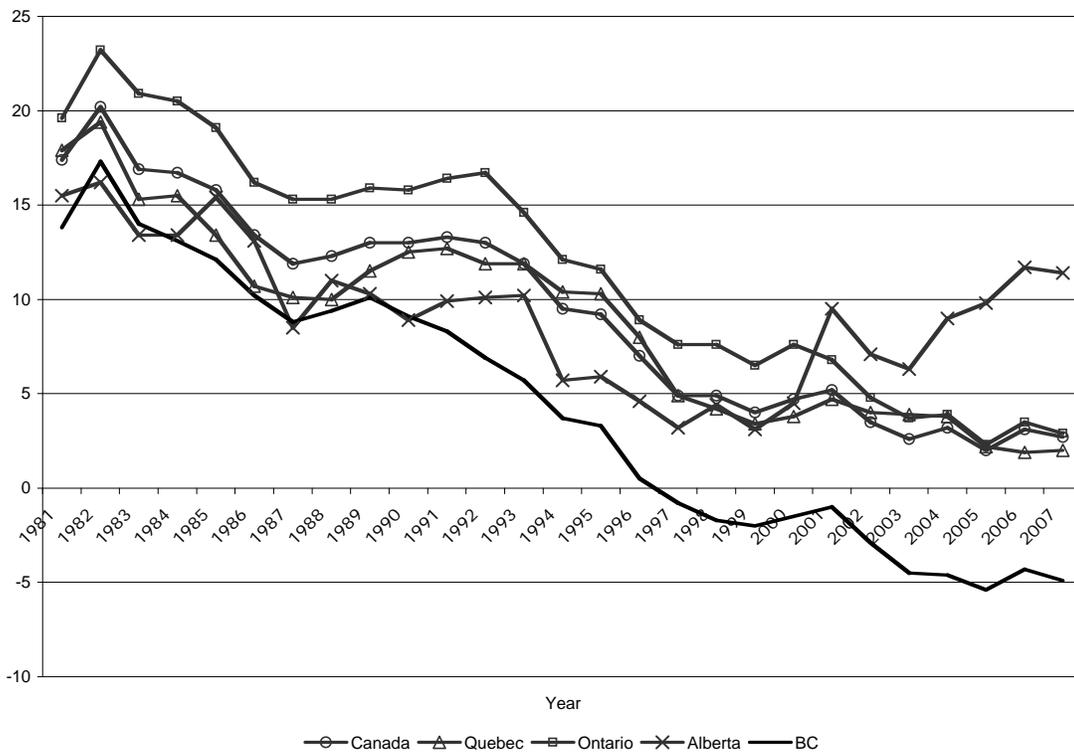
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<sup>21</sup> For example, at the time of writing, the financial crisis that began in the US housing market is still playing out with the effect of tightening of credit markets throughout the global financial system, including Canada. BC, as we shall see, tends to be a significant importer of capital; that is, it is very reliant on external sources of capital. As a consequence, we can anticipate that consumption and investment in BC will be adversely affected by the credit crisis beyond the effects of weak demand for BC production due to the deteriorating economic conditions in Canada and globally.

<sup>22</sup> Well, perhaps not as seamlessly as it could be because of existing provincial regulatory bodies for parts of the financial sector, notably securities trading and credit unions.

<sup>23</sup> An exception as far as banks are concerned is HSBC Canada, which has its head office in Vancouver and — anecdotally — lends heavily within BC.

rate. As of 2007, the last year for which we have data, the saving rate in BC was -5%.<sup>24</sup> It is difficult to know for certain why BC is so different from Canada as a whole. One immediate possibility is that BC has a higher share of retirees than the rest of Canada; however, there isn't a great deal of evidence to support this. In 2007, the share of 65 and older in the BC population was 14% compared to 13% for Canada as a whole. Another possibility is that BC has experienced a large increase in household wealth through capital gains, primarily associated with housing, and that this has allowed BC households to save less out of their current income. It's difficult to determine whether or not this is the case since data on household wealth by province is not available. Inspection of the saving rate series, though, provides little support for this conclusion. Household saving started declining well before the run up in asset prices in the late 90s and in houses post 2002. Moreover, it went negative well before the full effect of either these asset price increases, though there is a noticeable decline commencing around 2002. This may also be explained by high housing costs in BC reducing the ability of residents, particularly younger ones, to save.



**Figure 13: Household Savings Rates**  
**Source: Statistics Canada CANSIM Table 3840013**

Whatever the explanation, households in BC are clearly not providing — at least on balance — resources for investment in BC or elsewhere. Again, because BC is well integrated into the Canadian financial system this is unlikely an important constraint on BC investment. But it does have a broader implication in that any sharp contraction in availability of consumer credit may see a significant fall in aggregate demand in BC, which will then affect firms, both their revenues as well as their opportunities for investment. In the near future, it is difficult to see that this situation is going to change significantly. The demographics are such that, unless there is a large influx of

<sup>24</sup> Of the provinces not reported in the figure, only Prince Edward Island had a lower rate in 2007. Overall, four provinces had negative saving rates in 2007: BC, PEI, Nova Scotia, and Saskatchewan.

young migrants, the dis-saving associated with an aging population is going to ensure that BC continues to have a low household savings rate.<sup>25</sup>

Household savings are not the only source of savings for investment. Other sources include businesses, through retained earnings, and government. For a national economy, the discrepancy between all forms of saving and investment is immediately available through the current account on the balance of payments, which measures the extent of borrowing and lending with the rest of the world. At a provincial level, though, current account measures are not available. What is available is BC's trade balance, which will be a significant part of its unmeasured current account. It is easy to see how the trade balance is related to financial flows: if BC runs a trade balance deficit, its residents are consuming more through imports than they produce through exports. The excess must be financed through a combination of income on external assets and external borrowing of some form.<sup>26</sup> The former is likely to be significant for BC but is unfortunately not available.

