Location Cost Analysis for Currency Exchange Operations

Prepared for:

International Finance Center British Columbia
Mr. Bruce Flexman
President

Prepared by:

MMK Consulting Inc.
Glenn Mair
Lynn Arychuk

April 12, 2011

Contents

Executive summary

Introduction and methodology

This study compares the operating costs of a small foreign currency exchange trading house operating in each of 10 major North American cities. Developed on behalf of International Finance Center British Columbia (IFCBC), and in conjunction with the BC Ministry of Jobs, Tourism and Innovation, this analysis can also be viewed as being broadly applicable to a range of high-value, professionally-oriented international business services operations.

This study builds upon approach and methodology of the KPMG *Competitive Alternatives* study[1], which has been developed by MMK Consulting Inc. in conjunction with KPMG. The study defines key operating parameters for a typical foreign currency exchange operation, and then compares business operating costs for an equivalent operation in each selected city. The study compares all major location-sensitive business costs, labour, facility, utility, and financing costs, as well as all significant taxes and incentives, and incorporates the impacts of incentive programs offered in Vancouver and Montreal that apply specifically to international business/financial activities.

While great care has been taken in performing this analysis and developing the findings, the resulting comparisons are of a general nature, and should not be interpreted as a definitive or final opinion on the merits of locating any specific facility in one jurisdiction over another. For other caveats and limitations, refer to Section 1.4 of this report.

Currency exchange operation

The operation selected for analysis in this study represents a small currency exchange brokerage with a total of 25 employees. The brokerage is assumed to be operating either as a stand-alone entity or as a subsidiary of a larger financial services group, such as an investment bank.

For this operation, 100% of income is assumed to be earned from international business activities that qualify under the incentive programs available in Vancouver and Montreal (refer Section 1.3.3).

Study results

Based upon the operating parameters identified for the model currency exchange operation, and the range of location-sensitive costs examined, Vancouver ranks first among the ten cities examined, due to savings in both labour costs and taxes. Costs in Vancouver are marginally lower than in Montreal, and significantly lower than in all other locations examined. Costs in Vancouver range from 8.2 percentage points lower than third-ranked Denver to 30.8 percentage points lower than tenth-ranked New York City. The cost results for all cities are summarized in Table 1.

Table 1, Summary cost comparison, US$M

	Vancouver	Montreal	Toronto	Boston	Chicago	Denver	Los Angeles	New York	San Francisco	Seattle
Total annual costs	$5.24M	$5.29M	$5.82M	$6.85M	$6.55M	$5.78M	$6.58M	$7.28M	$6.93M	$6.41M
Index (US=100.0)	**79.0**	**79.8**	**87.8**	**103.4**	**98.9**	**87.2**	**99.3**	**109.8**	**104.6**	**96.7**
Rank	**1**	**2**	**4**	**8**	**6**	**3**	**7**	**10**	**9**	**5**

[1] *Competitive Alternatives, KPMG's Guide To International Business Location*, www.CompetitiveAlternatives.com.

1. Introduction and methodology

1.1. Introduction

The International Finance Center British Columbia (IFCBC), in conjunction with the BC Ministry of Jobs, Tourism and Innovation, engaged MMK Consulting Inc. (MMK) to develop this assessment of business costs for a high-value-added financial services operation in 10 North American cities. Within this context, a small currency exchange trading operation has been chosen as the subject for this study.

This study builds upon the KPMG *Competitive Alternatives* study[1], and the related online tool, the CompetitiveAlternatives.com Cost Model; both of which are developed by MMK in conjunction with KPMG. The *Competitive Alternatives* study already includes an operation relevant to the back office portion of the financial services industry, but does not include any higher value added, professionally-oriented financial services operations.

This study has been designed to address this information gap, by developing a set of operating parameters for a typical small currency exchange operation, and then analyzing the business operating costs for the model operation in Vancouver and nine competing North American cities.

While great care has been taken in performing this analysis and developing the findings, the resulting comparisons are of a general nature, and should not be interpreted as a definitive or final opinion on the merits of locating any specific facility in one jurisdiction over another. For other caveats and limitations, refer to Section 1.4 of this report.

1.2. Geographic scope

This study compares business costs for foreign currency exchange operations in a total of 10 selected cities, including three in Canada and seven in the United States:

- Vancouver, British Columbia
- Montreal, Quebec
- Toronto, Ontario
- Boston, Massachusetts
- Chicago, Illinois
- Denver, Colorado
- Los Angeles, California
- New York City, New York
- San Francisco, California
- Seattle, Washington

[1] *Competitive Alternatives, KPMG's Guide To International Business Location*, www.CompetitiveAlternatives.com.

All analysis for this report has been prepared assuming parity between the Canadian and US dollars, reflecting the general level of exchange rates in late 2010/early 2011. Therefore, all dollar amounts in this report can be read as either Canadian or US dollars. A sensitivity analysis comparing alternate exchange rate assumptions is detailed in Section 3.3. of this report.

