

# Assessing the economic impact of head offices in city regions

PREPARED FOR THE COMPETITION POLICY REVIEW PANEL

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# Executive Summary

**THE COMPETITION POLICY REVIEW PANEL** was established by Canada's Ministers of Finance and Industry with two objectives:

"The Panel will review key elements of Canada's competition and investment policies to ensure that they are working effectively, allowing us to encourage even greater foreign investment and create more and better jobs for Canadians."

"Separately, the Panel will look at whether our investment policies are working effectively to encourage Canadian firms to invest abroad and become more diversified by reaching out to new investment opportunities."

Government Press Release,  
July 12, 2007

The Panel has an inward and outward mandate – how to ensure that Canada is an appealing location for prosperity-enhancing foreign direct investment and that our Canadian firms are reaching out to seize international opportunities. It has determined that the impact of head offices is an important issue for it to address, with the following questions in mind:

- > What is the impact of head offices on local economies?
- > By extension, what is the impact on the national economy?
- > Are there public policy implications emerging from the type and size of benefits?

The Panel and its research staff have found little data from existing infor-

mation sources to shed light on this question. It has asked the Institute for Competitiveness & Prosperity to help answer these questions.

We conducted four sets of analysis.

- We reviewed existing academic research on the subject.
- We conducted our own research into the impact of head offices on R&D location decisions – looking primarily at where the largest global corporations were currently locating their research centres. We also analyzed differences between Canadian-owned and foreign-owned R&D performers in Canada.
- We assessed the community impact of Canadian-owned and foreign-owned head offices in Canada's four leading headquarters cities. We interviewed corporate executives responsible for community affairs in some of Canada's largest corporations, both Canadian- and foreign-owned to determine how head office location factors in corporate decisions on community involvement and charitable giving.
- We conducted statistical analyses to measure the correlation between the number of head office units and employment at head offices and the quantity and quality of high-value occupations and business services in the city regions. We also commissioned special tabulation of Statistics Canada data to determine the difference between Canadian- and foreign-owned head offices in salaries and purchase of outside services.

**In summary, we conclude that head offices are important to the economic**

**health of our large city regions, but on balance the evidence does not support the conclusion that head offices of Canadian-owned firms are more important than those of foreign-owned firms.**

**Head offices have positive economic impacts on their city regions.**

On a direct basis, head offices pay much higher salaries than other establishments. The presence of head offices correlates in varying degrees with more employment or higher wages or both in high-value business services. Head offices are significant contributors to local charities – in corporate and employee contributions and in involvement by senior managers and employees. In the area of research and development, we find that the location of a global head office is becoming less important in the establishment of new corporate R&D facilities. To be sure, legacy effects mean that most large R&D performers globally have facilities near their head office. But current and future expansions of R&D facilities are being located to be close to customers or researchers.

**The evidence does not indicate that Canadian-owned head offices have greater local economic impact than foreign-owned firms.** A critical question, however, is whether or not Canadian-owned head offices create significantly higher spin offs than the Canadian head offices of foreign-owned subsidiaries. Our research indicates no solid evidence that Canadian-owned firms create stronger benefits for the local economy than do foreign-controlled head offices. Where we find a statistical relationship, there is a tendency for the presence of Canadian head offices to have a stronger association than foreign head offices with high-value cluster employment and wages; but there is a slightly higher tendency for there to be no difference.

When we compare compensation at Canadian head offices and foreign head offices we find much higher averages in the latter. While Canadian-owned head offices spend slightly more than foreign-

owned head offices on outside business services, foreign firms purchase outside advertising and promotion services at a much higher rate.

Head offices are also important to local charities and community involvement initiatives and Canadian firms tend to contribute more than foreign-owned firms; however the foreign firms that are involved tend to be smaller than the Canadian firms. When we control for firm revenues in Canada, differences in corporate contributions disappear.

The strength of Canadian firms' charitable contribution is borne heavily by our five large banks headquartered in Toronto. When we exclude the five major Canadian banks from our analysis, the differences in contribution per firm are much smaller.

In the future, however, head office locations will become less important to local charities as corporate giving becomes more strategic and closely related to business needs.

**Large cities are important drivers of economic activity related to head offices and high-value occupations and business services.**

Our research indicates that head offices in Canada and the United States tend to be in larger cities – they do not agglomerate like specialized clusters. Given Canada's smaller number of city regions with more than 1 million people, it is not surprising that nearly three quarters of head office employment in Canada is located in four cities. At the same time, high-value occupations and business services are concentrated in larger cities. It is impossible to determine whether head offices drive the strength of these high-value industries and occupations or vice versa. More than likely, they support each other in a mutually reinforcing framework. Large cities are home to many people in high-value occupations and business services and this strengthens the effectiveness of head offices in the same cities. At the same time, large cities are home to many head offices which create demand for people in high-value occupations and

business services. The common factor is large cities – and it is difficult to separate out the impact of population on the presence of spillovers between head offices and these high-value occupations and business services.

**From a public policy perspective, it is important that our economic environment supports the success of both Canadian-owned and foreign-owned businesses.**

Economic policy should be aimed at creating the environment for Canadian-owned firms to innovate, expand, and become global leaders. It is important that Canada develops its own firms who are global leaders for three reasons. First, the profitable expansion of a Canadian company to become a global leader often creates huge equity gains for its owners here in Canada with ensuing local spillovers. Second, the presence of successful Canadian global leaders helps ensure Canada's relevance on the global stage in the creation of important international economic agreements. Third, the success of Canadian-owned firms is a strong indicator that our economic environment is conducive to innovation and creativity.

At the same time, foreign-owned head offices provide similar economic benefits to their city regions in Canada and policies aimed at blocking their investment in Canada will be counter productive to our national prosperity and the creation of a competitive environment that stimulates Canadian firms.

**Our research supports the importance of an economic environment that both drives innovation and creativity by Canadian firms to propel their global expansion and makes Canada a compelling destination for investment. Our economic policies need to support the vibrant growth of our city regions and the continued development of skilled human capital. In a virtuous circle, this supports the success of head offices which in turn enhances our human capital thereby increasing the vibrancy of Canadian cities and the country as a whole.**

# I. Reviewing the literature on the economic impact of head offices

**WE CONDUCTED A THOROUGH LITERATURE** review on the impact of head offices on the local community. Much of the academic literature is focused on the opposite question – what drives the creation and sustaining of head offices in city regions? As we shall see, this research indicates that factors such as the presence of a strong financial services industry, specialized business services, and highly qualified personnel are factors that support the creation of head offices. R&D location decisions are driven largely by the potential for advantage for the deciding firm – and in many cases this is not affected by head office location. Finally, available Statistics Canada research indicates that local spillovers are greater for multi-national firms than for Canadian-owned firms. However, this research is focused on manufacturing firms and, in fact, does not relate specifically to head offices; nevertheless we can discern some relevant findings from it.

While we found no academic research on the specific question of the spillovers of head offices, there is some work of relevance.

Jane Katz, a Federal Reserve Bank of Boston economist, summarizes the spillover benefits that large corporate headquarters bring to a local economy – although she provides little specific quantification of the impacts in her research. Katz finds that people who work in headquarters tend to be highly educated and highly compensated. For example, in 2001, the average annual salary of those employed at a U.S.

headquarters establishment was nearly double the average salary across the total economy. Although the pay is relatively high at headquarters, they account for only 0.5 percent of employment at all U.S. establishments. Thus when headquarters leave a metro area, the direct job loss is also relatively small. Katz also notes that headquarters depend on face-to-face contact with their network of outside suppliers – investment and commercial bankers, lawyers, accountants, advertising and media companies, and consulting firms. The result is that headquarters and their specialized business providers tend to cluster near each other and further increase the supply of highly skilled and technical professionals in the local economy's workforce. Katz also notes that for headquarters, charitable giving today is far more likely to be business-driven. This is due to most large companies having written policies that govern both the reasons for and recipients of their giving – by and large explicitly aimed at improving relations with customers or employees. Due to this rise in strategic giving, Katz observes that the impact of headquarters on philanthropy and community involvement appears to have declined but headquarters locations still play a role. For public policy implications, Katz concludes that “while headquarters may still bring additional jobs or philanthropy, there are fewer guarantees than in the past. And the benefits that actually flow to the region will likely depend on the firm and industry involved.”<sup>1</sup>

<sup>1</sup> Jane Katz, “Get Me Headquarters!” *Regional Review* 12(4), Quarter 4, 2002.

Chicago Federal Reserve economists Thomas Klier and William Testa, document changes in the spatial distribution of corporate headquarters of large (defined as having more than 2,500 worldwide employees) U.S.-domiciled corporations during the 1990s. Klier and Testa conclude that when it comes to growing, attracting, and retaining headquarters, the most densely populated metro areas still have the advantage. In other words, large company headquarters remain far more geographically concentrated than the U.S. population at large. According to their results, the 50 largest U.S. metropolitan areas had 87 percent of headquarters in 2000 – exactly the same percentage as in 1990.<sup>2</sup>

They found a significant link between financial services and headquarters locations. Their multiple regression analysis indicated that metropolitan areas containing high concentrations of financial services and specialized business services activity saw the greatest headquarters gains over the 1990s.<sup>3</sup>

Furthermore, Klier and Testa cite the important physical and human capital advantages of large cities: critical infrastructure such as major airports, major highways and telecommunications and high concentration of professionals and highly skilled personal.<sup>4</sup>

One source of this continued concentration of headquarters in larger metropolitan areas is the growth of smaller local firms into larger firms, especially in younger industries relying heavily on specialized inputs like R&D – e.g., Silicon Valley in Northern California and Route 128 in the Boston area. In a sense, success begets success among metropolitan areas with many headquarters.

The research of Saskia Sassen, a professor at Columbia University and the London School of Economics, supports this finding of success begetting success. She concludes that global cities are virtual monopoly centres for financial, legal and accounting innovations. And since they have the most complex segments of the knowledge economy – attracting an inflow of highly educated 20-35-year olds – they stand to gain the most as global headquarters change locations. Additionally corporations are buying more services. She also notes that between 1999 to 2003 output in the United States grew at a 4.1 percent rate, whereas output for finance, insurance and real estate (FIRE) grew 7.6 percent overall, while FIRE sales to corporations grew 11.8 percent, and FIRE sales to firms in securities and linked trading grew 34.0 percent. Head offices rely on sophisticated services provided locally. As Sassen observes “Deals like the recent acquisition by NASDAQ of a share of the London Stock Exchange, or the offer by the New York Stock Exchange for Euronext, don’t get done in Birmingham.”<sup>5</sup>

Economists James Davis of the US Census Bureau and Vernon Henderson at Brown University find conclusions similar to Klier and Testa regarding the importance of financial and business services and head offices. They focus on headquarters’ births and concentrate on the contribution of headquarters and the diversity of business services provided locally in *The Agglomeration of Headquarters*. The authors use micro data on auxiliary establishments from 1977 to 1997 for U.S. firms (County Business Patterns) in a set of various complex economic equations to derive variable estimates and input these into various regression models. Their results indicate that a 10 percent increase in the number of local specialized business or financial service providers in a

county increases the expected births of headquarters in a U.S. county by 3.6 percent. Davis and Henderson conclude that the relative availability and diversity of financial and business services are significant and have positive effects on the decision of headquarters’ locations across all specifications.<sup>6</sup>

But some research indicates that important business services of functions like advertising and R&D are driven by factors other than head offices.