BC's trade balance is presented in Figure 14 below. The trade balance is measured in nominal terms as a share of GDP, in total as well as being decomposed into its balance with the rest of Canada and with the rest of the world. The overall trade balance has, since the 1990s, been consistently in deficit. For most of the 1990s and early 2000s, it averaged around 5 percent of GDP, which is a substantial deficit by any standard. In recent years, though, the deficit has more than doubled as a share of GDP to over 10 percent. These deficits are consistent with the low levels of household saving discussed above and forcibly demonstrate BC's dependence upon external resources to finance its consumption and investment.<sup>27</sup>

We also get some information about what drives BC's trade deficits. Until the last few years, BC has had a trade balance surplus with the rest of the world but this has changed dramatically recently and explains the significant increase in BC's overall deficit since 2003. With respect to the rest of Canada, since 1981, BC has consistently run a trade deficit though this has lessened somewhat in recent years. The current situation can be easily summarized: BC currently consumes more than it produces and this is, in effect, financed to roughly the same degree by resources from the rest of Canada and from the rest of the world.

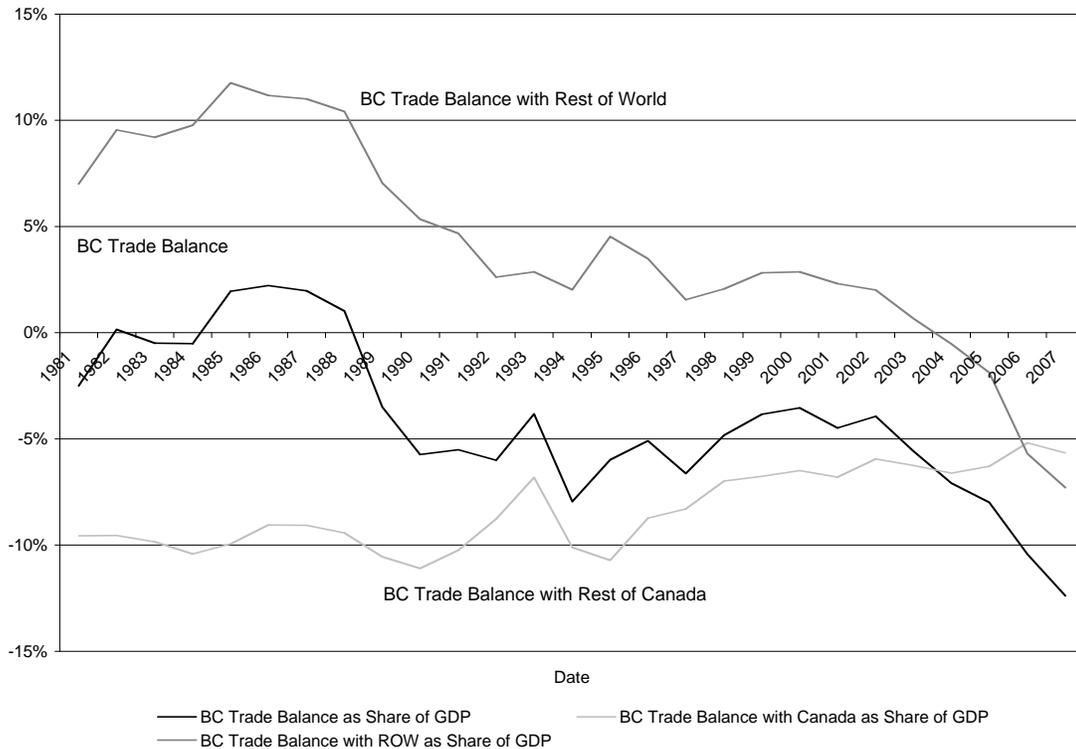
In the near future, there will be two main forces acting on these deficits. The tightening of credit conditions and weaker financial market conditions seen in 2008 and 2009 will, ultimately, serve to reduce consumption and investment, which will serve to reduce import demand. On the other hand, the weak global conditions will continue to suppress demand for BC's exports. Over the longer term, the critical issue would be determining what underlies the steady downward trend in the trade balance for BC with the rest of the world and how a more sustainable trade balance can be restored.

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<sup>25</sup> The Conference Board of Canada provides population projections for BC in its *Provincial Outlook 2009*. Between now and 2030, the share of the population 65 and over is expected to increase from 14 percent to 25 percent.

<sup>26</sup> Residents need not borrow from outside of the province to consume more than they produce; they can of course finance such consumption from external assets sale or income. External asset sales can be thought of as part of net borrowing.

<sup>27</sup> The trade balance measures come from the Statistics Canada's Provincial Economic Accounts. For the PEA, International and inter-provincial trade flows are constructed to be consistent with the overall System of National Accounts (SNA) and, as such, reasonably control for concerns about origin of production and final consumption. For a summary discussion of the construction of inter-provincial trade flows, see Genereux, P. and Langen, B. (2002), *The Derivation of Provincial (Inter-regional) Trade Flows: The Canadian Experience*, 14<sup>th</sup> International Input Output Techniques Conference, Montreal, Canada.



**Figure 14: BC Trade Balance**  
**Source: Statistics Canada CANSIM Table 3840002**

**(b) Foreign Direct Investment**

Foreign direct investment involves ownership in a firm by non-resident investors to the extent that an investor has a lasting influence and a significant management influence.<sup>28</sup> For the most part, FDI is generally recognized as an important source of resources for developing local industries. Moreover, FDI is often thought to bring with it additional advantages, or spillovers, to the host country. These spillovers take the form of greater productivity arising from exposure to superior means of production and management, as well as from exposure to greater competition.<sup>29</sup>

An alternative perspective on FDI relates to a concern raised previously: dependence on FDI, or indeed investment resources from the rest of Canada, may leave BC exposed to external shocks. One might also argue that FDI limits the potential for local companies to develop. Both of these possible costs, however, are likely to be dominated by the potential benefits associated with FDI and this is certainly the perspective taken by policy makers in Canada and BC in recent years.

Our own perspective on this is relatively straightforward. Setting aside subtleties such as positive and negative spill-overs, BC is very dependent upon external sources for investment and in order to continue to develop its industries it is going to have to continue to attract investment from the rest of Canada and overseas. This will require appropriate tax, regulatory, and land use policies that balance social and economic prosperity.

Historically, Canada has relied extensively on foreign direct investment as an important source of capital to develop its industries and while that dependence has lessened over the years, FDI is still an important source of resources for Canadian industry. For example, in 2008, Canada

<sup>28</sup> Statistics Canada Catalogue 67-506-XIE.