1.3. Methodology

This study defines a typical foreign currency exchange operation, identifying various key operating parameters for the operation. These parameters are then held constant for all locations in order to compare business operating costs for an equivalent operation in each selected location.

For this standardized operation, the study analyzes and compares all major location-sensitive business costs, including labour, facility, utility, and financing costs, as well as all significant taxes and incentives. The basis for comparison is the after-tax cost of start-up and operation for the model business operation, over a 10-year planning horizon.

The methodology used in this study is generally consistent with that of the 2010 Edition of KPMG's *Competitive Alternatives* study, with the following exceptions:

- Updated exchange rates and tax rates as are available in the current (March 2011) version of the CompetitiveAlternatives.com Cost Model have been used in this analysis.
- Current salary information specific to the financial services industry has been developed for use in this study, based on a variety of sources as noted in Chapter 3.
- Specific operating assumptions have been made to model the applicability of international business activity incentives available in certain cities, as discussed below in Section 1.3.3.

Given the methodological connection between this study and the KPMG *Competitive Alternatives* study, other methodological aspects of the *Competitive Alternatives* study relevant to this report are summarized as follows.

1.3.1. Costing methodology

To the extent that each cost factor is relevant to these currency exchange operations, this study analyzes the same range of location-sensitive cost factors as were included in in the 2010 edition *Competitive Alternatives.* This potential range of cost factors is detailed in Exhibit 1.1 (overleaf).

Some significant cost items, such as computer hardware and office equipment, tend to be governed by market prices and do not vary significantly by location. These costs have been held constant for this analysis. A number of less significant cost factors, such as, advertising, accounting services, and office supplies, may be location-sensitive, but do not have a material impact on the overall comparison and are not examined in this study.

Except as otherwise noted, cost data used in this study are current as of the last quarter of 2009, the effective date for all data and analysis contained in the 2010 edition of *Competitive Alternatives*. Exchange rates, tax rates, and salary costs have been updated to reflect January 2011 information.

Exhibit 1.1
Location-sensitive cost components from *Competitive Alternatives*

Labor Costs
- Salaries and wages
- Statutory plans
  - Government pension plans
  - Public medical plans
  - Unemployment insurance
  - Workers' compensation
- Employer-sponsored benefits
  - Paid time not worked (holidays and vacation)
  - Private health insurance
  - Other discretionary benefits

Facility Costs
- Downtown office lease

Transportation costs
- Surface freight (trucking/rail)

Utility Costs
- Electricity
- Natural gas

Depreciation Charges/ Financing Costs (Interest)

Taxes Other Than Income
- Capital
- Property
- Sales and transactions
- Land transfer
- Sundry local taxes

Income Taxes
- Federal
- Regional (state, provincial, etc.)
- Local (where relevant)

1.3.2. Productivity in different locations

Competitive Alternatives compares different types of individual business operations from the viewpoint of a business investor. In addressing productivity differentials between locations, three major causes of productivity variations – time worked, technology employed, and workforce training – have been accounted for or standardized as part of defining the business operations. Given this approach, the productivity of operations is assumed to be equal in all locations.

1.3.3. Incentives

General business incentives

Significant non-discretionary incentives, with clearly defined, broad-based eligibility criteria, are included in the scope of this study. Non-discretionary incentives include: certain tax rate reductions, tax abatements, sales tax exemptions, favorable interstate-income apportionment rules, investment tax credits, research and development incentives, and/or job tax credits that may be available in various jurisdictions.

For high-value business investments, including in the financial services industry, governments may also offer incentive packages on a discretionary basis. These packages typically comprise a complex set of financing assistance and/or tax abatements, tailored to specific investment and job creation proposals. The analysis in this report does not distinguish among jurisdictions based on discretionary incentives, because:

- There is generally no before-the-fact basis for estimating accurately the value of incentives a jurisdiction may ultimately provide, without entering into negotiations over a specific investment proposal.
- The primary focus of this study is on the underlying business cost fundamentals that apply to operations.

International business services incentives

In both Vancouver and Montreal, significant tax incentives apply to businesses engaged in international financial services and/or business activities. The impact of these credits is detailed in Chapter 3 of this report, but these incentives are briefly described as follows:

- **Vancouver: International Business Activity (IBA) Program –** This program provides a rebate on provincial corporate income tax paid on income earned from qualified international business activities, including international financial services activities. The analysis presented in this report assumes that the model currency trading operation earns 100% of its income from qualified international business activities in Vancouver – consistent with the program rules relating to currency exchange operations of banks, credit unions trust companies, and corporations whose primary business is dealing in foreign exchange. This report also examines alternate scenarios to assess the relative impact of the IBA program if the model firm were assumed to earn 0% and 50% of its income from qualified international business activities.
- **Montreal: International Financial Centre (IFC) Program –** This program provides eligible corporations operating an international financial centre a refundable tax credit of up to 30% of employee salaries, to a maximum credit of $20,000 per eligible employee per annum. The international financial centre must have a minimum of six eligible full time employees to be eligible for this credit, at least 75% of the duties of an employee must be devoted directly to the transactional processes of qualifying international financial transactions.