In their 2006 paper, *Networking on Madison Avenue*, Brown University economists Mohammad Arzaghi and Vernon Henderson look at the effect on productivity of locating advertising agencies near other advertising agencies. The researchers used U.S. census tract data over the 1990s for Manhattan to provide highly specific firm location information, in fact allowing them to distinguish sites at 250 meter increments. Their findings indicate that having a high density of similar advertising agencies is important for enhancing their own productivity. Productivity increases result from localized networking in the industry which specifically enhances creativity; agencies share information, ideas, and materials where repeated face-to-face contact is critical, whether formal or informal. They conclude that Manhattan advertising agencies trade off the higher rent costs from being nearer to enhanced opportunities for networking, against the lower rent costs of operating on the periphery away from the clusters. These results exist even though the majority of their end buyers are outside Manhattan. In a follow-up paper, Arzaghi finds that across the U.S., agencies also locate themselves in high wage and rent areas in order to sift out low quality agencies and guarantee their network quality.<sup>7</sup>

<sup>2</sup> Thomas Klier & William Testa, “Location trends of large company headquarters during the 1990s,” *Economic Perspectives*, Federal Reserve Bank of Chicago, Issue Q II, pp. 12-26, 2002.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

<sup>5</sup> Saskia Sassen, “How Population Lies: True, big cities no longer draw big numbers. But that doesn’t mean their power is slipping too,” *Newsweek International*, July 10 2006.

<sup>6</sup> J Vernon Henderson & James Davis, “The Agglomeration of Headquarters,” Working Papers 04-02, Center for Economic Studies, U.S. Census Bureau, 2004.

<sup>7</sup> Mohammad Arzaghi, 2005. “Quality Sorting and Networking: Evidence from the Advertising Agency Industry,” Working Papers 05-16, Center for Economic Studies, U.S. Census Bureau.

With respect to R&D location decisions, Susan Feinberg's paper, *The International R&D Location Choices of US Multinationals* (2000), notes that traditional theories are that multi-national corporations (MNCs) generally exhibit two patterns of behaviour that influence R&D location; agglomeration and heterogeneity. It should be noted that Feinberg did not specifically assess the importance of head office location in her research; but her findings are instructive to the questions we are examining.

Agglomeration<sup>8</sup> is the propensity of firms in the same industries to cluster their R&D activities because of network benefits (similar to the findings related to advertising agencies above). Prior decisions by other firms in the same industry to locate R&D in a specific location cause other firms in the same industry to locate its own R&D in the same place. There are benefits or cost reductions resulting from the clustering of activities.

Heterogeneity means that MNCs have different preferences for R&D locations for their own specific reasons. They may be seeking access to specific research universities, a highly qualified labour force, local factor endowments, or first class infrastructure. They also may consider government subsidies or tax breaks, trade, regulatory, education, healthcare, immigration and labour market policies when making their decisions.

Using disaggregated panel data for U.S. MNCs, Feinberg concludes that, in general, heterogeneity appears to be a more important driver of MNC R&D location choice than agglomeration. She does note two exceptions – in the electronics and chemical industries, agglomeration effects do seem to drive R&D location choice.

A subsequent paper by Feinberg and Anil Gupta (2004) indicates that multinationals recognize the specific benefits of locating R&D facilities away from their head offices and in foreign subsidiaries. Their research looks at whether MNCs' decisions to assign new R&D responsibilities to existing foreign subsidiaries are significantly influenced by the potential to capture and utilize knowledge spillovers from competitors' R&D activities in the host country. These spillover effects would lead to the MNCs' local and global capacity to utilize knowledge accumulated by their foreign subsidiaries. Feinberg and Gupta use disaggregated panel data that capture 361 U.S. MNC headquarters and their 989 affiliates over the 1989-96 period and include Canadian subsidiaries of U.S. MNCs. Their multi-regression analysis confirms that the spillover of external knowledge is an unintended by-product of assigning R&D duties to a subsidiary; rather, such spillovers appear to be anticipated and factored in by MNC executives making R&D location decisions.

Their research indicates that MNCs view the assignment of R&D responsibilities to a subsidiary as an investment in the subsidiary's capacity not only to *create* new technical knowledge through internal efforts but also to *absorb* spillovers of external knowledge from competitors' R&D activities.

We found no published research that specifically addresses the importance of Canadian owned head offices. But we can draw inferences from some relevant research that foreign-owned headquarters do not necessarily create fewer spillovers to the local economy than Canadian-owned headquarters. Foreign-owned firms in Canada are more productive than Canadian-owned firms with higher wages being one of the outcomes. Foreign-owned firms also confer positive impacts for their domestic-owned neighbours through

greater competitive intensity and technology diffusion.

It is important to note that the research points to the multi-national aspect of these firms, not that they are foreign. Canadian-owned and foreign-owned MNCs have developed capabilities and advantages that allow them to expand internationally and so they are to be expected to be superior in performance to their competitors who are domestically focused. The specific research findings are as follows:

- Economists Steven Globerman, John Ries, and Ilan Vertinsky analyzed the productivity and wage performance of foreign-owned and Canadian-owned enterprises using manufacturing data for 1986. Their results showed that worker productivity is substantially higher in foreign-owned firms, primarily because they tend to be capital intensive and large. These findings have been observed in earlier studies and have been sustained over time.
- Globerman, Reis and Vertinsky also found that foreign-owned firms tend to pay higher wages to their employees, partly due to their higher productivity. The study rejects the hypothesis that the benefits to the host country are sensitive to the foreign affiliate's home country. They conclude that, "whatever the source of this sustained disparity in productivity levels, the suggestion would be that foreign direct investment continues to provide potential long-run economic benefits to the host economy."
- More recently, Statistics Canada economists, John Baldwin and Wulong Gu conducted a firm-level manufacturing study of how foreign-controlled businesses operating in Canada stack up to their domestic competitors.<sup>9</sup> Corroborating the findings of Globerman et al., Baldwin and Gu find that foreign-owned firms

<sup>8</sup> Feinberg also uses the term "state dependence" to describe this phenomenon.

<sup>9</sup> For a complete synthesis of Statistics Canada research on MNEs in Canada see John Baldwin and Guy Gellatly. "Global Links: Multinationals in Canada: An overview of Research at Statistics Canada." Statistics Canada, catalogue no. 11-622-MIE, no. 014, 2007

are more productive. In addition, they also show that foreign plants operating in Canadian manufacturing industries confer positive spillovers on locally owned manufacturing plants. These spillovers derive from increases in competitive intensity and technology adoption. The authors conclude that the performance-enhancing benefits of these foreign-controlled plants exist because of the organizational or technological advantages of being located within multinational enterprises, not because their parent firm is located abroad. These firms make greater use of advanced technology which requires higher skilled employees which increases the benefits of advanced technology and so on in a virtuous circle. They conclude that performance differentials between foreign and domestic firms stem from a multinational advantage more so than an ownership advantage

**In summary, the academic literature on the spillovers of head offices to local communities is sparse. It is probably strongest in the area of R&D spillovers and the indication here is that globally competitive firms are choosing R&D locations to be near a company-specific base of customers, suppliers, or researchers or to be near other R&D establishments. But the head office location does not appear to be a significant factor. Research also indicates that the location of high-value business services is correlated with head offices. Statistics Canada research points to the conclusion that foreign-owned manufacturing firms provide positive spillovers to the local economy because they are global; but this is not conclusive on the issue of the differing impacts of head offices based on ownership.**

## II. Determining head office locations' impact on R&D location decisions

### **MANY ECONOMISTS POINT TO THE**

importance of R&D through its impact on innovation and productivity. In one econometric study, the OECD concluded that Business Expenditure on Research and Development (BERD) as a percentage of a country's GDP is an extremely important determinant of its growth in prosperity. It estimates that a one percentage point increase in BERD as a percentage of GDP increases real output per capita by a remarkable 12 percent.<sup>10</sup> Economist Richard Harris cautions that this estimate may be misleading because many of the positive effects of R&D are not limited to the region or country where it is conducted. He cites a study by economist Wolfgang Keller which indicates that on average a dollar of R&D spent in the US is 78 percent as valuable to Canada's economy as a dollar spent in Canada.<sup>11</sup> But, even if international spillovers of R&D make the impact of local R&D less critical to prosperity, Harris acknowledges that domestic R&D capabilities may be important to realize effective cross-border benefits here in Canada.

While the true impact of local R&D may still be in question, one of the reasons often cited for the importance of head offices is that strategic decisions such as where to conduct R&D will be skewed towards the local economy. Our work indicates that this may have been true in earlier years. However, leading R&D spenders globally are tending not to locate their recent or next R&D facility near their global headquarters. Instead they are selecting locations closer to their markets or to specific research strengths.

**Head office location may have been an important determinant of research facilities in the past, but it is less so now.** We determined the current location of the research facilities of the 25 largest R&D performers in the world. Unsurprisingly, most of these firms conducted R&D in the same city as their head office. In fact, each one of the 25 firms has an R&D facility in its home town. Several of these specify that their global R&D headquarters is in the same city as their head office. At the same time, however, not one of these companies does all of its R&D in its home town – or even its home country. None of Canada's five largest R&D performers has its R&D solely in its head-office city; however two of the five, BCE and Research in Motion, do not conduct R&D outside of Canada (*Exhibit 1*).

Of more relevance to the head office debate are the decisions on the latest or next R&D facility, rather than legacy decisions. Only four of the 25 located, or are in the process of locating, their latest R&D facility in their head-office city – Samsung in Seoul, BMW in Munich, GSK in London and Roche in Basel. The vast share of global R&D leaders choose emerging markets or research locations like China and India or established locations like the U.S. or Europe. This pattern is similar for Canadian R&D heavyweights.

This is consistent with the previously cited research conducted by Susan Feinberg – R&D investment decisions are based on criteria related to the capabilities and resources of relevance to the research function.

<sup>10</sup>OECD, *The Sources of Economic Growth in OECD Countries*. Paris, 2003.

<sup>11</sup>Wolfgang Keller, *The Geography and Channels of Diffusion at the World's Technology Frontier*. NBER, Working Paper No. 8150, 2001.

Cited in Richard Harris, "Canada's R&D Deficit — And How To Fix It", *CD Howe Commentary*, No. 211, May 2005.