<sup>29</sup> Görg and Greenaway (2004), "Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?" *The World Bank Research Observer* 19 (2) pp. 171-197.

received about \$50 billion in foreign direct investment, over one half of all inward investment in the Canadian economy.<sup>30</sup>

As an important source of investment, it would be of considerable interest to know how that investment is distributed across the country; however, information on FDI by province is not available. An alternative is provided by Statistics Canada's *Foreign and Domestic Investment in Canada 2006-08*, which measures physical capital expenditure by firms across provinces and industries where firms are separated into country of ownership control.

**Table 9: Capital Expenditures by Foreign Controlled Firms**

Share of Total in Canada – All Industries (percent)			
	2006	2007	2008
Quebec	13.9	14.2	15.0
Ontario	34.4	35.4	32.5
Alberta	28.8	28.5	30.1
BC	9.0	8.4	9.5
Rest of Canada	13.9	13.5	12.8

Source: Table 3.1, Statistics Canada Catalogue no. 61-232-X, 2008. 2006 numbers are actual data; 2007 are preliminary actual data; 2008 numbers are intentions.

Table 9 reports the provincial shares of all capital expenditure, construction and machinery and equipment, by foreign controlled firms in Canada. It can be interpreted as a provincial measure of activity by foreign firms, which is an indicator of where foreign direct investment is being located within Canada. Based on the 2006 numbers, which are estimates of actual expenditure, Alberta and Ontario are the primary recipients, accounting for over sixty percent of such expenditures. This is perhaps not too surprising as these two provinces are dominant in capital intensive industries, such as automotive and oil and gas. BC's share is considerably smaller. If we use the relative size of BC within the Canadian economy, 12 percent, as a crude indicator of what we might expect, then BC's share of 9 percent is somewhat below this benchmark.

What implications does this have, if any? First, there is no sense that BC is unduly exposed or dependent upon foreign capital expenditure at least relative to the rest of Canada. Second, it does suggest that BC is dependent upon sources from within Canada (over 90 percent of capital expenditure in BC is coming from domestically controlled firms). Finally, it suggests that there may be opportunities to expand investment within the province by attracting greater amounts of foreign investment.

These last two conclusions highlight a key aspect of how policymakers need to view policies that affect investment opportunities within BC. While foreign investment may provide resources that might otherwise not be raised, much investment is national and it may be easier and more efficient to attract investment from the rest of Canada.

We can further decompose the capital expenditure numbers on an industry basis. The 2006 shares of foreign controlled capital expenditure for BC are presented in Table 10. One immediate conclusion is that apart from the finance industry, it is the older style industries that have a significant proportion (around 30 percent) of capital expenditure coming from foreign controlled firms (manufacturing, transportation, retail trade). This may reflect the fact that these types of industries are well-established and represent easily appreciated opportunities for foreign investors. The same can be said for the finance sector, as well. In contrast, new economy type sectors – captured roughly here by two categories: (i) Information and Cultural Industries and (ii) Professional Services – are not significant recipients of foreign-based capital expenditure, suggesting these sectors may have more difficulties in attracting overseas investors.

<sup>30</sup> Statistics Canada Catalogue 67-001-X. Interestingly, in late 2008, Canada became a net international creditor for the first time since 1926, partly reflecting a positive foreign direct investment position, meaning Canadians, on balance, had more controlling interests abroad than were held by non-residents here; Statistics Canada Catalogue 67-002-X.

The other somewhat surprising result is the mining sector, which is relatively small at 14%. Contrast this with Alberta, where the energy sector has been developed to a much greater extent; there, the share of foreign firms in capital expenditure is about 28 percent (2006). If Alberta provides a guide as to how this sector is likely to develop, then we can expect a much greater reliance on foreign capital in this sector in the future.

**Table 10: Foreign Capital Expenditure by Selected Industry Sector 2006**

Selected Industry Sectors	Foreign Controlled Share of Capital Expenditure in BC (percent)
Agriculture, Forestry, fishing and hunting	3.6
Mining and Oil and Gas Extraction	15.7
Construction	3.3
Manufacturing	31.6
Wholesale Trade	22.6
Retail Trade	34.4
Transportation	35.3
Information and cultural industries	7.9
Finance and Insurance	71.6
Real Estate and Rental and Leasing	33.3
Professional, scientific and technical services	14.1

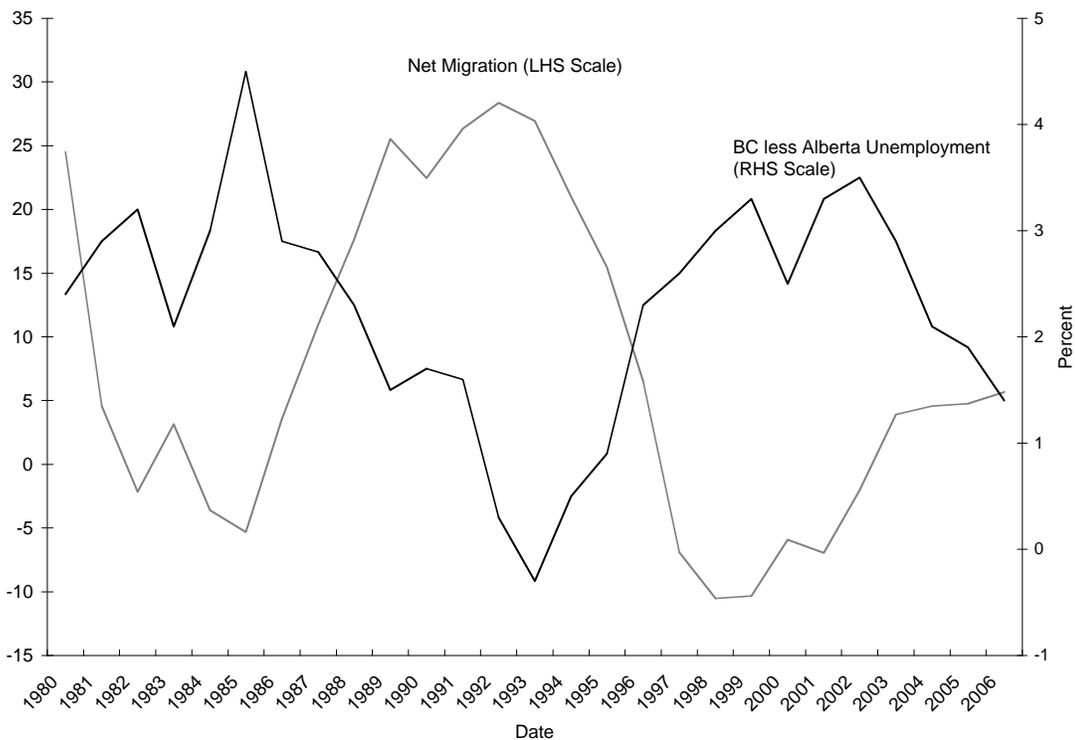
Source: Tables 3.2-3.13, Statistics Canada Catalogue no. 61-232-X.