In addition to the corporate tax benefits described above, the Vancouver IFA and the Montreal IFC incentive programs both also include an option for personal income tax savings for qualified foreign specialists moving to Canada to work in the international business/finance operation. These personal tax incentives have not been included in this analysis.

We also undertook a detailed review of provincial/state and local incentive programs available in each of the other jurisdictions examined in this study, but did not identify any other specific incentive programs for international business services activities that would apply to this currency exchange operation in any of the other locations being studied. In the course this review, the following two programs were identified as being potentially relevant to some financial services operations, although not applicable to the specific operation examined in this study:

- **Washington State: International Services Business and Occupation Tax Credit Program –** This program provides tax credits of $3,000 for up to five years for each new international services job that is created and maintained. However, the credit is only available in community empowerment zones and designated international services districts. The closest such zone or district to Seattle is an international services district located in Everett, WA, 48 kilometres from downtown Seattle on its suburban fringe.

- **New York State: Investment Tax Credit Program –** This program provides a state income tax credit equal to 5% of investments made in tangible business property for many types of businesses. Until October 1, 2011, this credit has been made available on a temporary basis to brokers or dealers of stocks, bonds, other securities, or commodities; investment advisors for regulated investment companies; loan originators where the loans are made in connection with the purchase of securities; and registered national-board stock exchanges. It is not apparent that this incentive could extend to a currency exchange operation, and given the pending expiry of this provision, it has not been further considered for inclusion in this analysis.

1.3.4. Further information on methodology

For further information about the *Competitive Alternatives* study methodology, please refer to the *Competitive Alternatives* study report, available for download at: www.CompetitiveAlternatives.com.

1.4. Interpretation of results

While great care has been taken in performing this analysis and developing the findings, the resulting comparisons are of a general, hypothetical nature.

All cost factors examined in this study are subject to change over time, due to changes in local laws, regulations, market conditions, and/or exchange rates. Tax rates and other tax-related information are also subject to change as a result of new legislation, judicial decisions, and administrative pronouncements.

Therefore, the results of this study should not be interpreted as a definitive or final opinion on the merits of locating any specific facility in one jurisdiction over another. Further analysis and appropriate professional advice are required to determine the best site for any specific facility or operation.

2. Currency exchange operations

The operation selected for analysis in this study represents a small currency exchange brokerage with a total of 25 employees. The brokerage is assumed to be operating either as a stand-alone entity or as a subsidiary of a larger financial services group, such as an investment bank.

Based on these key assumptions, the detailed operating parameters presented in Exhibit 2.1 have been developed to provide a profile for modelling this business operation. These operating parameters were compiled based on industry reports, public information about currency exchange operators, and direct interviews with industry experts.

Exhibit 2.1
Summary of operating parameters
Currency exchange operation

Facilities requirements		
Size of office (downtown, leased)	6,500	ft^2
Initial investment requirements		
Computer and office equipment – US$	$300,000	
Equity financing - % of project costs	100%	
Workforce		
Management:		
- Senior Vice-President	1	
- Financial Analysis Manager	1	
- Market Research Manager	1	
- Product Manager	1	
Sales and administration:		
- Administrative Assistants	5	
- Sales Representatives	2	
- Computer Support Specialist	1	
Financial services:		
- Compliance Officer	1	
- Foreign Exchange Trader/Dealer	12	
Total employees	25	
Energy Requirements		
Monthly electric consumption and demand	20,000	kWh at 100 kW
Other operating characteristics		
Revenues: cost-plus mark-up of operating expenses	+17.6%	of expenses
Revenues from international business activities[1]	100%	of revenues
Other annual operating costs – US$	$1.8M	

1. Qualifying revenues for incentive purposes in Vancouver and Montreal. Refer to next page for discussion of this point.

For this operation, 100% of income is assumed to be earned from international business activities that qualify under both the Vancouver and Montreal incentive programs (refer to Section 1.3.3).

This percentage is believed to be appropriate for the type of currency exchange operations being examined. The International Business Activity program available in Vancouver stipulates that if the registrant is a bank, a credit union, a trust company, or a corporation whose primary business is dealing in foreign exchange, then dealing in foreign exchange transactions represents a qualifying international business activity, regardless of whether the counterparty to the transaction is a Canadian resident or a non-resident. This is one of the few qualifying activities under this program in which the counterparty to the transaction can be a Canadian resident.

In addition to this base assumption of 100% of qualifying income, Chapter 3 assess the sensitivity of this assumption by examining the results for Vancouver and Montreal if 0% or 50% of income is earned from qualifying international business activities.

3. Study results

3.1. Overall results – 100% international business activity

Exhibit 3.1 presents a summary of the business cost results for the currency exchange operation for Vancouver and the nine competing jurisdictions. These results reflect the base assumption that 100% of income is earned from qualifying international business activities.