**Exhibit 1 Most leading R&D companies are building their next R&D facilities in locations away from their head office**

Company	Corporate Headquarters	Newest R&D Location	Current R&D Operations
<b>Global R&amp;D leaders</b>			
Pfizer	New York	San Francisco & Shanghai	New London, CT (R&D HQ) 20 other centres, 5 in USA plus Toronto, Sandwich (UK), Amboise (Fr) & Nagoya (Jp) 3 USA Facilities being closed
Ford	Dearborn, MI	Germany & Oakville	Dearborn, MI (majority of work) 6 other facilities in Europe
Johnson & Johnson	New Brunswick, NJ	La Jolla, CA	Major R&D facilities in USA and 12 other countries in all continents but Africa
Microsoft	Redmond, WA	India	Redmond (primary location); three other in USA, three in UK, China, and India
Daimler Chrysler	Stuttgart	China, Japan	4 major R&D centres in Germany; 4 in the USA, 1 in India and Japan
Toyota	Toyota City	Germany, Thailand	Seven of 12 R&D centres outside Japan (2 USA; 2 Europe; 1 Australia; 1 Japan)
GlaxoSmithKline	London	London	7 of 17 major R&D facilities in the UK; USA (4), Japan (2), Croatia, France, Italy, and Spain
Siemens	Munich	China, India, & Russia	Siemens operates 150 development centres in 30 countries; 25 are in Germany
General Motors	Detroit	Germany, Sweden, & Oshawa	GM has 11 design centres. Including centres in the USA, Canada, Brazil, Mexico, China, Korea, and Australia
Samsung Electronics	Seoul	Seoul	6 R&D centres in Korea; 16 others in 8 countries, including USA, UK and Russia
IBM	Armonk, NY	Eastern Europe & India	61 R&D labs in 15 countries, including 10 research centres. USA (4), India (2), China, Japan, Switzerland, and Israel
Intel	Santa Clara, CA	Shanghai & Vietnam	Operates more than 100 R&D offices Majority of R&D conducted at 5 labs in the USA
Sanofi-Aventis	Paris	Goa, India & Tucson	More than 25 R&D Centres on 3 continents; 13 in France
Volkswagon	Wolfsburg,	Shanghai	Group R&D HQ in Wolfsburg Global presence with major R&D bases in China, Japan and USA
Roche	Basel	Basel & Shanghai	15 R&D centres around the world; USA (6), Switzerland (3), Germany (3), 1 in Austria, China and Japan
Novartis	Basel	Shanghai & Cambridge, MA	R&D HQ is in Cambridge, MA Operates 3 major R&D centres in the USA; 1 in Austria, Switzerland, UK, Japan and Singapore

**Exhibit 1 Most leading R&D companies are building their next R&D facilities in locations away from their head office**

Nokia	Espoo, Finland	Palo Alto, San Diego & Cambridge, MA	R&D locations include Finland, Sweden, Germany, Hungary, Japan, China & USA
Merck	Whitehouse Station, NJ	Ireland	Principal R&D sites in Rahway, NJ and West Point, PA Sites in Japan (4), USA (4), England, France, Spain, Italy & Canada
Robert Bosch	Stuttgart	China, India, & Eastern Europe	Has 10 research centres 5 in Germany, USA(2), Switzerland, Japan & China
Sony	Tokyo	Chennai, India	R&D centres comprise sites in China, Japan, Sweden, the Netherlands, UK & USA
Honda Motor Co.	Tokyo	Guangzhou, China & Tochigi, Japan	Major R&D facilities in Japan, Germany and USA
BMW	Munich	Munich	R&D Network consists of 10 locations in 5 countries; Germany, Austria, China and USA
Motorola	Schaumburg, IL	China & India	Labs in France, Germany and USA Software locations in Israel, Italy, Poland and Russia 20 development centres across Europe
Matsushita Electric	Osaka	China & Vietnam	Their 589 consolidated companies have R&D centres that include 10 sites in the USA Other centres in Japan, Canada, Malaysia, Germany and China
Cisco Systems	San Jose	Ireland, China & India	R&D HQ is in San Jose Global presence includes Canada, China, Japan, Netherlands & USA
<b>Canadian R&amp;D leaders</b>			
Nortel Networks	Toronto	Bangalore & Beijing	R&D HQ is in Ottawa Major R&D locations are USA (4), Canada (3), Ireland, France, UK and China
BCE Inc.	Montréal	Montréal	R&D HQ is in Montréal 98% of R&D conducted in Canada
Magna International	Aurora	Changzhou	R&D HQ is in Aurora 62 engineering and R&D centres in 23 countries on five continents; 8 engineering and R&D centres in Canada
Bombardier	Montréal	Sherbrooke, QC & Ireland	Global R&D network includes sites in Canada, India, Sweden, Switzerland, Brazil and China
Research in Motion	Waterloo	Mississauga	R&D HQ is in Waterloo Other locations include Ottawa & Mississauga

Survey research conducted by others confirms our findings. Economists, Jerry Thursby of Emory University and Marie Thursby of the Georgia Institute of Technology and NBER, conducted a survey of 235 large global R&D performers. Among the 105 US firms surveyed, 34, or less than a third, were locating, or had located, their latest R&D facility in the United States with more than two thirds locating outside the country. Among the 119 Western European-based R&D leaders, 51 or 43 percent are locating their next facility in their home country; and 68, or 57 percent are going to other countries. Among the 11 surveyed R&D spenders outside of the United States and Western Europe, seven are staying in their home country and four are investing abroad. The survey was focused on country of location, not city. So, while 34 US firms are locating their next facility in the US (a similar finding to our research among the US-based global R&D leaders), it is quite possible that only a few are locating that facility in their home town.

To be sure, home countries attract a large share of current R&D funding – largely as a legacy result. In the same survey, Thursby and Thursby found that half of the respondents performed 75 percent or more of their R&D in their home country. We found similar results among R&D performers in Canada. Foreign subsidiaries spend, on average, 1.6 percent of their global R&D budgets in Canada while Canada accounts for 2.5 percent of global sales.

Policy makers are concerned that Canadian firms are not investing adequately in R&D. But the problem is not a “hollowed out economy”. Canadian-owned firms performing R&D are significantly smaller than Canadian operations of foreign-owned firms in Canada who perform R&D. Among firms conducting any R&D, the average Canadian firm has revenues of \$27 million; the average foreign-owned firm in Canada has revenue of \$547 million in Canada. Company size matters when it comes to R&D budgets. The much smaller average Canadian R&D performer invests \$700 thousand annually on R&D; foreign-owned firms spend an average of \$8.8 million. This holds true across all industries (*Exhibit 2*).

**In summary, head office locations have been important in the past in determining R&D locations for globally significant firms. But current location decisions are being driven by the logic of R&D – where are the customers and R&D performers? Policies to improve Canada’s R&D capabilities and performance should be aimed at ensuring that Canada is a desirable location for performing R&D.**

Exhibit 2 **Canadian R&D performing firms are much smaller than foreign-owned R&D performers in Canada**

Industry	R&D by industry and by country of control, 2003								
	Average Revenue (\$mm)			R&D % of Revenue			R&D \$ per company (\$mm)		
	Canada	Foreign	Total	Canada	Foreign	Total	Canada	Foreign	Total
<b>Total</b>	\$27.0	\$547.1	\$45.2	2.5%	1.6%	2.1%	\$0.7	\$8.8	\$1.0
<b>Manufacturing</b>	\$32.1	\$636.6	\$63.6	2.6%	1.4%	1.9%	\$0.8	\$8.9	\$1.3
<b>Pharmaceutical and medicine</b>	\$30.8	\$322.2	\$100.3	12.7%	9.5%	10.3%	\$3.9	\$30.6	\$10.3
<b>Communications equipment</b>	\$28.3	\$233.6	\$49.7	40.4%	6.3%	24.3%	\$11.5	\$14.7	\$11.8
<b>Services</b>	\$19.6	\$218.6	\$23.9	2.9%	4.1%	3.2%	\$0.6	\$9.0	\$0.8
<b>Information and cultural industries</b>	\$41.5	x	x	4.4%	x	x	\$1.8	\$13.1	\$2.2
<b>Computer system design and related services</b>	\$1.1	\$28.2	\$1.5	41.6%	24.4%	15.9%	\$0.5	\$6.9	\$0.6
<b>Scientific research and development</b>	\$2.9	\$22.9	\$3.6	36.7%	42.0%	38.1%	\$1.1	\$9.6	\$1.4
<b>Agriculture, forestry, fishing and hunting</b>	\$8.5	\$59.3	\$9.0	1.7%	8.7%	2.3%	\$0.1	\$5.2	\$0.2
<b>Mining and oil and gas extraction</b>	\$283.0	\$1,225.1	\$407.4	0.7%	0.5%	0.5%	\$2.0	\$6.1	\$2.5

x – Data suppressed by Statistics Canada to preserve confidentiality.

Source: Statistics Canada. Industrial Research and Development: Intentions 2006. Catalogue no. 88-202-XIF.

## III. Assessing head offices and their community involvement

**HEAD OFFICES OF LARGE COMPANIES, IT IS** widely assumed, are important contributors to their local communities, especially charities. We set out to examine the impact of head offices on charitable donations and community involvement and whether or not the Canadian ownership of the head office was a critical determinant in its community involvement. We assessed the community involvement of head offices in four ways:

- Determining the involvement of business executives in leading charities in the four Canadian cities that account for most of our head offices and exploring differences between global head offices and subsidiary head offices
- Comparing average donations by firms with local head offices and other firms to United Ways/Centraides in the same four cities
- Interviewing senior managers at large companies in Canada to understand the strategy behind community involvement and the importance of the head office to the city's allocations
- Determining if there is a statistically significant relationship between head offices and donations to local United Ways/Centraides.

In summary, we find that head offices of large Canadian companies are important, but not emphatically so, to local charities. Their executives serve as volunteers and they are large contributors to local United Ways/Centraides. In addition, employees at head offices contribute their time and money, typically through payroll deductions. On

average, head offices of foreign subsidiaries contribute less than head offices of Canadian-owned companies. But, when we exclude Canada's five largest banks, all of whom are headquartered in Toronto, from the analysis, Canadian- and foreign-owned differences disappear. In any event, we can expect the impact of head office location on local corporate contributions to decline over time. Increasingly, large firms in Canada, domestic- or foreign-owned, are becoming more strategic in their donations and community involvement. Locations of operations, employees, and customers are becoming more important than the location of the head office. This distinction is somewhat academic, however, since large city regions are where employees, customers, operations, and head offices agglomerate.

### **Head office executives and local community involvement**

We analyzed the involvement of executives at leading charities in Canada's four key headquarters cities – Montreal, Toronto, Calgary, and Vancouver.<sup>12</sup> Based on Canada Revenue Agency information, we identified large charities in each of the four cities. For each of the 19 charities, we identified members of their board and annual campaigns. In all, we identified 450 people – about 24 per board. We then determined how many of these individuals were based in the private sector and how many in the public or not-for-profit sector. For members in each sector we determined the location of their head office – locally or some other city.

<sup>12</sup>These four cities account for 73 percent of head offices in Canada – Desmond Backstead and W. Mark Brown, "Head Office Employment in Canada, 1999 to 2005," Statistics Canada, catalogue no. 11624MIE – no. 014, July 2006.