### 5. Population and Workforce

The success of the BC economy over the coming decades in all the areas discussed so far largely depends on the number, age and skills of its workers. With an aging population, simple demographics make inevitable a period of significant changes, but there is much room for government policy and business activity to alter outcomes.

The basic situation is familiar: as the baby-boom generation retires, the relative size of the labour force will shrink and the demand for public services will grow. Immigration from elsewhere in Canada and abroad can partially offset this, but no one expects it to bridge the gap completely. And the immigrants who do arrive will need more services to ensure that they can achieve their potential in the workforce. To maintain living standards, the productivity of workers will need to increase, and this will require investments in both human and physical capital.

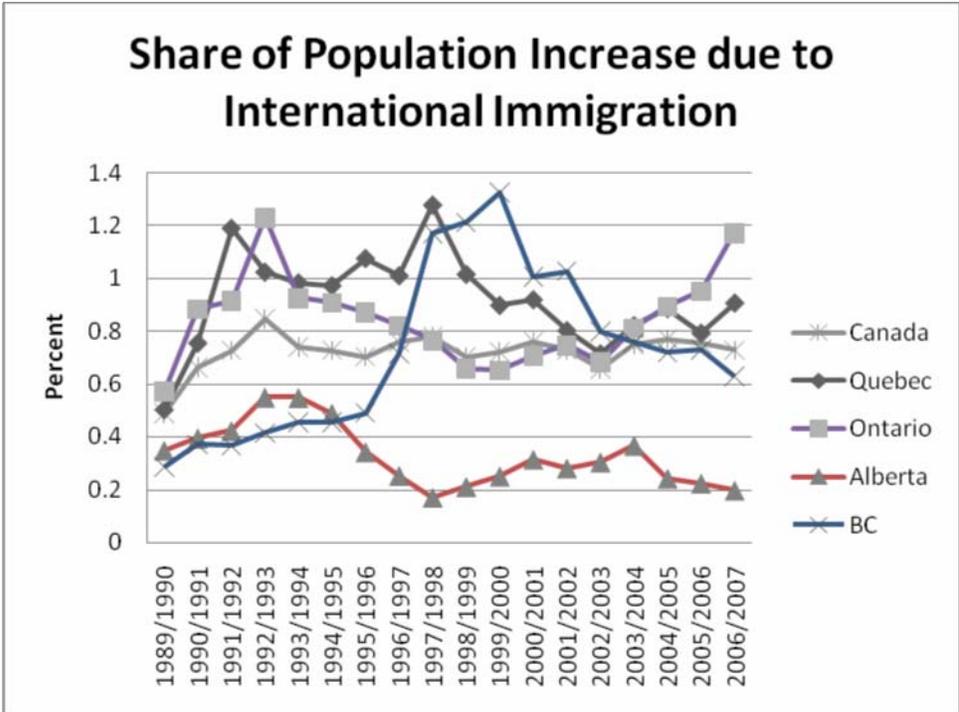
With a fertility rate among the lowest in Canada and well below that required for population stability (approximately 1.4 in 2005), BC will continue to rely on both international and interprovincial immigration for population growth. This in turn requires continued economic opportunity. This connection can be seen very clearly in Figure 15, which plots the relative unemployment rates of 24-45 year olds in BC and Alberta and BC's net migration of 15-49 year olds.



**Figure 15: BC and Alberta Net Migration and Adult Unemployment**  
**Source: Statistics Canada CANSIM Table 2820002, 0510012. Net migration is total BC net interprovincial migration of persons aged 15-49 years. Relative Unemployment rate is BC unemployment rate minus Alberta unemployment rate, ages 25-44.**

During the late 90s and early 2000s, many British Columbians left for greener pastures elsewhere. Of course, Alberta is the easiest place for British Columbians to move to, and other places entail greater costs. In particular, international immigration depends on many factors beyond economic opportunity. However, for potential workers, the state of the economy remains

key. In turn, BC is heavily dependent on international immigration. Figure 16 plots the contribution of international immigration to total population growth. During the exodus of the late 1990s, this ratio exceeds one, meaning that were it not for international immigration, the population of BC would have declined.



**Figure 16: Share of Population Increase due to International Immigration**  
Source: Statistics Canada CANSIM Table 051004

Even accounting for the most optimistic forecasts for immigration, the share of older citizens will continue to increase. As the Canadian population ages, it is not surprising that older migrants constitute a larger share of total interprovincial migration. Since BC is a desirable retirement destination, interprovincial migration might be an extra source of an ageing population, and this is true to some extent. However, as shown in Figure 17, this is true for Alberta also, and in fact western provinces in general. Overall, at least for the near future, it does not appear that interprovincial migration will be a large contributor to the ageing of the BC population. (BC Stat Migration Highlights June 2008).