Vancouver ranks first among the ten cities examined, with costs marginally lower than in Montreal (0.8 percentage points differential), and significantly lower than in all other locations examined. Costs in Vancouver are 8.8 percentage points lower than in Toronto, and Vancouver's cost advantage relative to the US cities examined, ranges from 8.2 percentage points relative to Denver (the lowest-cost US location), to 30.8 percentage points relative to New York City. Costs in Vancouver are 17.7 percentage points lower than in nearby Seattle.

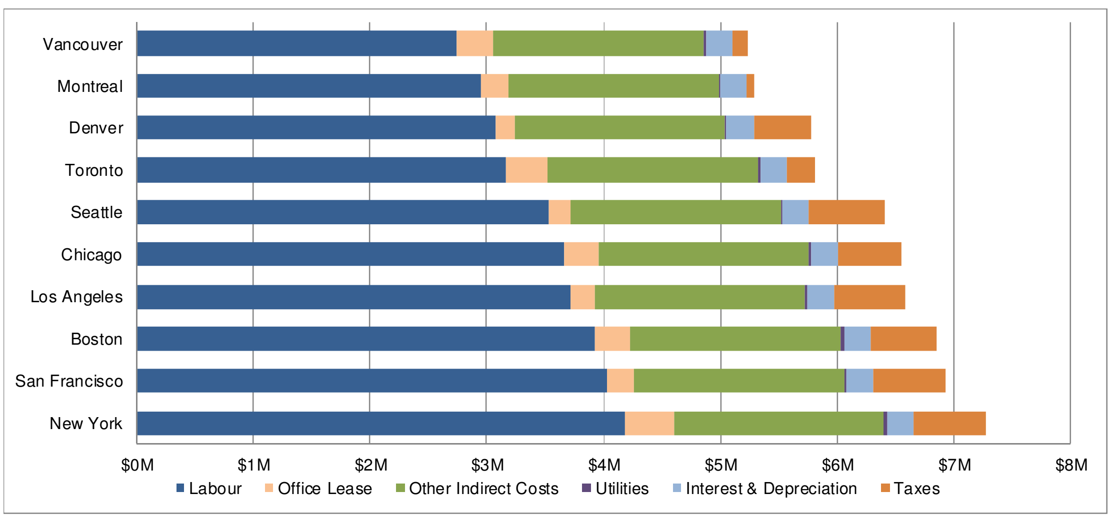
Exhibit 3.1
Summary cost comparison, US$M
Currency exchange, 100% international business activity

	Vancouver	Montreal	Toronto	Boston	Chicago	Denver	Los Angeles	New York	San Francisco	Seattle
Total annual costs	$5.24M	$5.29M	$5.82M	$6.85M	$6.55M	$5.78M	$6.58M	$7.28M	$6.93M	$6.41M
Index (US=100.0)	**79.0**	**79.8**	**87.8**	**103.4**	**98.9**	**87.2**	**99.3**	**109.8**	**104.6**	**96.7**
Rank	**1**	**2**	**4**	**8**	**6**	**3**	**7**	**10**	**9**	**5**

The total business costs for the seven US cities average $6.62 million per annum, and this represents base of 100.0 from which the cost index for each city has been developed.

Exhibit 3.2 illustrates the significance of each major cost factor within the total business costs for each of the 10 cities examined. The following sections present a brief discussion of these cost factors, and a detailed comparison of all cost factors can be found in Appendix A.

Exhibit 3.2
Summary cost comparison, US$M
Currency exchange, 100% international business activity



3.2. Cost factor differences

The range of location-sensitive cost factors examined for the model currency exchange operations average more than 71% of total operating costs across all locations. The remaining 29% of costs include a wide range of cost factors, including marketing, telecommunications, technology, professional services, and other lesser costs that are assumed not to vary by location.

3.2.1. Labour costs

Labour costs represent the largest location-sensitive cost factor for this operation. As shown in Exhibit 2.1, 84% of the workforce for these operations is operationally-oriented, with management accounting for the remaining 16% of employees. Currency dealers and traders comprise the largest component of the workforce, representing approximately half of all staff. Administrative support, marketing and sales, and financial compliance comprise the other main functional roles.

Exhibit 3.3 details the labour cost comparison for this model operation, broken down between wages, statutory benefits, and other benefits, on a per-employee basis.