Exhibit 3 Donations and Payroll Deductions of Head Offices to United Way/Centraide, 2006

	Corporate Donations (\$50,000+)				Employee Donations (\$50,000+)			
	Head office ownership				Head office ownership			
	Local	Other Canadian*	Foreign	Total	Local	Other Canadian*	Foreign	Total
<b>Montreal</b>								
Total (\$000)	\$4,775	\$2,525	\$2,700	\$10,000	\$7,625	\$2,550	\$4,975	\$15,150
Number of firms	19	10	21	50	32	22	41	95
Average per firm (\$000)	\$251	\$252	\$129	\$200	\$238	\$116	\$121	\$159
Average per \$ mm of revenue	\$32	\$12	\$19	\$20	\$34	\$6	\$32	\$21
<b>Toronto, including Banks</b>								
Total (\$000)	\$11,275	\$1,850	\$4,000	\$17,125	\$31,650	\$2,400	\$11,525	\$45,575
Number of firms	34	8	36	78	71	10	53	134
Average per firm (\$000)	\$332	\$231	\$111	\$220	\$446	\$240	\$217	\$340
Average per \$ mm of revenue	\$21	\$19	\$22	\$20	\$41	\$22	\$67	\$47
<b>Toronto, excluding Banks**</b>								
Total (\$000)	\$3,775	\$1,850	\$4,000	\$9,625	\$12,150	\$2,400	\$11,525	\$26,075
Number of firms	29	8	36	73	66	10	53	129
Average per firm (\$000)	\$130	\$231	\$111	\$132	\$184	\$240	\$217	\$202
Average per \$ mm of revenue	\$14	\$19	\$22	\$17	\$25	\$22	\$67	\$35
<b>Calgary</b>								
Total (\$000)					\$19,350	\$3,250	\$8,700	\$31,300
Number of firms					74	21	34	129
Average per firm (\$000)					\$261	\$155	\$256	\$243
Average per \$ mm of revenue					\$72	\$11	\$62	\$44
<b>Vancouver</b>								
Total	\$1,400	\$1,325	\$750	\$3,475	\$2,825	\$2,925	\$3,625	\$9,375
Number of firms	12	10	8	30	23	14	17	54
Average per firm (\$000)	\$117	\$133	\$94	\$116	\$123	\$209	\$213	\$174
Average per \$ mm of revenue	\$41	\$7	\$23	\$13	\$47	\$14	\$99	\$26
<b>3-city, 4-city average including Banks</b>								
Total (\$000)	\$17,450	\$5,700	\$7,450	\$30,600	\$61,450	\$11,125	\$28,825	\$101,400
Number of firms	65	28	65	158	200	67	145	412
Average per firm (\$000)	\$268	\$204	\$115	\$194	\$307	\$166	\$199	\$246
Average per \$ mm of revenue	\$26	\$12	\$20	\$19	\$50	\$11	\$57	\$37
<b>3-city, 4-city average excluding Banks**</b>								
Total (\$000)	\$9,950	\$2,900	\$7,450	\$20,300	\$41,950	\$6,725	\$28,825	\$77,500
Number of firms	60	18	65	143	195	52	145	392
Average per firm (\$000)	\$166	\$161	\$115	\$142	\$215	\$129	\$199	\$198
Average per \$ mm of revenue	\$22	\$11	\$20	\$19	\$42	\$13	\$57	\$38

Notes: Includes all private sector firms with contributions over \$50,000. Corporate donations for Calgary not available. 3-city average refers to corporate donations, and 4-city average refers to employee donations.

\* Canadian-owned firm, but with headquarters in another Canadian city, eg. Enbridge (Calgary head office) donation in Toronto.

\*\*Toronto excluding Banks\* and "3-city, 4-city average excluding Banks\*" exclude the five largest Canadian banks - BMO Financial Group, CIBC, RBC Financial Group, TD Canada Trust, and Scotiabank.

Source: Institute for Competitiveness & Prosperity based on data from web sites of United Way of Montreal, United Way of Greater Toronto, United Way of Calgary & Area, United Way of Lower Mainland.

Among the 292 private sector members, 161, or 55 percent, came from companies whose head office was in the same city. Seventy-two, or 25 percent, were from companies whose head office was in another country; the remaining 59, or 20 percent, were from companies whose head office was in another Canadian city. From one perspective therefore, only 55 percent of these individuals were from local headquarters where the ownership was Canadian while 45 percent were at head offices where the global headquarters was elsewhere. This ratio ranges from 45 versus 55 percent in Vancouver to 62 versus 38 percent in Montreal.

Sorting the results a different way shows that 75 percent of people involved with our sample of local charities are from Canadian-owned companies while 25 percent are from foreign-owned companies. According to Statistics Canada, 78 percent of head office establishments are Canadian-owned and 66 percent of head office employees are in Canadian-owned firms. The nationality of ownership of a head office does not appear to matter in the propensity for its executives to volunteer on the boards of local large charities.

### **Head office corporate and employee donations to United Ways and Centraides**

Local United Ways and Centraides depend heavily on corporate contributions. We gathered corporate donations data from the Web sites of the four United Ways/Centraides in the same cities. Except for Calgary, each publishes a corporate honour roll of donors giving more than \$50,000 in the latest year. Drawing on this information we see that companies whose global head office is in the same city are important donors to local United Ways.

Across the three cities the average large corporate donor contributed \$194,000

to its local United Way<sup>13</sup> in 2007 (*Exhibit 3*). Comparisons of averages are complicated by the fact that the United Way of Greater Toronto reports only that each of the five banks in Toronto gave more than \$1 million. For our estimates we counted each as having donated \$1.5 million, based on information from one bank's website. Toronto had the largest average – at \$220,000 per large corporate donor; Montreal's average was \$200,000, and Vancouver's was \$116,000. Across the three cities, the average Canadian company donated \$249,000<sup>14</sup> while the average foreign-owned company donated less than half of that amount – \$115,000. Canada's five largest banks contribute to local United Ways/Centraides at a significantly higher rate than other companies and when they are excluded the Canadian average falls to \$166,000. Even after excluding the banks, large Canadian-owned firms contribute more per firm than do foreign-owned firms. Besides the impact of Canadian banks, a reason for the fact that foreign-owned firms on United Way honour rolls contribute less per firm is that they are on average smaller than Canadian-owned firms. On a contribution per million dollars of revenue basis, foreign-owned firms are actually slightly higher than Canadian-owned firms.

It is not simply the scale of Canada's banks that matters to their corporate donations; it is their propensity to donate. According to Statistics Canada, firms in the finance and insurance sector accounted for 24.0 percent of pre-tax profits in Canada in 2003 and for 32.1 percent of charitable donations.<sup>15</sup> The next largest source of pre-tax profits, manufacturing, accounted for 19.1 percent of pre-tax profits and 19.4 percent of donations. Mining, oil and gas extraction, the third largest in profits, accounted for 13.9 percent of pre-tax profits and 4.4 percent of donations. In the United States this relationship is reversed. Finance and

insurance accounted for 19.4 percent of pre-tax profits in 2002 and 10.6 percent of donations; manufacturing accounted for 32.4 percent of profits and 47.0 percent of donations. Clearly, any analysis of head offices and local charitable donations has to differentiate between Toronto's banks and other head offices.

Employees at Canadian banks are significantly higher donors through their payroll contributions. Payroll deductions to the local United Way/Centraide averaged \$446,000 per Canadian-owned head office in Toronto when the five banks are included – compared to \$217,000 from foreign-owned head offices in Toronto. But when the banks are excluded, the Canadian company average in Toronto falls to \$184,000 – within the range of findings from the other three cities – and less than foreign-owned head offices in Toronto. Across the four cities, Canada's banks drive Canadian-owned companies' payroll deductions above the performance of foreign-owned firms. Excluding the five banks there is virtually no difference.

### **Community involvement strategies of Canada's largest firms**

To gain a deeper understanding of the impact of head offices on local community involvement and charitable giving, we interviewed senior managers and executives in the function (in two cases we spoke with the CEO) at 18 of Canada's largest corporations. Twelve of these were Canadian-owned and six were foreign-owned. We asked the interviewees to describe their community involvement strategy and processes for determining how much is spent where. For Canadian-owned companies, we asked how their subsidiaries developed and implemented their strategies; for foreign-owned firms, we asked about the relationship with their global head office.

<sup>13</sup>Companies with multiple locations donated to more than one United Way; we treat each donation as a stand alone for our analysis

<sup>14</sup>The weighted average of donations by Canadian firms in their headquarters cities (\$268,000) and by Canadian firms in cities that are not their headquarters (\$204,000) as seen in Exhibit 3.

<sup>15</sup>M. Easwaramoorthy, Cathy Barr, Glenn Gumulka, and Lisa Hartford, "Business Support for Charities and Nonprofits," *Research Bulletin: Vol.13(2)*. Toronto: Imagine Canada, 2006, p.2

In summary, the location of head offices does matter for the amount of contributions and sponsorships that are made in the local community. But the critical driver is the size of the head office – as defined by employee count. The perspectives of the CEO and executive team do matter – but less so than head count and it appears that this factor is becoming less important. Foreign-owned firms have less independence than their Canadian-owned counterparts – but their strategies appear to be driven by the characteristics of the Canadian setting. However, the key relevant trend is that more and more firms are aligning their community involvement with their business needs and with the localities where they operate.

**Community involvement aligning with business needs.** Nearly all interviewees indicated that their company's community involvement strategy is driven by business needs. For several, this is a recent change in their approach with complete overhauls of their strategy and practices being implemented in the last few years. As one executive put it, "We identified the top challenges across our business units and three themes emerged – the need for community consent for us to operate, the impact of education and skills shortages on our business, and the importance of environmental considerations, especially with respect to water." In another firm, their strategy was driven by customer research – "our customers are families and so it's no surprise that they value charities related to children's needs". Another respondent indicated, "opera and other arts, not local hockey teams, fit our desired brand image".

In a sense, charitable giving and community involvement have caught up with the need to streamline or re-engineer business functions. Many interviewees agreed with this sentiment: "We're no longer doing charity like it used to be done - we're investing in partnerships that provide leverage for our businesses".

A key implication of this trend is that CEOs and other senior executives are less likely to intervene in community involvement decisions, once the strategy is set. As one interviewee put it, "Our CEO may get hit up to contribute to a local capital campaign. But, if it's off strategy he will say 'no.' Remember our community involvement strategy was approved by the board and he really can't wander too far from that." Several indicated that this was a welcome development for senior executives – "They now have a principled and well-reasoned rationale when they say 'no'".

**Location of operations matters a lot.** As community involvement and charitable giving have become more aligned with business interests, the location of company operations has increased in importance. Most interviewees indicated that the geographic dispersion of their contributions and community investments track their operations' locations. The location of significant operations, like exploration and processing facilities or regional offices, implies an interest in the local community and its many employees. As one manager put it, "In the communities we operate, we're a significant part of the local economy and people there look to us for leadership in community involvement". Several interviewees indicated that employee location was a driving force – in one firm there was a conscious strategy to equalize donations per employee across the country.

Geographic dispersion of corporate community involvement dollars is undergoing change and is much more strategic. As one interviewee described it, "We used to spend everywhere across Canada. Now, because we don't have operations in PEI or Saskatchewan, we simply don't spend there."

Clearly, head offices for most companies employ a significant number of people. It is difficult to differentiate the relative importance of a head office as a central decision making unit versus being the

location for many employees. Toronto's banks are extreme examples of this. Not only is Toronto home to the head offices for Canada's largest banks, it is also home to a disproportionate share of their employees. In contrast, Calgary's oil companies have significant operations at production facilities like the oil sands and refineries across Canada. For retailers, their head offices have proportionately few employees relative to their stores across the country. Business requirements mean that much of the giving is store-based and implemented by store managers who are in the community. Any quantitative analysis of the impact of head offices would need to factor in the impact of how operations are disbursed.

**Employee involvement.** Employees are key determinants of the charities and community involvement strategies of large companies in Canada. Most of the interviewees indicated employees were involved in their strategies. In some cases, employee surveys were used to determine which areas the company would place its focus. In others, there are formalized programs to support employees in their chosen charities. For example, some companies will contribute \$250 to \$500 to a charity in which the employee has volunteered 40 or 50 hours of their time. Others allow employees paid time off to work in local community organizations. Many have dollar-matching programs, with limits. In addition, in selecting their priority community involvement areas, some firms favour the ones where there is an opportunity for employee involvement. This transcends nationality of company ownership. Foreign-owned firms appear to be as focused on employee involvement as Canadian firms.