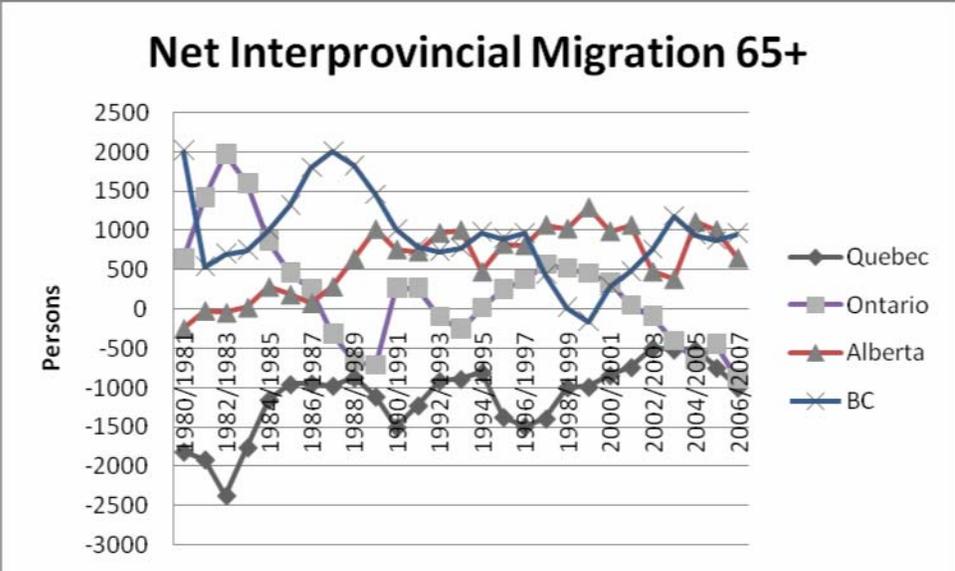


Figure 17: Net Interprovincial Migration ages 65+  
Source: Statistics Canada CANSIM Table 051-0012

Expressions of concern about the ageing population often focus on the dependency ratio. This measure is defined variously, but seeks to capture the demands placed on the working age population by non-workers. The total dependency ratio is the ratio of the population under 16 and over 65 to that between 16 and 65. Over recent decades, the total dependency ratio has declined dramatically, as demonstrated in Figure 18.

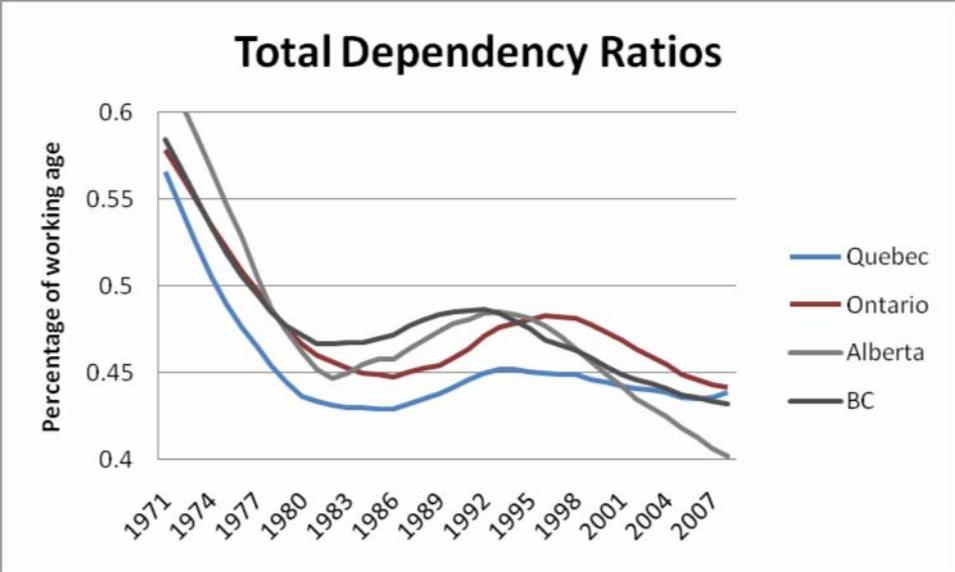


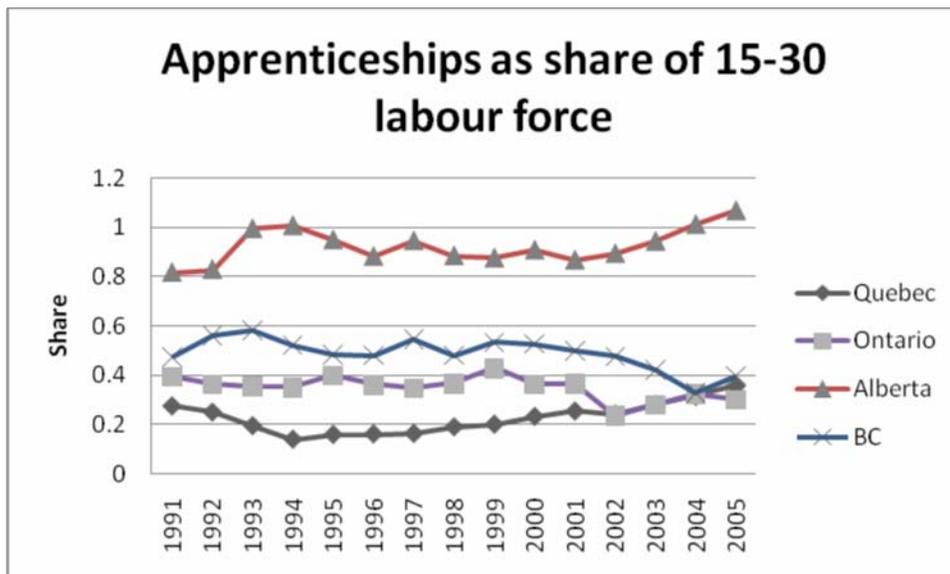
Figure 18: Total Dependency Ratios  
Source: Demography Division Statistics Canada

This decline, of course, is due to the diminishing share of under 16 year olds. In the coming years, the dependency ratio will increase again, but because of the very same baby-boomers who drove the rate so high in the 1960s will begin turning 65. Estimates suggest that in BC the

Elder Dependency ratio will continue to rise, reaching about 0.40 by 2030.<sup>31</sup> This will bring the total dependency ratio back in line with where it was 40 years ago, but this time the choices faced by society will be more difficult. When the baby boom generation was young, very large outlays were required for education; as this generation ages, the requirements will be for health care. The problem arises because investing in education builds the very capacity required by the labour force to care for those not working: in the coming years necessary investments in human capital will be in competition with the care for the elderly.

Whatever the size of the population, it is critical that British Columbians have the skills and knowledge to compete with workers elsewhere. In the past relatively unskilled workers earned good wages in highly capital intensive resource industries. But in the future, these jobs too will require greater skills. To a great extent, the skills needed will not be provided by simply improved primary and secondary education, though there is no doubt room for gain here. Apprenticeships are the key to raising the productivity of much of the workforce. Shortages of skilled trades lower the productivity of all workers, raise costs, and slow capital investment. Unfortunately, BC has not been a leader in the development of the apprenticeship system, and if anything the situation is worsening recently; see Figure 19. This system, and its improvement, is the joint responsibility of government and the private sector. Despite efforts at improvement, much work remains to be done.