Exhibit 3.3
Labour cost comparison
Currency exchange, 25 employees

	Salaries & wages		Benefits				Total labor	
			Statutory benefits		Other benefits			
	Average per employee (US$)	Rank	% of payroll	Rank	% of payroll	Rank	Average per employee (US$)	**Rank**
Vancouver	$87,200	1	3.8%	1	22.0%	1	$109,640	**1**
Montreal	$90,600	3	6.9%	4	23.0%	2	$117,680	**2**
Toronto	$98,440	4	5.2%	2	23.2%	3	$126,400	**4**
Boston	$114,280	8	7.0%	5	30.2%	5	$156,800	**8**
Chicago	$106,480	6	7.5%	8	30.2%	4	$146,680	**6**
Denver	$88,920	2	7.8%	10	30.8%	7	$123,240	**3**
Los Angeles	$107,360	7	7.5%	7	30.8%	10	$148,480	**7**
New York	$122,080	10	6.9%	3	30.2%	6	$167,400	**10**
San Francisco	$116,880	9	7.1%	6	30.8%	9	$161,240	**9**
Seattle	$102,160	5	7.7%	9	30.8%	8	$141,480	**5**

Vancouver ranks first among the 10 cities for average employee salaries and wages for this model operation, with an average salary of $87,200 per employee. Montreal and Denver both have salary costs within 4% of Vancouver. Fourth-placed Toronto sees salaries 13% higher than Vancouver, but still offers the lowest salaries among the "top tier" financial centres, which also include Chicago, Los Angeles, Boston, San Francisco, and New York City.

Vancouver's costs for statutory and other benefits (expressed as a percentage of payroll) are also the lowest among the 10 cities examined, representing 3.8% for statutory benefits and 22.0% for other benefits. Other benefit costs for the US cities are influenced by the high cost of private medical insurance premiums typically paid by US employers on behalf of their employees. Indeed, other benefit costs, which include private health care, vacation and holiday allowances, retirement savings, and other typical benefit items, are estimated to be 30-31% of wages for each of the US cities, as compared to 22-23% for the Canadian cities. Given this advantage, Vancouver's total labour costs rank first among the 10 locations.

For this study, determining appropriate salary estimates represents a critical aspect of estimating the cost of operating in each location. Given the significance of labour costs in this analysis, salary cost estimates specific to the financial services industry were developed using 2010/2011 and other recent data from a variety of sources, including:

- United States:
    - *Salary Assessor*, ERI Economic Research Institute, 2011
    - *Salary Guide, Accounting and Finance, United States,* Robert Half International, 2011
    - *Salary Database,* Payscale.com
    - *Global Salary Survey*, Robert Walters, 2011
- Canada:
    - *Salary Assessor*, ERI Economic Research Institute, 2011
    - *Salary Guide, Accounting and Finance, Canada,* Robert Half International, 2011
    - *Salary Database,* Payscale.com
    - *Employment, Earnings & Hours*, Statistics Canada, December 2010 (Average weekly earnings, salaried employees, by province, NAICS 52: Finance and insurance)
    - *GEO Canada*, Mercer, 2009/10
    - *Labour Market Information Salary Database*, Human Resources and Skills Development Canada, 2008/09
    - Plus, two confidential financial industry firm and profession surveys

Salary differentials between the three Canadian cities developed from these various sources were also vetted against the personal knowledge of seasoned industry professionals with experience at national financial services firms, and found to be reasonably representative of salary differentials generally perceived to be existing within the industry.

3.2.2. Other operating costs

Facilities

Facility costs for this model operation include costs related to leasing 6,500 square feet of downtown Class A office space. Facility costs represent approximately 4.3% of total business costs for the model operation. As detailed in Appendix A, these costs average approximately $318,000 per year in Vancouver, ranking it eighth among the 10 cities examined. Among the 10 cities, only Toronto and New York City report higher downtown office leasing costs than Vancouver. Denver and Seattle represent the two lowest cost markets for downtown office leasing.

Utilities

As shown in Exhibit 2.1, this operation has very limited utility requirements, and as a result, utility costs represent only about 0.3% of total business costs for this operation. Electricity is the only utility cost relevant to this model operation, and costs in Vancouver rank fourth among the 10 cities in this regard.

3.2.3. Non-income taxes

This operation is impacted by two main types of non-income taxes. Full details of all taxes in all locations can be found in Appendix A, but key points related to non-income taxes are as follows:

- **Sales taxes** paid on purchases represent a significant cost to this model business in all seven of the US locations examined, ranging from approximately $94,000 per year in Boston to $157,000 per year in Seattle for the model currency exchange operation. In Vancouver, Montreal, and Toronto, net sales tax costs are nil due to sales taxes being generally refundable to businesses in these locations. (This analysis is based on the harmonized sales tax currently in place in British Columbia as at March 2011.)
- **Property taxes** for leased office space are included as part of the gross lease costs reported under facility costs, and are not separately identifiable. Therefore, the results for this business case only reflect property tax costs for those US locations where business equipment is subject to property tax. These taxes apply in five of the seven US locations examined, with Chicago and New York being the only US cities examined where business equipment is not subject to property tax. Equipment-related property tax costs range from $8,000 per year in Seattle to $17,000 per year in Boston and Denver for the model currency exchange operation.