**Executive involvement.** Nearly all interviewees indicated that their managers and senior executives were involved in their local community. In most, there was not a formal requirement. Instead, the corporate culture encouraged and supported such initiatives – "it's just part of our corporate

DNA". In some cases an executive's business success is determined by community involvement –so it's not surprising that they are involved. Only in a few of the interviews, was community involvement part of the formal evaluation. One interviewee indicated that senior executives are typically "assigned" to the boards of organizations that the company is supporting. Another company is working at developing a classification of how involvement with specific types of charities will develop necessary business skills – e.g., serving on a board increases financial accountability acumen or helping in fundraising improves marketing skills.

**Do foreign companies differ?** For these large corporations, there is a global approach to community involvement and charitable giving. That is to say, global parents will insist that their Canadian subsidiaries develop a strategy for community involvement and that this strategy should be driven by local needs. As one interviewee put it, "our parent tells us our social performance in Canada is important to how we are evaluated". Another said, "our parent tells us we have to find out what's important to Canadian customers in developing our strategy." As one interviewee put it, "here in Canada, Aboriginal needs figure more prominently in our donations. That's less of an issue for our US parent and what they spend there." Only one indicated that the Canadian strategy itself was largely directed by global headquarters.

To be sure, spending by Canadian subsidiaries is reviewed by global parents, but typically as part of the regular budget process – "we set our community involvement budget here, but the numbers go up the line to global headquarters for approval like any other expenditure."

**But in the end, head offices do matter.** Yet, despite the ongoing "professionalization" of community involvement and charitable giving, the

location of decision making authority will skew the geographic dispersion of spending. As one CEO expressed it, "I'm part of the local network and I'll say yes to local requests because I make similar requests myself." Another said, "my gut feel is that we spend more in our head-office city – but I really can't quantify what that would be worth."

Still, it is difficult to disentangle other key factors. Head offices typically have a disproportionate number of employees, which we have seen is an important driver of strategies. Similarly, head offices are in cities where many charities are located, especially Toronto. And it appears that industry matters. Toronto's financial services also employ a high percentage of people in the region and are highly profitable. Other industries are more decentralized and are less economically robust.

### Regression analysis

Finally, we assessed the impact of the number of head offices on the success of the local United Way/Centraide campaign in each of Canada's 27 city regions or CMAs. While each community is different, local United Ways/Centraides are similar in that they mount local fundraising campaigns among the general population and for corporate and employee donations. The funds are typically used to support local social services. The local units are affiliated and share best practices thus achieving some level of homogeneity across city regions.

We measured the relationship between the number of head offices in each of Canada's CMAs and the dollar value of United Way contributions in 2004. We tested the relationship between the number of head offices from the 107 largest Canadian companies on the *Financial Post's* FP500 list for 2004 and donations to the local United Way/Centraide. Once the city size is controlled for, we found no statistical relationship. In its report on head offices,<sup>16</sup> Statistics

Canada does not report results publicly for the number of head offices across all of Canada's CMAs. However, they did carry out regressions on our behalf to measure the statistical relationship between United Way/Centraide charitable donations in a CMA and both the number of head office units and the employment in these units. They found no statistical relationship. The conclusion is directional, and not definitive. But it appears that the presence of head offices in a city region does not drive total charitable donations higher after controlling for employment level in the city region. However, the analysis we discussed earlier indicates that head offices are important to corporate and employee donations.

**Head offices of large companies play an important role in their local communities. The corporations and their employees are important contributors to local United Ways/Centraides. The average head office of a large Canadian-owned corporation is a more significant corporate and employee donor than a head office of a foreign-owned firm. But, excluding the five major Canadian banks from our analysis significantly reduces the gap in corporate donations to United Ways/Centraides between Canadian-owned and foreign-owned firms. Toronto's large banks stand out from other head offices by virtue of their size and their propensity for charitable donations. And controlling for firm size, defined by revenues in Canada, donation gaps disappear. We expect, however, that the location of head offices will matter less in the future as corporations are trending more towards strategic giving that is consistent with their business needs and ties closely to the location of their customers, employees, and operations. To be sure, head office cities will still garner a large share of donations – but for broader reasons than the fact that head offices are located there.**

<sup>16</sup>Beckstead and Brown, "Head Office Employment in Canada, 1999 to 2005," p 17.

## IV. Measuring the correlation between head offices and high-value clusters and creative occupations

**MANY OBSERVERS ASSERT THAT HEAD** offices create important spillovers to the local economy as they engage outside high-value services. Those typically mentioned include financial, legal, marketing and advertising, and accounting services. In their paper for the Chicago Federal Reserve, Klier and Testa summarize the rationale for the close connection between high-value business services and headquarters. Headquarters must control far-flung operations, have ready communications access to subsidiaries, and acquire the information they need to help the company stay abreast of global trends and develop innovative strategies.<sup>17</sup> Headquarters have always relied on outside providers of these sophisticated services to some extent.

But can we measure the impact of the presence of head offices on local employment and salaries of these business services and creative occupations? Does the impact vary between Canadian- and foreign-owned head offices? And do results vary between Canada and the United States.

We conducted two sets of analysis in this area. First, we identified correlations between the number of head offices in a city region and the size of employment in Richard Florida's creative class and the employment size and wage level in high-value business services clusters. Second, we drew on Statistics Canada's survey of head offices to identify differences between Canadian-owned and foreign-owned head offices in compensation and purchases of business services.

In the first set of analysis, we find that there is indeed a correlation between the number of head offices and the vibrancy of some high-value business services. In Canada, correlations exist for information technology, financial services, business services, and advertising services. However, we do not find a correlation between the creative class and head offices. It is important to note that these results do not show causation but, in general, we can see that in a city with many head offices high-value business services and a more educated and creative labour force are likely to exist. In most of the relationships we did find, there was no statistically significant difference for Canadian- and foreign-owned head offices. Where there was a difference, they tended to indicate a stronger impact by Canadian-owned head offices.

In the second set of analysis we found that foreign-owned firms pay higher compensation at their Canadian head offices than do Canadian firms. It should be noted that these results, while they are based on a survey covering most industries in the private sector, exclude banking. The survey results also indicate that foreign-owned head offices in Canada spend much more than Canadian-owned head offices on advertising and promotion while Canadian firms spend slightly more on outside business services.

<sup>17</sup> Klier & Testa, p. 12.

### Head offices and high-value occupations and business services

We find some correlation in both Canada and the US between the number of head offices in a city region and the presence of high-value occupations and business services. But we do not find major difference in this relationship when we examine Canadian-owned head offices separately from foreign-owned head offices.

**Defining head offices.** In order to understand the impact of head offices we draw on government statistics in the category known as NAICS 55 – the Management of Companies and Enterprises. NAICS is the North American Industrial Classification System. It is a system for classifying each business establishment by the industry in which it operates. Establishments defined as NAICS 55 are non-governmental offices that “administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise.”<sup>18</sup> This is a broad definition of head offices – encompassing subsidiary offices which carry out many head office functions. We identified the head office’s Metropolitan Statistical Area (MSA) for each of the US firms and its Census Metropolitan Area (CMA) for the Canadian firms. The source of the US data is the County Business Patterns for 2005, the latest year available. It identifies the number of NAICS 55 establishments and the employees at those establishments for each MSA. Statistics Canada is the source of similar data for Canada.<sup>19</sup> However, data sorted by CMA is not publicly available because numbers get relatively small after the five or ten largest CMAs. Statistics Canada did help us to draw on this information for our analysis.

**Different types of spillovers.** In order to assess the impact of head offices we look at spillovers in areas like high-value business services, financial services and the creative class. We start by looking at key business services. We conduct this analysis by using cluster data from the Institute for Strategy and Competitiveness which is headed by Harvard professor, Michael Porter. Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region. Clusters of firms in the same industry arise because they increase the productivity and innovativeness with which companies can compete. The development and upgrading of clusters is an important agenda for governments, companies, and other institutions.<sup>20</sup>

Porter classifies all industries into three groups: traded, local and natural endowment dependent clusters. The location of natural endowment industries is based on the location of resources, such as forests or mineral reserves. All other industries are either “traded” or “local” based on the degree of industry dispersion across geographic areas. Local industries sell most of their output locally and are thus present in most, if not all, geographic areas and are evenly distributed across cities and regions on the basis of population. Traded industries are those that are concentrated or clustered in specific geographic areas and sell their output to other regions and nations. Most local industries are services, such as local health care, retailing, and most construction activity. Local goods manufacturers include bottling facilities, newspapers, and concrete products. Examples of traded industries are automobile parts and assembly, steel-making, and biopharmaceuticals. Porter’s research has identified 41 different clusters of traded industries in the United States.

Most of the research on the importance of head offices point to their positive impact on business services and financial services. Thus the traded clusters, as identified by Porter, which are of interest in our study are:

- “traded business services” and its sub-clusters management consulting, marketing related services (consisting of public relations services, commercial art and graphic design, and direct mail advertising services) and engineering services,
- “traded financial services”
- “traded information technology”.

We also look at two local sub-clusters within what Porter identifies as “local commercial services”:

- “local professional services” consisting of accounting, auditing, and bookkeeping, legal services, business services (not elsewhere classified), personnel services, and secretarial and court reporting
- “advertising” consisting of advertising agencies, outdoor advertising services and advertising, (not elsewhere classified). Note that this is a different sub-cluster than marketing related services sub-cluster of business services described above.<sup>21</sup>

Porter has drawn on government statistics to measure employment and average wages in each cluster, across each of the MSAs in the United States. The Institute for Competitiveness & Prosperity under license from Harvard has created the same information base for Canada’s clusters, defined the same way as Porter has done in the United States.

<sup>18</sup>U.S. Census Bureau, 2002 NAICS Definitions, 55 Management of Companies and Enterprises. Available online: <http://www.census.gov/epcd/naics02/def/NDEF55.HTM>. Statistics Canada’s definition is virtually the same.

<sup>19</sup>Its report, “Head Office Employment in Canada, 1999 to 2005”, which reviews trends in foreign-owned and Canadian-owned head offices, is based largely on this information.

<sup>20</sup>For more information on clusters see Institute for Competitiveness & Prosperity’s Working Paper 5, *Strengthening structures: Upgrading specialized support and competitive pressure*, pp. 17-29, July 2004 and Michael Porter’s website: <http://www.isc.hbs.edu/econ-clusters.htm>

<sup>21</sup>Perhaps counter intuitively, Porter’s research indicates that advertising services tend to locate fairly evenly across regions in the US. So while most are aware of the concentration of global leading agencies on New York’s Madison Avenue, Porter’s research indicates that employment in this industry is spread fairly evenly across the country (based on each city’s or region’s employment base).

Taking this information and analyzing it against the location of head offices, we are able to determine if there is a relationship between the number of head offices or the employment in head offices in a city region and the quantity (employment size) or quality (relative wage levels) of high-value business services.