A very useful example of the sorts of initiatives required is provided by the development of the biotechnology sector in North Carolina, the focus of a recent article in *The Economist Magazine*. In addition to various incentives provided to the sector as well as a cluster of research universities, both of which were and continue to be critical to the sector's development, the state colleges have also played a role by providing specialized training for technicians required in the industry.<sup>32</sup>



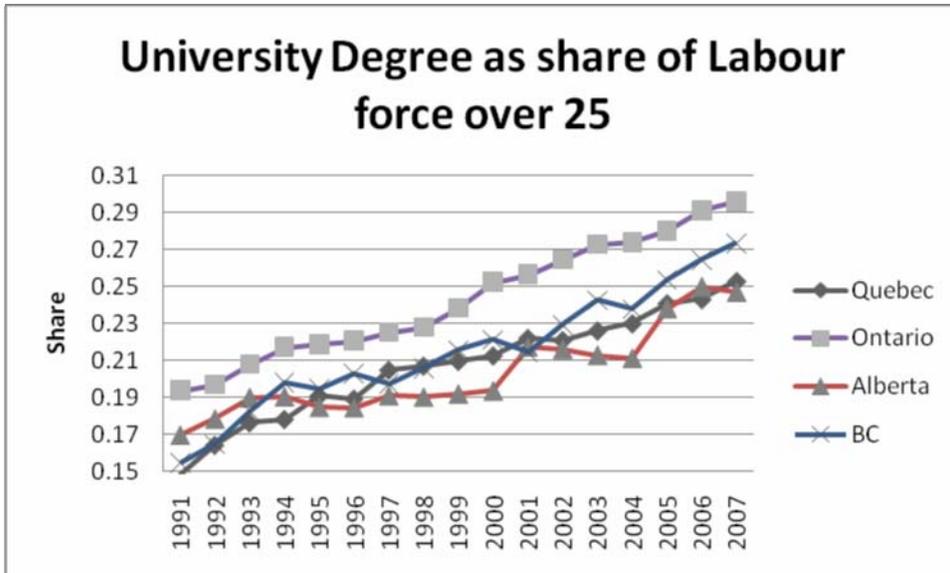
**Figure 19: Apprenticeships as Share of 15-30 Labour Force**  
**Source: Statistics Canada CANSIM Table 4770052, 2820002. Total completed apprenticeships, all ages, all trades.**

When looking at university education, BC fares somewhat better. Over the past couple of decades, the share of British Columbians in the labour force with a University degree has increased rapidly, can be seen from Figure 20. (For comparison, the proportion of the *population* 25 – 64 in 2006 was in BC 28%, in Australia 24%, in Germany 15%, in the Netherlands 28%, and

<sup>31</sup> BCStats: <http://www.bcstats.gov.bc.ca/data/pop/pop/SeniorsDemographics.htm>.

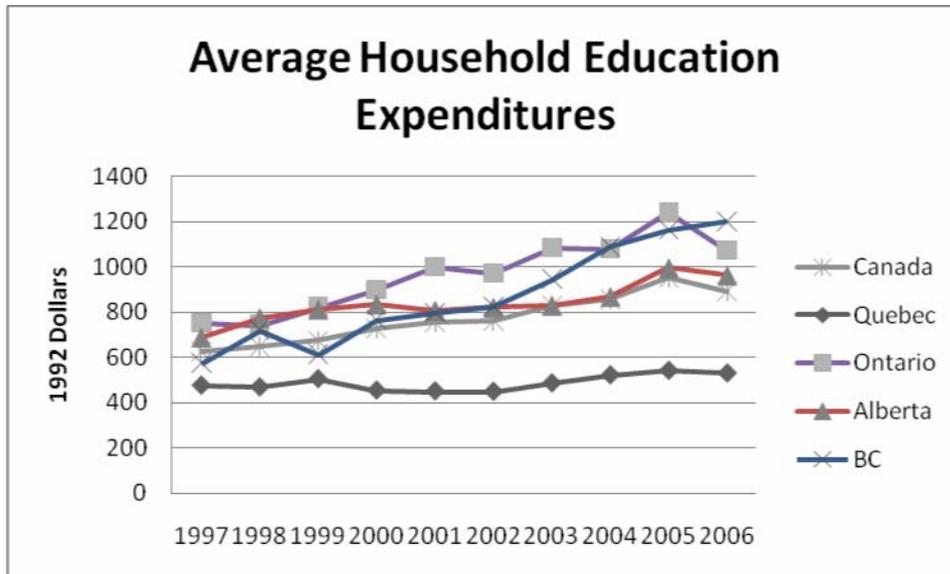
<sup>32</sup> "Pipettes at the ready," *The Economist*, 16 April 2009.

in the US 35%).<sup>33</sup> BC has recently undergone a prodigious building boom for universities, expanding capacity at existing institutions, converting colleges into universities, and accrediting private universities. The end result of this effort is far from certain -- and it seems clear that future adjustments are in store -- but this certainly makes it likely that the increase in Figure 20 will continue for some time. Commensurate with this increase, British Columbians have been spending much more in real terms on education, doubling from just below to substantially above the Canadian average in the last decade. See Figure 21. Part, and perhaps much, of this is due to increased tuition rates, but even so it demonstrates a strong willingness to build human capital. (Though counted as consumption, this expenditure is really investment, so this increase might be counted, if only slightly, against the low savings rates discussed above.)



**Figure 20: University Degree as Share of Labour Force over 25**  
 Source: Statistics Canada CANSIM Table 2820004.

<sup>33</sup> OECD *Education at a Glance 2008: OECD Indicators* ( OECD Publications 2008) Table A1.3a



**Figure 21: Average Household Education Expenditures**  
**Source: Statistics Canada CANSIM Table 2030012, 3260021**

Immigration raises the average years of schooling in the BC population. On average, it is better educated Canadians who move between provinces, and BC benefits from this fact. Similarly, the Canadian immigration system rewards education, and so international immigration further raises the average level of education in the BC workforce. However, international immigrants do not fare so well in the labour market as the native born. Many factors may partially account for this discrepancy, including discrimination and the restricted set of locations chosen by immigrants. However, part of the explanation seems to lie in the distinction between years of schooling and quality of training. For example, Coulombe and Tremblay (2009) find that the average level of skills among international immigrants is substantially lower than that of the native born population.<sup>34</sup> Despite the emphasis placed on education by the immigration system, this research indicates that the greater share of international immigrants attracted to the major cities in the wealthier Canadian provinces actually reduces the skill disparity between provinces.