3.2.4. Income/gross receipts taxes and credits

Income taxes (and gross receipts tax for Washington State) represent a significant cost item for the model currency exchange firms, with significant differences in tax rates between locations:

- In the **US locations**, the high US federal corporate tax rate and a lack of any generally available (non-discretionary) tax incentives for this type of operation result in effective corporate income tax rates that range from 34.9% in Seattle to approximately 40.9% in both Los Angeles and San Francisco. However, in Seattle, Washington State's gross receipts tax also applies at a rate of 1.8% of gross revenue for a service business such as this currency exchange operation. If this tax is incorporated into Seattle's effective income tax calculation, then Seattle's effective corporate tax rate rises to 51%.
- In contrast, **Toronto** offers an effective corporate income tax rate of 25.1%. As the only Canadian location examined without specific tax incentives for international financial/business activities, Toronto's effective corporate income tax rate is in-line with its nominal combined federal/provincial tax rates. These rates reflect (over the 10-year analysis horizon) the scheduled drop in the federal corporate tax rate from 16.5% to 15.0% in January 2012, and Ontario's provincial rate dropping from its current 11.5% to 10.0% by July 2013.

- In **Montreal**, the International Financial Centre program provides corporations operating an international financial centre a refundable tax credit of up to 30% of salary for eligible employees, to a maximum credit of $20,000 per eligible employee per annum. These credits exceed provincial income tax otherwise payable in Montreal, resulting in a provincial tax refund to the business. However, after paying federal income taxes, the model operation's effective corporate income tax rate in Montreal is 6.9%.
- In **Vancouver**, the International Business Activity program provides a rebate on provincial corporate income tax paid on income earned from qualified international business activities. The currency exchange operation examined above is assumed to be earning 100% of its income from qualifying international business activities, and after allowing for the relevant provincial tax rebate, Vancouver shows an effective corporate income tax rate of 14.9% for the model operations.

3.2.5. Sensitivity of results to incentive assumptions

Sensitivity to international business activity income assumption

The main scenario for the currency exchange operation analyzed in this report assumes that 100% of its income is earned from international business activities that qualify under both the Vancouver and Montreal incentive programs (refer to Section 1.3.3). This percentage is believed to be typical for the type of currency exchange operation being examined, based on the definitions used for the relevant incentive programs in these cities.

In addition to this base assumption, Exhibit 3.4 assesses the sensitivity of this assumption by examining the results for Vancouver and Montreal if 0% or 50% of income is assumed to be earned from qualifying international business activities.

Exhibit 3.4

Sensitivity of cost index results for Vancouver to international business income assumption

	% of Income from International Business Activities		
	0%	50%	100%
Vancouver cost index	80.5	79.7	79.0
Montreal cost index	82.7	81.2	79.8

In Vancouver, where the incentive is based on net income, the tax rebate received varies directly with the percentage of income earned from qualifying activities. In Montreal, the tax credit depends upon qualifying activities undertaken by individual employees. For this sensitivity analysis, it has been assumed that the percentage of trading staff qualifying for the incentive aligns with the percentage of income earned from qualifying activities (i.e., particular trading staff are assigned to work on either qualifying or non-qualifying transactions).

If the currency exchange operations did not have any income that qualified under the international business/financial services incentive programs (or if the programs did not exist), total business costs for this operation in Vancouver would increase by 1.5 percentage points when compared to the base assumption of 100% qualifying income, while in Montreal total business costs would increase by 2.9 percentage points.

If the Vancouver operation earned 50% of its income from qualifying international business activities, this would result in an increase in total business costs of 0.7 percentage points relative to the base assumption, while Montreal's total business costs would increase by 1.4 percentage points under this scenario. In both scenarios, Vancouver continues to offer a business operating cost advantage relative to Montreal.

While an assumption of 100% qualifying income is appropriate to the currency exchange operation examined, 50% qualifying income is more typical for firms with operations in a broad range of other international business activities which qualify under the BC IBA program.

Sensitivity to profitability assumption

In 2010, Montreal's International Financial Centre incentive program was revised to focus its assistance on a refundable wage tax credit, to a maximum limit per employee. In contrast, British Columbia's International Business Activity incentive in based on provincial corporate income tax paid, and therefore on profitability. These two different structures suggest that:

- The Montreal incentive program should be relatively more beneficial for operations with high labour costs and low profitability (hence lower provincial income tax otherwise payable, and larger incentive refunds).
- The incentive program in Vancouver should be relatively more beneficial where profitability is high, irrespective of labour costs.

The scenarios examined in this report have all assumed a profitability margin based on revenue being equal to total operating costs plus a mark-up of 17.6%. This assumption is based on a 2009 study by MMK Consulting for IFCBC (*Review of the British Columbia International Financial Activities Program)* which estimated this to be an average profit margin across all IFCBC member activities. However, currency exchange operations have the potential to be very highly profitable. Therefore, Exhibit 3.5 compares the results for Vancouver and Montreal if a higher profitability assumption was made, assuming a revenue figure equal to a mark-up of 40% over operating costs.