So far, we have discussed spillovers to industries. It is also possible to examine spillovers to occupations. For this, we draw on Richard Florida's research into the "creative class". Using National Occupation Classification for Canada and Standard Occupational Classification for United States,<sup>22</sup> he divides workers into four main classes. These are the creative class, the service class, the working class and farming/fishing/forestry. The creative class includes workers in occupations such as natural and applied sciences, art, culture, recreation and sport, professional occupations in business and finance, health, nurse supervisors, senior management occupations, teachers, professors and wholesale, technical, insurance, real estate sales specialists. Florida's research indicates that cities and regions that are successful in attracting and retaining the creative class prosper and so we focus our analysis on this class.<sup>23</sup>

We analyze how head offices relate to both the quantity, as measured by employment<sup>24</sup> and quality, measured by wages, of Porter's industry clusters and Florida's creative class occupations.

Before turning to the results, two caveats are in order.

First, it is important to note that these regressions do not necessarily show causation but simply show the correlation between the variables. This is a standard

caution for regression analysis. But, in this case, it is a really important one. As we have shown there is academic research which shows the importance of high quality financial services and business services for attracting head offices. So a case can be made that the links we show prove that business services and financial services attract head offices, not the other way around. Our statistical analysis can not show the direction of causality. Nonetheless, absence of correlation probably implies no causal links.

Second, the number of head offices is a tiny fraction of establishments or employment in any city region. We estimate that employees of head office establishments account for 1.1 percent of all employees in Canada and 2.5 percent in the United States. The number of NAICS 55 establishments account for 0.6 percent of all establishments in the United States – Canadian data are not available. Regardless of their sphere of influence, head offices can only go so far in explaining the economic performance of a city region.

**Summarizing the linkages.** With respect to the relationships between head offices and industry clusters, the strongest linkage we find is between employment in head offices and the size of and salaries paid in the information technology cluster in Canada, although we see no such relationship in US city regions (*Exhibit 4*). The next most important linkage in Canada is with advertising services where employment in head offices is significantly correlated with the size of and salaries paid in the cluster; this is also an important linkage in the US. Head office employment is also correlated significantly with wages in Canadian local professional services, such as accounting and legal services. We found no relationship between head

offices and the creative class, after controlling for the size of the city region.

Where we did find a relationship between head offices and industry clusters we tested whether there were statistically significant differences in the relationship between Canadian-owned head offices and industry clusters and foreign-owned head offices and industry clusters. In total, we found twelve statistically significant relationships in Canada. In six of these there was no statistically significant difference<sup>25</sup> between Canadian-owned and foreign-owned head offices. In five we found that Canadian head offices had a statistically more significant relationship than did foreign-owned head offices. In one relationship we found a statistically stronger relationship for foreign-owned head offices.

In Canada, the presence of headquarters in a city region is strongly correlated with employment levels in its **information technology** industry cluster. We ran several regressions to assess the quantity and quality of the relationship. First, we find that there is a highly significant correlation between the employment in head offices and the number of people employed in the information technology cluster. Our regressions indicate that:

- a 10 percent<sup>26</sup> increase in head office employment is associated with a 4.6 percent increase in employment in information technology.<sup>27</sup> The statistical analysis indicates that there is less than a 5 percent chance that these two relationships are in fact zero or non-existent. There is a statistically significant difference between the impacts of Canadian- and foreign-owned head offices, that is, domestic head offices are more important for employment in this cluster compared to foreign head offices.

<sup>22</sup>The data that Florida draws on are from similar sources as the industry classifications we discuss above; but now employees are classified by the work they do as individuals. So a lawyer working for an auto manufacturer will be classified as being in the automotive industry cluster and as a lawyer in occupational classification.

<sup>23</sup>Richard Florida, "The Rise of the Creative Class: Why cities without gays and rock bands are losing the economic development race," Washington Monthly, May 2002.

<sup>24</sup>We also assessed Location Quotients as a measure of the local importance of each cluster. The location quotient is a ratio measure of concentration of a cluster in a particular location relative to the North American average. A location quotient of exactly one means employment is represented in the city exactly in proportion to the industry's representation in the North American economy. A location quotient greater than one means employment is higher than would be expected and this indicates importance or concentration of that industry in a city. Our results for location quotients vary little from what we found with employment data once we control for city size.

<sup>25</sup>At the 10 percent level of significance using the F-test.

<sup>26</sup>We explain the results here using a 10 percent change in the independent variables. This is different from the approach used in Exhibit 4, where a 1 percent change is used to be consistent with standard terminology among academic researchers.

<sup>27</sup>Economists refer to this as elasticity.

#### Exhibit 4 Head offices are correlated with some high value business clusters

##### Canadian CMAs (controlling for total employment in region)

Regression results: Impact of 1% increase in Head Office employment and establishments on employment and wages of selected industry clusters and creative class in Canadian city regions

Head office definition	NAICS 55 Employment		Number of NAICS 55 Establishments	
	Employment	Wages	Employment	Wages
<b>Business Services</b>	0.16* (domestic is statistically larger)		0.26† (domestic is statistically larger)	
Management Consulting (sub-cluster)				
Marketing Related Services (sub-cluster)				
Engineering Services (sub-cluster)			0.45† (no difference)	
<b>Financial Services</b>	0.26** (no difference)		0.44* (no difference)	
<b>Information Technology</b>	0.46* (domestic is statistically larger)	0.11* (no difference)	0.99* (domestic is statistically larger)	
<b>Local Commerical Services</b>				
Local Professional Services (sub-cluster)		0.04† (no difference)		
Advertising services (sub-cluster)	0.21† (domestic is statistically larger)	0.10* (foreign is statistically larger)	0.52* (no difference)	
<b>Creative Class</b>		N/A		N/A

##### US MSAs (controlling for total employment in region)

Regression results: Impact of 1% increase in Head Office employment and establishments on employment and wages of selected industry clusters and creative class in US city regions

Head office definition	NAICS 55 Employment		Number of NAICS 55 Establishments	
	Employment	Wages	Employment	Wages
<b>Business Services</b>		0.05**		
Management Consulting (sub-cluster)		0.05**		
Marketing Related Services (sub-cluster)	0.14**		0.26*	
Engineering Services (sub-cluster)				
<b>Financial Services</b>	0.05†		0.13†	
<b>Information Technology</b>				
<b>Local Commerical Services</b>				
Local Professional Services (sub-cluster)			0.15**	
Advertising services (sub-cluster)	0.18**	0.09**	0.35**	
<b>Creative Class</b>				

\* significant at 5%; \*\* significant at 1%; † significant at 10%

† A narrower definition of head offices (NAICS 551114 - Corporate, Subsidiary, and Regional Managing Offices) is used in the US results for the financial services cluster as some subdivisions of NAICS 55 fall into the financial services cluster definition. In 2005 for US, NAICS 551114 accounted for 80% of establishments and 93% of employment in NAICS 55.

Note: Difference between domestic versus foreign head offices in parentheses. Creative class wage data is not available for Canada. Blank cells mean that coefficients are not significant.

Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Martin Prosperity Institute, U.S. Census Bureau, County Business Patterns; Institute for Strategy and Competitiveness (Harvard Business School).

- a 10 percent increase in head office employment is also associated with a 1.1 percent average wage increase in the information technology cluster. Statistically, there is less than a 5 percent chance that this relationship is non-existent. Canadian-owned head offices are no more important statistically than foreign-owned head offices in the correlation with wages in a city region's information technology cluster.
- a 10 percent increase in the number of head office units is associated with a 9.9 percent increase in information technology employment. Statistically, there is less than a 5 percent chance that this relationship is non-existent. Moreover, Canadian-owned head offices are more important than foreign-owned for employment in the city region's information technology cluster.

In contrast, we see no impact of head offices on the strength of the information technology cluster in the United States. It would appear that city areas of strength in information technology are driven much more in Canada by the presence of head offices than in the United States, where other factors dominate.

The relationships in the exhibit are shown after controlling for employment. Since we find that larger cities tend to have more head offices and more people working in industry clusters, we need to ensure that we are not being misled in concluding that there is a relationship between the number of head offices and the size of a cluster when we are really observing that larger cities have both. All the regressions are therefore controlled for employment totals in the city region. (See sidebar *Head offices and high-value clusters are both found in larger cities*).

Next we look at the impact of head offices on employment and wages paid

in the **advertising services** cluster. Here we find statistically significant correlation with head offices and both employment and wages in the cluster. Every 10 percent increase in head office employment is correlated with a 2.1 percent increase in advertising services employment in the city region (with a probability of less than 10 percent that the true relationship is non-existent) and a 1.0 percent increase in wages (confidence level of less than 5 percent). Employment in Canadian-owned head offices has a stronger correlation with advertising services employment in the city region than employment at foreign-owned head offices. In contrast, foreign-owned head offices have a stronger impact on wages in advertising services.

When we define head offices by the number of NAICS 55 units in a city region we find that a 10 percent increase is slightly correlated with a 5.2 percent increase in advertising services employment in the city region – the statistical difference between the impact of Canadian-owned and foreign-owned head offices is negligible. The number of head office units is not correlated with wages in advertising services.

We observe similar relationships between head offices and advertising services in the United States. We also see a relationship between head offices in the United States and the employment strength of **marketing services** clusters in the United States; but we do not see this relationship in Canada.

In Canada, head office employment in a city region (defined either by NAICS 55 employment or NAICS 55 units) is correlated with employment in **financial services**. Statistically, the impact of Canadian-owned head offices is not different than the impact of foreign-owned offices. We see no relationship between head offices and wages in financial services in Canada. In the United States, we see similar results.<sup>28</sup>

In Canada, employment in head offices is correlated with employment in the **business services** cluster – a 10 percent increase in the former is associated with a 1.6 percent increase in the latter. Domestic head offices have a stronger impact than foreign-owned head offices. Similarly the number of head office units is associated with business services employment. Across specific business services, we see only a relationship with **engineering services**.

Finally, in Canada employment in head offices has a modest impact on wages in **local professional services**, which includes accounting and legal services. There is no statistically significant difference between the impact of Canadian-owned and foreign-owned head offices.

We are unable to find a relationship between the number of head offices and the quantity or quality of employment in management consulting and marketing related services in Canada. To be sure there is a strong relationship between the number of head offices and the quantity and quality of these two clusters; but the relationship vanishes when we control for the employment size of the city region.

Turning to relationships between head offices and the creative class, we are unable to discern a statistical relationship – other than the fact that both are more likely to be found in larger cities.

### Comparing compensation at and outside purchases by Canadian-owned and foreign-owned head offices

Statistics Canada carried out a special analysis of head office statistics for the Panel under the direction of the Institute for Competitiveness & Prosperity. The source of this information is *The Survey of Head Office and Other Business Support Units*. This survey

<sup>28</sup> A narrower definition of head offices (NAICS 551114 - Corporate, Subsidiary, and Regional Managing Offices) is used in the US results for the financial services cluster as some subdivisions of NAICS 55 fall into the financial services cluster definition. In 2005, NAICS 551114 accounts for 80% of establishments and 93% of employment in NAICS 55 for the US. We are unable to split out this part of NAICS 55 in Canada – our financial services cluster results should be treated with caution.

is used to supplement information in Statistics Canada’s industry-specific questionnaires to calculate estimates of economic activity for the industries surveyed through its Unified Enterprise Survey (UES) Program. Since it is aimed at head offices, the survey is a useful source of information about head office employment, average wages and benefits paid, purchases of research and development, advertising, business services, and employment services. Consequently it provides direction on the differential spillovers of Canadian and foreign-owned head offices in Canada.