Over time the differential between immigrants and the native born disappears, at least looking backward from the present time. For example, consider Table 11, which gives the labour market outcomes for immigrants to BC in 2007. Whether this change is real and due to the slow but steady assimilation of immigrants, or apparent and due to the changing nature of immigrants over time is the subject of much debate. Likely some of each is true, but on the span covering in Table 11, presumably much is due to assimilation. Nevertheless, it is clear that if BC hopes to capitalise on its attractiveness to international immigrants, much improvement in the rate of assimilation is required.

<sup>34</sup> Coulombe, S. and Tremblay, Jean-François (2009), "Migration and Skills Disparities across the Canadian Provinces," *Regional Studies*, 43:1, 5-18.

**Table 11 BC Immigrant Labour Force Outcomes**

	Very Recent Immigrants	Recent Immigrants	Established Immigrants	Native Born
<b>Participation Rate %</b>	72.0	78.8	85.2	86.9
<b>Unemployment Rate %</b>	7.7	6.2	4.1	3.1

Source: Gilmore, Jason. *The Canadian Immigrant Labour Market in 2007* Statistics Canada Catalogue 71-606-XIE2008003 May 2008. Table 9. Very recent immigrants arrived within the past five years, recent immigrants within 5-10 years, and established immigrants more than 10 years ago.

## 6. BC's Future

So far, our discussion has been descriptive, examining important characteristics of BC and how it is situated in the global economy. Along the way, we have identified some key developments and challenges that BC currently faces and that will bear on its future. Now, we turn our attention more explicitly to BC's future.

At the best of times, forecasting is, as our antipodean cousins would say, a mug's game. In the midst of the current financial crisis and global recession, the perils of forecasting are even greater and it does not seem especially useful for us to conjecture on specific details of how the BC economy will develop.<sup>35</sup> Rather, we lay out here a number of issues and principles that we believe merit the attention of British Columbians as we continue to engage and develop our economic ties with the rest of Canada and the global economy.

We organized our discussion around three important linkages for a small open economy – trade, investment, and the work force. Although there may be setbacks in the coming years, it would be wrong to believe that international trade and investment linkages will not continue to develop and these present enormous opportunities and challenges for British Columbians. As we have seen, there is considerable scope for BC to expand its trading and investment relationships with the rest of the world. In doing so, we would hope that BC continues to develop a diversified set of trading partners, which should ensure greater stability of trade flows and employment in the tradable good sectors.

By the very nature of its location and the rapid development of the Asian economies, BC will almost certainly see a continued expansion of its trading and investment relationships with the Asia-Pacific region. This expansion needs to be thoughtfully embraced as it has the potential, if managed well, to significantly enhance the well being of British Columbians. This will require a strong presence at the national level by BC leaders to ensure that these trade and investment linkages, so dependent upon national public policy, receive the attention and encouragement they deserve.

In British Columbia, as with the rest of Canada, the global downturn has been more detrimental to export sectors than to the domestic economy. As a result, BC in general has been partially shielded from negative consequences as a result of its relatively low trade intensity. Despite this, going forward, the BC economy could potentially benefit from a larger and more diverse export sector. Forestry has long driven exports in the province, but the combination of pine beetles, trade issues and sectoral decline, suggests that new engines of export growth are needed in the province. A vibrant and diverse export sector has considerable potential to generate productivity improvements and wealth creation for the province. Economists have long noted that companies that export tend to be more productive, grow faster, and contribute positively to their domestic economies.<sup>36</sup> This is particularly true of export industries rooted in high-tech, value added industries. As BC moves forward into an increasingly knowledge-based world, a strong export sector has the potential to contribute to a strong economy.

Expansion of trade and investment linkages also requires the careful development and maintenance of a transparent regulatory environment to manage increased amounts of foreign involvement in the BC economy. As we noted earlier, BC will likely see increased levels of foreign investment, particularly in the mining and energy sectors.<sup>37</sup> In addition to facilitating the development of these sectors, foreign investment brings considerable benefits in terms of skills and technology transfer. But trade and foreign investment often engenders significant public

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<sup>35</sup> The Conference Board of Canada, however, does provide useful long-run forecasts for Canada and the provinces, see their publication *Provincial Outlook Long-Term Economic Forecast 2009*.

<sup>36</sup> See for example: Baldwin, J. and W. Gu, 2003. "Export-market participation and productivity performance in Canadian manufacturing," *Canadian Journal of Economics* 36(3), 634–57.

<sup>37</sup> Conference Board of Canada (2009) forecasts the growing relative importance of mining, particularly metals, and energy for BC over the next two decades.

backlash particularly over concerns of domestic employment and national sovereignty. This backlash can be allayed to considerable extent by the consistent application of a transparent regulatory and commercial environment.

Just such a backlash has been apparent in recent months in our largest trading partner, the United States. Faced with a significant recession, in November American voters elected what appeared to be one of the most “trade sceptical” set of federal officials in recent memory.<sup>38</sup> Prior to the election, (then Senator) Obama discussed re-negotiating NAFTA, and a stimulus bill passed early in his Presidential administration contained “Buy American” provisions which alarmed many exporters. In early June 2009, the calls for tit-for-tat retaliation have gained national prominence when the Federation of Canadian Municipalities passed a resolution calling for municipalities to procure materials for infrastructure projects from companies from countries that “do not impose trade restrictions” on goods from Canada.<sup>39</sup> At the Canada-US border itself, increased inspection, tracking and document requirements since 2001, most recently the requirement of enhanced documents at land crossings as of June 1, 2009, have increased the costs and time required for Canadian firms to export to the US. This has led to significant concerns about the access Canadian firms will have to the large and important US market.