Exhibit 3.5

Sensitivity of results for Vancouver and Montreal to profitability assumption

Currency exchange, 100% international business activity

		Vancouver	Montreal
Revenue = cost + 17.6%	Index	79.0	79.8
	Rank	1	2
Revenue = cost + 40.0%	Index	75.3	78.0
	Rank	1	2

The change in profitability assumption improves the cost index of both Vancouver and Montreal, due to the cost index being based on the average costs in the seven US cities in each scenario. With the higher level of assumed profitability, income taxes become a more significant cost item for the more profitable operation, and lower effective tax rates in Canada than the US result in an improvement in cost index for both cities. This income tax issue fully explains Montreal's 1.8 percentage point improvement between the base scenario (17.6% mark-up) and the high-profit scenario, and partly explains the 3.7 percentage point improvement seen in Vancouver's cost index between the two scenarios.

More importantly, however, Vancouver's cost competitiveness relative to Montreal improves under the high-profit scenario. The increase in profitability of the operation results in a greater exposure to provincial income taxes, and causes Vancouver's cost advantage over Montreal to increase from 0.8 percentage points in the base scenario to 3.7 percentage points in the high-profit scenario. This sensitivity analysis demonstrates how the relative value of the provincial income tax rebate offered under British Columbia's International Business Activity program increases with business profitability.

3.3. Sensitivity to exchange rates

All analysis for this report has been prepared assuming parity between the Canadian and US dollars, reflecting the general level of exchange rates in late 2010/early 2011. Therefore, all dollar amounts in this report can be read as either Canadian or US dollars.

However, in recent years the Canadian dollar has shown some variation in its value relative to the US dollar, generally moving within the range of US$0.90 to US$1.10 per Canadian dollar. Exhibit 3.6 compares the cost results for all cities at each of these exchange rates, to assess the sensitivity of results to exchange rates.

Exhibit 3.6
Sensitivity of results to exchange rates
Currency exchange, 100% international business activity

	Vancouver	Montreal	Toronto	Boston	Chicago	Denver	Los Angeles	New York	San Francisco	Seattle
C$1 = US$0.90										
Index (US=100.0)	74.3	75.3	82.2	103.4	98.9	87.2	99.3	109.8	104.6	96.7
Rank	1	2	3	8	6	4	7	10	9	5
Dollars at par										
Index (US=100.0)	**79.0**	**79.8**	**87.8**	**103.4**	**98.9**	**87.2**	**99.3**	**109.8**	**104.6**	**96.7**
Rank	**1**	**2**	**4**	**8**	**6**	**3**	**7**	**10**	**9**	**5**
C$1 = US$1.10										
Index (US=100.0)	83.8	84.2	93.3	103.4	98.9	87.2	99.3	109.8	104.6	96.7
Rank	1	2	4	8	6	3	7	10	9	5

In Exhibit 3.6, the highlighted figures are those that have changed between the three exchange rate scenarios. The cost index results for the US cities do not change with exchange rate, due to the fact that the cost indices are calculated based on business costs expressed in US dollars.

As the value of the Canadian dollar changes relative to the US dollar, the cost results for the Canadian cities vary. If the Canadian dollar were to weaken such that one Canadian dollar buys only US$0.90, then the cost of operating in Vancouver, expressed in US dollar terms, decreases by 4.7 percentage points – widening Vancouver's existing lead over all US locations. At this exchange rate, the cost of operating in Toronto would drop below Denver, moving Toronto up to third in the ranking of cities.

If the Canadian dollar were to strengthen such that one Canadian dollar buys US$1.10, then the cost of operating in Vancouver, expressed in US dollar terms, increases by 4.8 percentage points. This would narrow Vancouver's existing lead relative to all US locations, but still leave Vancouver with a cost advantage of 3.4 percentage points relative to Denver – the lowest-cost city among the seven US cities examined. At this exchange rate, the ranking of cities is identical to that seen with the dollars at par.

Appendix A –

Detailed comparison report,
Main scenario – 25 person currency exchange firm
100% qualifying international business income

COMPETITIVE ALTERNATIVES.COM COST MODEL
DETAILED COMPARISON REPORT

OPERATION: CURRENCY EXCHANGE (USD$'000) **RUN DATE: 4/9/2011 2:50:13 PM, 0:00s ELAPSED**

City	Montreal	Toronto	Vancouve	Boston	Chicago	Denver	Los Ange	New York	San Fran	Seattle	Canada	United S
Region	QC	ON	BC	MA	IL	CO	CA	NY	CA	WA	Average	Average
Country	CA	CA	CA	US	US	US	US	US	US	US		
Included in national average	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
User-defined values applied	Y	Y	Y								Y	
Exchange rate, per USD$	C$1.0000	C$1.0000	C$1.0000	$1.0000	$1.0000	$1.0000	$1.0000	$1.0000	$1.0000	$1.0000	C$1.0000	$1.0000
Initial Investment												
Land	–	–	–	–	–	–	–	–	–	–	–	–
Buildings	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
Rank, land	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Rank, building	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Rank, total investment	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Cash	250	250	250	250	250	250	250	250	250	250	250	250
Inventory	–	–	–	–	–	–	–	–	–	–	–	–
Fixed assets	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850
	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Initial Financing												
Debt	–	–	–	–	–	–	–	–	–	–	–	–
Equity	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100