It should be noted, however, that *The Survey of Head Office and Other Business Support Units* is not administered to all head offices. It does include manufacturing, wholesale and retail industries, real estate, and repairs and maintenance. It excludes public sector industries and most natural resources industries, utilities, construction, trans-

portation, information and cultural industries (but includes publishers), finance and insurance, and professional technical services. In total it covers industries that account for 71 percent of private sector employment.

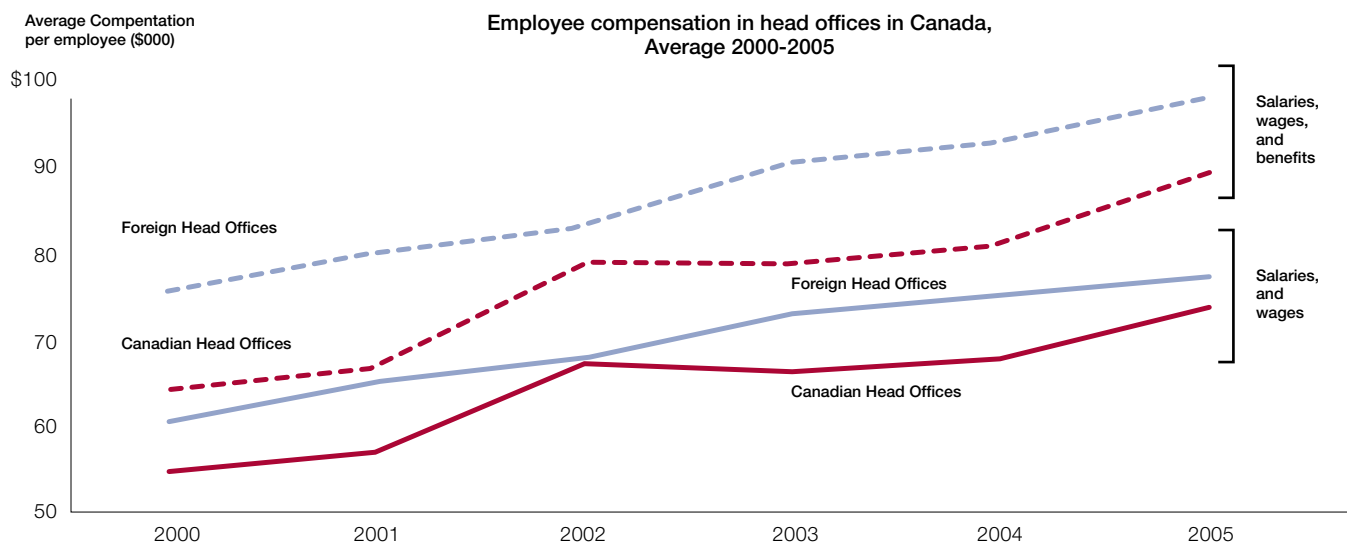
We estimate this survey captures about half of head office employment in Canada and a quarter of head office establishments.<sup>29</sup> As with much of the other data related to head offices, then, these results should be considered directional.

The *Survey* breaks out head offices by domestic and foreign ownership. It breaks this further by differentiating between “centralized administrative offices,” defined in the questionnaire as “corporate, general, or central office” and “other administrative offices,” defined as “divisional, branch or district office.” In 2005, 593 of the establishments were Canadian-owned and 387 were foreign-owned. Whether Canadian- or foreign-owned, more than 90 percent of the head offices were centralized administrative offices.

**Size of head offices.** Over the six-year period for which we have data (2000-2005), the average Canadian-owned head offices covered by this survey had 81 employees and the average foreign-owned head office was 82. Other Canadian head offices had average employment of 70 while foreign-owned other head offices averaged 72 employees. The average size of foreign-owned head offices is close to the results of Beckstead and Brown (about 79 employees per head office) but much bigger for their average Canadian head office (about 33).

**Salaries, wages, and benefits.** One of the key strengths of head offices is that they pay above average compensation. In 2005 in Canada, average salaries at head offices are C\$74,900 versus an overall average of C\$37,800. In the United States, average salaries at head offices are US\$85,200 versus an overall average of US\$38,500.<sup>30</sup>

Exhibit 5 Foreign-owned head offices pay higher salaries and benefits than Canadian-owned head offices



Source: Institute for Competitiveness & Prosperity based on data from Statistics Canada, Unified Enterprise Survey Program.

<sup>29</sup>Total employment in The Survey of Head Office and Other Business Support Units was 83.9 thousand in 2005 or 48 percent of the 174.9 thousand head office employees counted by Beckstead and Brown in their more complete survey. The Survey accounts for 980 establishments 26 percent of the 3,784 establishments counted by Beckstead and Brown.

<sup>30</sup>Canadian results are based on data from Survey of Employment, Payrolls and Hours (SEPH) and Unified Enterprise Survey. US results are based on data from County Business Patterns

Employees at foreign-owned firms receive higher salaries, wages and benefits than their counterparts at Canadian-owned firms. Considering salaries and wages alone, employees at foreign-owned head offices earned an average of \$77,000 in 2005 while employees at Canadian-owned head offices earned \$73,700 or 4.3 percent less. Over the six-year period the gap in average salaries and wages was 7.6 percent. The compensation advantage for employees at foreign-owned head offices is even larger when employer-paid benefits are considered. In 2005, the average foreign head-office employee received \$98,100 in pay and benefits while the average Canadian head-office employee received \$89,100 or 9.2 percent less. The average gap over the 2000-2005 period was 11.9 percent (*Exhibit 5*). At the “other” head offices, employees of both Canadian- and foreign-owned head offices received lower compensation than at “centralized” offices and Canadian offices paid higher compensation than foreign

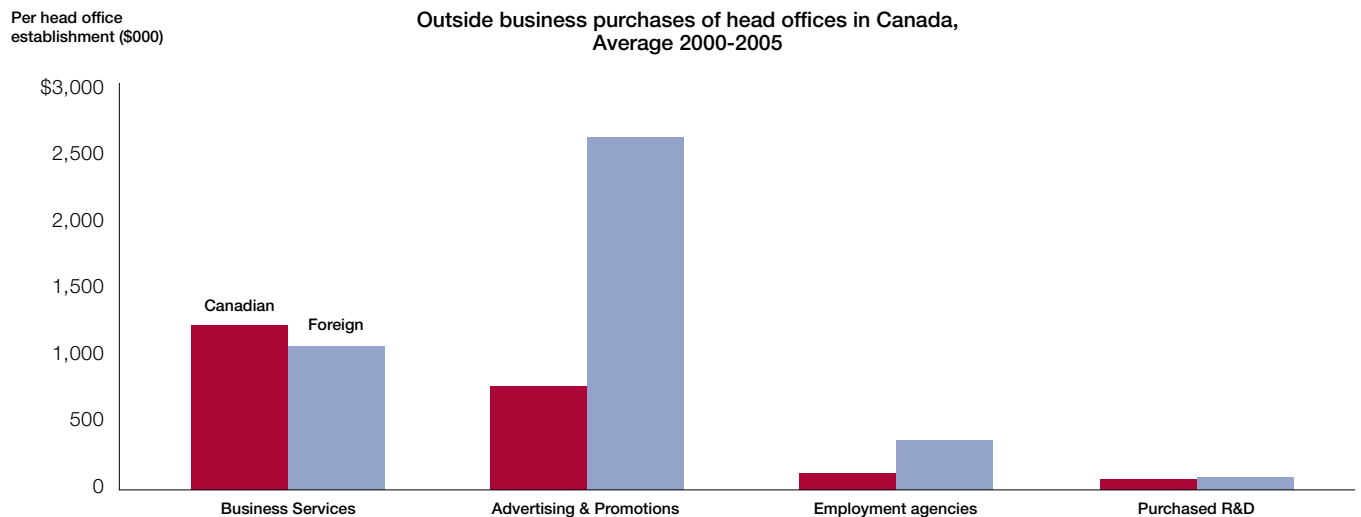
offices; but at the “centralized” head offices where compensation was higher, foreign firms paid higher compensation than Canadian firms.

**Canadian head offices purchase more outside business services.** Head offices of Canadian-owned firms spend more in purchasing outside business services – legal, accounting, etc. - than do the Canadian head offices of foreign firms. On average between 2000 and 2005, the average Canadian head office spent \$1.2 million on purchased business services or 14 percent more than the \$1.1 million spent by foreign-owned head offices (*Exhibit 6*). Two factors may be driving this difference. First, a foreign-owned firm may require less expensive business services since its global head office is responsible for global corporate auditing and higher value legal services. Second, foreign-owned head offices may be choosing to contract out fewer business services which would be consistent with the higher than average compensation they are paying.

**Foreign-owned head offices spend more on advertising and promotion.**

In dollars spent on outsiders on advertising and promotion, foreign-owned head offices spend significantly more than Canadian-owned head offices. Over the 2000-2005 period, the average foreign-owned head office spent \$2.6 million annually on advertising and promotion with outside agencies while the Canadian-owned head office spent \$800 thousand. Per employee, Canadian firms spent an average of \$9,700 over the 2000-2005 period while foreign-owned head offices spent more than three times as much, \$32,300. This gap may reflect a difference in industry mix between foreign-owned and Canadian-owned head offices – foreign-owned head offices may simply be concentrated in industries with greater advertising expenditures. Or it may be accounted for the greater likelihood of foreign-owned head offices to have global brand franchises which they support with advertising and promotion in their Canadian operations.

**Exhibit 6 Canadian-owned head offices purchase more outside business services than foreign-owned head offices; foreign-owned head offices outspend in purchased advertising and promotion**



Source: Institute for Competitiveness & Prosperity based on data from Statistics Canada, Unified Enterprise Survey Program.

**Foreign-owned head offices spend more with outside employment agencies.** The average foreign-owned firm spent \$364,800 annually with outside employment agencies over the 2000-2005 period versus \$121,800 spent by Canadian-owned firms. Beyond the possible reasons for the differences, which we identified above, foreign-owned firms may require outside assistance in finding employees as they are less familiar with local sources of qualified candidates.

**While foreign-owned head offices purchase more outside R&D, levels are low.** In the final category of outside purchases for which we have information, the average foreign-owned head offices contracted out for \$80,500 in R&D services annually over the 2000-2005 period while the average Canadian-owned firm contracted out for \$53,300 or 34 percent less. On a per employee basis, the five-year averages were \$1,000 and \$700 respectively. As with advertising and promotion we cannot determine whether industry mix or fundamental business model differences account for this gap.

In summary, the data from *The Survey of Head Office and Other Business Support Units* indicate that foreign-owned and Canadian-owned head offices do not differ dramatically in their size, as defined by number of employees – in the industries where the Survey captures the information. However, foreign-owned firms pay significantly higher wages and benefits and have higher expenditures for outside purchases of advertising and promotion, R&D, and employment services. Canadian firms spend more in purchasing outside legal, accounting, and other business services. These results are not definitive as they exclude large portions of the Canadian economy, such as banking, where Canadian firms dominate the landscape. Nevertheless, in the 71 percent of the private economy for which they are relevant, results do not indicate that foreign-owned head offices have less spillover to the local economy that do Canadian-owned head offices.