It remains to be seen how much of the perceived increase in US protectionism will translate to real economic impacts for BC’s exporters. The Obama administration has pledged that the “Buy American” provision will not violate existing trade agreements (including NAFTA), and while his campaign rhetoric was trade-sceptical, his choices for key trade posts once in government were significantly more pro-trade.<sup>40</sup> Relative to other Canadian provinces, British Columbia’s exports are already amongst least dependent on the US market, however, with half of our exports still destined for the US, any increase in American protectionism remains a significant concern for British Columbia’s exporters. As the experience of BC’s softwood lumber industry demonstrates, increased trade restrictions to our largest market, in any form, can have substantial implications for the BC economy. Going forward, it will be important for policy makers to continue to press for open access to the US market for Canadian firms. However, given the relative size of Canada and the US, policy lobby can only be expected to go so far. To guard effectively against this type of vulnerability suggests BC must work to continue the existing trend of diversifying both the products it exports and the destinations of those exports.

Just as the global economic downturn has contributed to the rise in protectionism, it has also almost certainly altered North American attitudes towards industrial policy. In Canada and the United States, as in many other countries, we are witnessing a much greater involvement of government in industry, not by design but by necessity. Most notably in the financial and auto sectors but no doubt other sectors will follow suit. This unintended foray into industrial policy raises important questions for all policymakers, including those in BC. What role is there for government in directing and developing industries; what policies are best suited to developing industries, new and existing; and finally, what industries are best supported. Such questions bear on trade and foreign investment policies, as well as taxes and subsidies.

As each industry and region of the province is, to some extent unique, we hesitate to identify specific answers to these questions. But, there is an important broad principle. Government initiatives should be broad-based, not industry specific. Structural adjustment programmes and investment incentives, for example, should not differ across industries. In terms of foreign investment, government’s role is to facilitate all opportunities rather than target specific opportunities. In terms of exports, its role is to broadly facilitate trade rather than identify and promote a key industry. The objective is to minimize the distortions government has on investment and production decisions so that firms, those that bear the costs and benefits of their decisions, make the investment decisions. There are important reasons for this approach. Beyond avoiding the obvious difficulties of picking winners, channelling investment, even to fairly

<sup>38</sup> Busch (2009) “The Perfect (Anti-Trade) Storm? Recession, the November US Elections, and What It All Means for Canada”, *Conference Board of Canada*.

<sup>39</sup> [www.fcm.ca](http://www.fcm.ca) accessed June 8, 2009

<sup>40</sup> Busch (2009).

broad categories, limits the felicitous role of serendipity inherent in much productive research. And governments face the real risk of being captured by particular industries to the detriment of other industries and ultimately the well being of British Columbians.

One aspect of the BC economy over the near to medium horizon that is not likely to change is the important role of the resource sector. As we noted earlier, BC is perhaps not as dependent upon the resource sector as some might imagine; nonetheless, given the wealth of natural resources we have in the province and the relatively small population, resource industries both traditional and new will no doubt play an important part in BC's future. And resource-based industries pose their own set of issues that merit careful consideration by policymakers and business leaders alike. To a greater extent than traditional manufacturing and service based industries, resource industries require substantial public management and involvement because of the common use, publicly owned resources at their foundation. Whether BC has managed its resources well in the past and how it should best do so in the future is an open and important question for BC's future.

Finally, the demographic projections for BC are fairly stark: based upon past experience, BC will continue to age significantly as the baby boomer cohort ages and inter-provincial migration to BC for retirement purposes continues. While pleasant, such a future is not inspiring. Fortunately, it need not be so stark. BC has a number of significant advantages that should allow it to build a more dynamic, balanced economy. The first advantage has been identified previously; geographically, BC is positioned to benefit from the development of the Asia-Pacific region. Such positioning should, over time, see many more firms locate activities in BC and home grown firms develop. As BC takes on this more central role for business activity, we should expect to see more business investment (beyond real estate) and research and development activity, all with the potential spillovers contributing to economic growth.

BC's other critical advantage is the potential quality of life it affords its workforce. BC has many natural advantages that have driven tourism and retirement for many years but such advantages are likely to be a strong force in the future development of BC's economy. As we've seen, sustaining prosperity will require continued strong immigration, and in turn immigration can be expected if we can sustain our prosperity. This will require a careful balancing of government and business priorities. Paradoxically, the very development in Asia and elsewhere needed for robust growth in our resource sectors will make attracting immigrants more difficult. We expect that a key part of the strategy will be finding ways to take better advantage of the potential of immigrants. This will be costly, but like the investment in education in the 1960s will pay dividends for decades to come.

More generally, BC will benefit greatly if it can continue to build on these natural advantages to ensure that there is a high quality standard of living, broadly based and sustainable.<sup>41</sup> We suspect that this will serve to attract long-term employers and their employees to the province as much as any other factors. And unlike many of the choices facing British Columbians that bear on the economic development of the province, the quality of life in the province is largely under its own control.

We conclude by returning to a theme that has arisen often throughout the paper. While it has been useful to think of BC in isolation as a small open economy, there are serious limits to doing so. BC is, of course, an integral part of Canada and its linkages to the rest of Canada are just as important as its linkages with the rest of the world. These linkages, which for the most part are unhindered by tariffs, regulations, cultural and language barriers, represent the same sorts of

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<sup>41</sup> Much of the debate surrounding these issues focuses on labour productivity, roughly real output divided by hours of work. Over recent years, B.C.'s growth in labour productivity has lagged the rest of Canada, and with Canada, much of the developed world (see Andrew Sharpe and Jean-Francois Arsenault *Productivity Drivers in British Columbia: Strategic Areas for Improvement* Centre for the Study of Living Standards Research Report 2008-9 for an extensive discussion.) While it's true that ultimately labour productivity is crucial for improving wages and hence living standards, like growth in GDP, it is a measure of a problem and not something to be addressed directly. Instead, governments and the private sector need to focus on opening trade, and on investment in physical and human capital, the issues we have been discussing here.

opportunities that BC has with the rest of the world. This to us is self-evident but often seems lost in the debate about BC's future.

Moreover, our international linkages are to a significant extent governed by rules and regulations that are under federal jurisdiction. Tariffs, immigration, and capital market restrictions – these are all determined at the national level. This brings many benefits not least of which is the international representation provided by the national government, a far greater presence than BC could muster itself. But it does mean that BC needs to be very well represented at the national level, particularly as the objectives and requirements of BC may not always directly coincide with other parts of the country.