**Large city regions are home both to head offices and to high-value occupations and business services.** While it is a statistical challenge to separate out the influence of city size to assess this relationship, the data do indicate that, for a given city size, a greater incidence of head offices does correlate with some high-value business services. In Canada, the data also indicate that this positive relationship exists as much for foreign-owned as for Canadian-owned head offices. Head offices, irrespective of their ownership, are directly and indirectly related to high-value economic activity.

# Concluding comments

## **MUCH OF THE HOLLOWING-OUT DEBATE**

that is taking place in Canada is centered around the economic importance of head offices on the local and national economies. Most observers believe intuitively that head offices are important sources of economic value. Some believe that the impact of Canadian-owned head offices is much more significant than foreign-owned head offices. Thus, there is a loss to Canada's economic potential whenever one of our firms is taken over by foreign owners.

But, hard evidence to support these intuitions is hard to come by. In this paper, we have attempted to assemble existing data and develop new information to shed light on the questions related to the economic impact of head offices.

Our research points to an overall conclusion – head offices likely have positive economic spin offs to a city region irrespective of the nationality of company ownership. But, the results need to be interpreted with caution. We find evidence of correlation between the presence of head offices and high-value economic activities – but we cannot be conclusive on the direction of the causality. And for much of our analysis we must attach some statistical caveats. Nevertheless, we are confident in concluding that, from a public policy perspective, it is important for firms in Canada to flourish so that they generate spillovers to our city regions. Economic policy should be aimed at creating the environment for Canadian companies to innovate and expand in Canada and beyond. Foreign-owned head offices also provide economic benefits and policies aimed at blocking their investment in Canada will be counter productive to the creation of an environment to stimulate Canadian firms. In the end we require vibrant city regions and skilled human capital which support the growth of head offices which in turn increases the vibrancy of Canadian cities in a virtuous circle.

# Head offices and high-value clusters are both found in larger cities

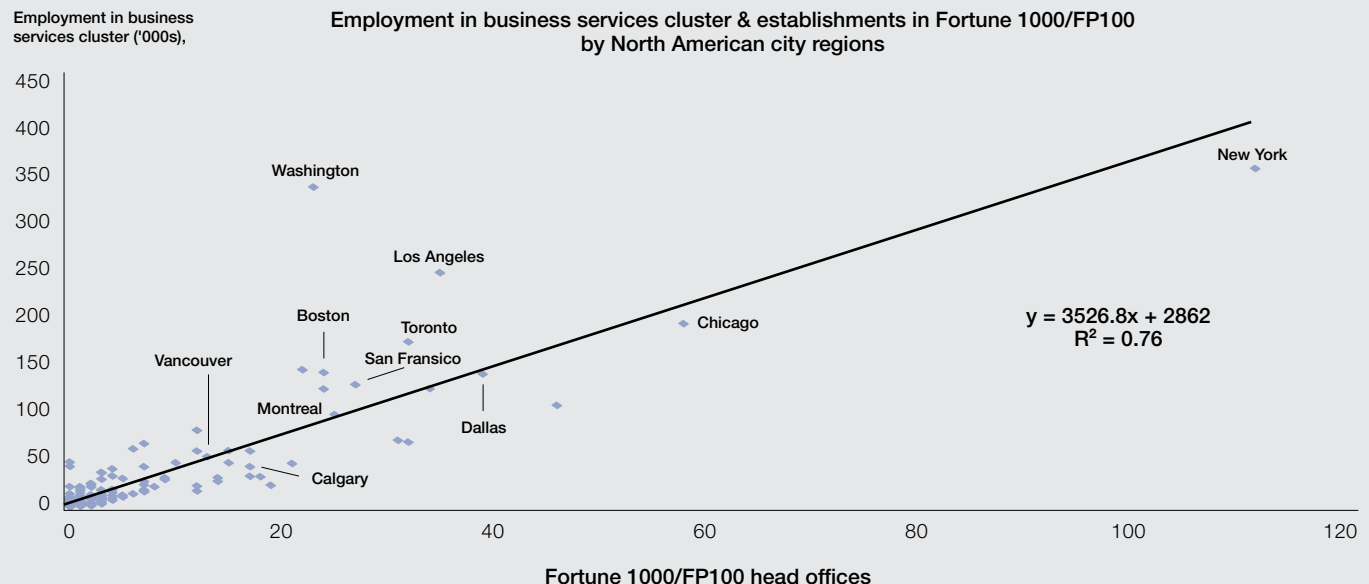
A major statistical challenge in measuring the relationship between head offices<sup>31</sup> and high-value business services and occupations is that both tend to locate in large metropolitan areas. If we measure the simple statistical relationship between the number of head offices and the employment in business services cluster, we see a very tight linkage (Exhibit A).

But before we conclude that more head offices means more people in the business services cluster, we should note that the larger the city, the more people in the business services cluster (Exhibit B) and the larger the city the more head offices there are (Exhibit C). We see the same inter-relationships when we look at employment in other clusters and Richard Florida's creative class. We also see the same relationship when we assess salaries.

It's quite possible that bigger cities simultaneously bring both more head offices and more people and higher salaries in high-value services and occupations – and that the specific impact of the number of head offices is non-existent.

There are statistical techniques which allow us to control for the size of the city when we assess the relationship between the number of head offices and the employment in the business services cluster. Thus we can differentiate between the impact of city size and the number of headquarters on the cluster or occupation of interest. What we observe is that the size of the city is much more important than the number of head offices. But in some cases the number of head offices does explain more of the variance between city regions on clusters and occupations. In this report we show all our correlation results after controlling for city size.

Exhibit A **Statistical relationship between head offices and business services cluster is close**



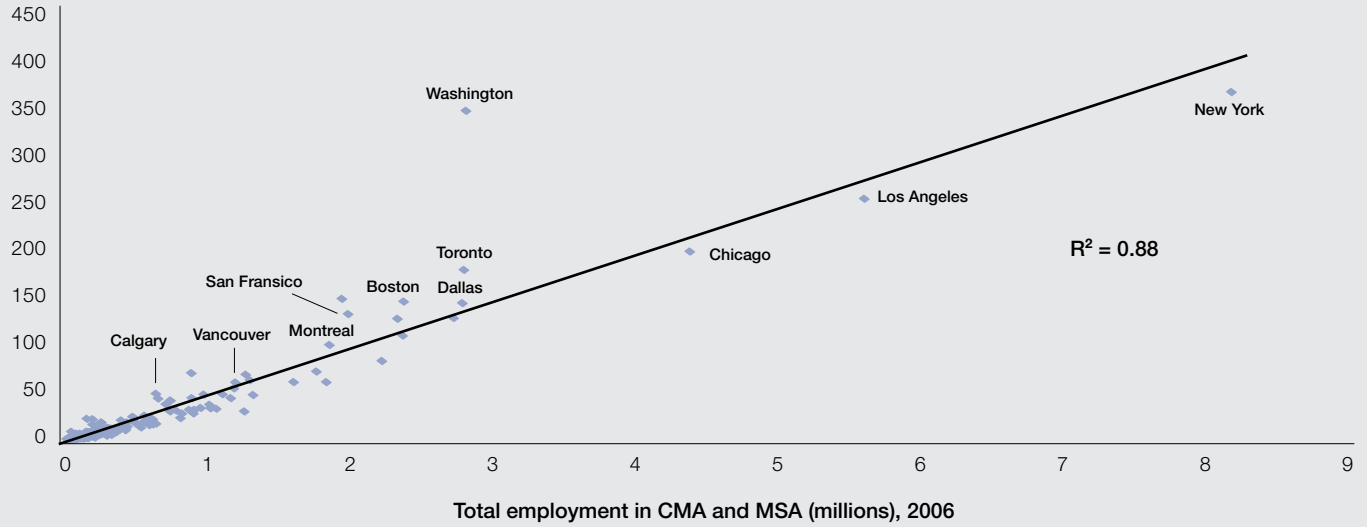
Source: Institute for Competitiveness & Prosperity analysis based on data from Institute for Strategy and Competitiveness; Statistics Canada; Fortune 1000 & Financial Post 500, 2005 issues.

<sup>31</sup>Our head office definition for this sidebar is the companies on 2005 Fortune 1000 and the largest 107 Canadian-owned companies on FP500. These 107 firms have revenue that would rank them higher than the smallest company on the Fortune 1000. We use Fortune 1000 and FP500 lists for head offices because Statistics Canada does not disclose data for NAICS 55 for all the Canadian CMAs.

**Exhibit B Statistical relationship between head offices and business services cluster is close**

Employment in business services cluster ('000s), 2004

Employment in business services cluster and total employment by North American city regions

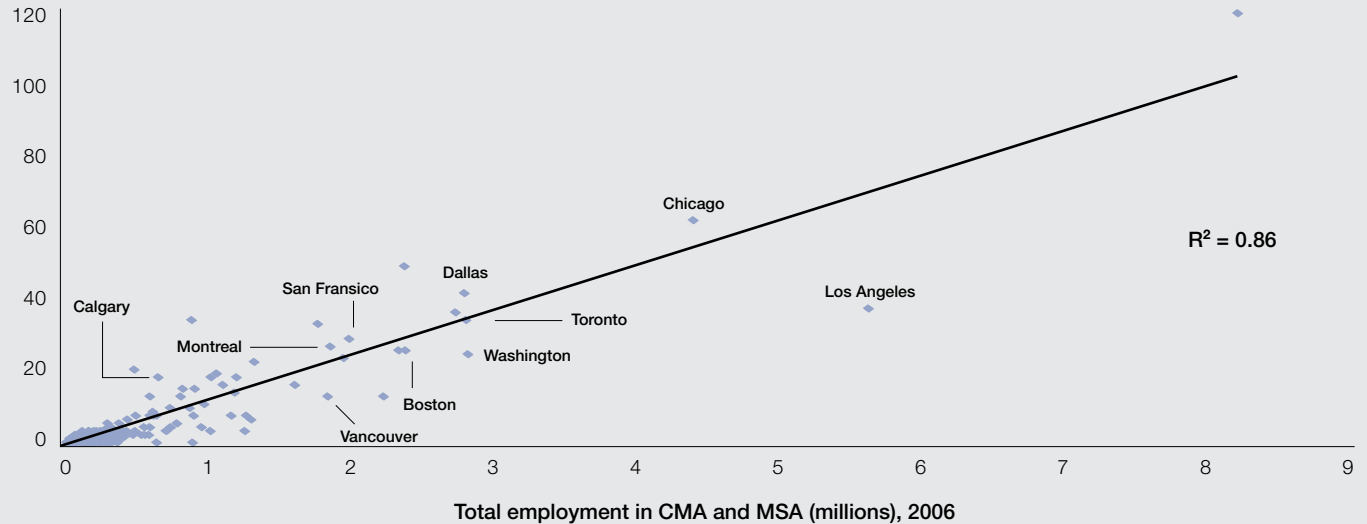


Source: Institute for Competitiveness & Prosperity analysis based on data from Prosperity Institute; Institute for Strategy and Competitiveness; Statistics Canada.

**Exhibit C Statistical relationship city size and the number of head offices is close**

Fortune 1000/FP100 head office

Number of establishments in Fortune 1000/FP100 and total employment by North American city regions



Source: Institute for Competitiveness & Prosperity analysis based on data from Prosperity Institute; Fortune 1000 & Financial Post 500, 2005 issues.

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