10-Year Average Business Costs

	Montreal	Toronto	Vancouve	Boston	Chicago	Denver	Los Ange	New York	San Fran	Seattle	Canada	United S
Location-sensitive costs												
Salary and wages	2,265	2,461	2,180	2,857	2,662	2,223	2,684	3,052	2,922	2,554	2,302	2,708
Statutory plans	156	127	82	199	200	173	200	210	208	196	122	198
Other benefits	521	572	479	864	805	685	828	923	901	787	524	828
Productivity adjustment	–	–	–	–	–	–	–	–	–	–	–	–
Total labor	2,942	3,160	2,741	3,920	3,667	3,081	3,712	4,185	4,031	3,537	2,948	3,733
Rank, salary	*3*	*4*	*1*	*8*	*6*	*2*	*7*	*10*	*9*	*5*	*1*	*2*
Rank, total labor	*2*	*4*	*1*	*8*	*6*	*3*	*7*	*10*	*9*	*5*	*1*	*2*
Facility lease	240	358	318	309	292	159	214	416	227	183	305	257
Rank, facility lease	*5*	*9*	*8*	*7*	*6*	*1*	*3*	*10*	*4*	*2*	*2*	*1*
Surface freight	–	–	–	–	–	–	–	–	–	–	–	–
Air freight	–	–	–	–	–	–	–	–	–	–	–	–
Total transportation	–	–	–	–	–	–	–	–	–	–	–	–
Rank, transportation	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Electricity	19	23	17	31	15	15	24	28	24	13	20	21
Gas	–	–	–	–	–	–	–	–	–	–	–	–
Total utilities	19	23	17	31	15	15	24	28	24	13	20	21
Rank, electricity	*5*	*6*	*4*	*10*	*2*	*2*	*7*	*9*	*7*	*1*	*1*	*2*
Rank, gas	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Total operating costs	3,201	3,541	3,076	4,260	3,974	3,255	3,950	4,629	4,282	3,733	3,273	4,012
Rank, operating costs	*2*	*4*	*1*	*8*	*7*	*3*	*6*	*10*	*9*	*5*	*1*	*2*

	Montreal	Toronto	Vancouve	Boston	Chicago	Denver	Los Ange	New York	San Fran	Seattle	Canada	United S
Interest	(60)	(53)	(55)	(55)	(53)	(50)	(53)	(57)	(54)	(56)	(56)	(54)
Depreciation	281	281	281	281	281	281	281	281	281	281	281	281
Total interest, depreciation	221	228	226	226	228	231	228	224	227	225	225	227
Sundry expenses	–	–	–	–	–	–	–	–	–	–	–	–
Income tax, national	169	146	134	362	350	318	343	386	362	371	150	356
Income tax, regional	(106)	100	–	90	77	44	98	84	103	–	(2)	71
Income tax, local	–	–	–	–	–	–	–	8	–	–	–	1
Capital tax, national	–	–	–	–	–	–	–	–	–	–	–	–
Capital tax, regional	–	–	–	–	2	–	–	–	–	–	–	–
Sales tax	–	–	–	94	122	115	146	145	146	157	–	132
Property tax	–	–	–	17	–	17	11	–	10	8	–	9
Gross receipts tax	–	–	–	–	–	–	–	–	–	116	–	17
Business tax	–	–	–	–	–	–	–	–	–	–	–	–
Grants, incentives	–	–	–	–	–	–	–	–	–	–	–	–
Total taxes (net of grants)	63	246	134	563	551	494	598	623	621	651	148	586
Total location-sensitive costs	3,485	4,015	3,436	5,049	4,753	3,980	4,776	5,476	5,130	4,609	3,645	4,825
Location-insensitive costs												
Materials	–	–	–	–	–	–	–	–	–	–	–	–
Other operating expenses	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Total location-insensitive costs	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Total costs	5,285	5,815	5,236	6,849	6,553	5,780	6,576	7,276	6,930	6,409	5,445	6,625
Overall rank	***2***	***4***	***1***	***8***	***6***	***3***	***7***	***10***	***9***	***5***	***1***	***2***
Overall cost index	***79.8***	***87.8***	***79.0***	***103.4***	***98.9***	***87.2***	***99.3***	***109.8***	***104.6***	***96.7***	***82.2***	***100.0***

Summary Measures

	Montreal	Toronto	Vancouve	Boston	Chicago	Denver	Los Ange	New York	San Fran	Seattle	Canada	United S
Net profit before income tax & grants	919	980	898	1,127	1,078	953	1,081	1,196	1,137	1,063	932	1,091
Effective income tax rate, net of grants	6.9%	25.1%	14.9%	40.1%	39.6%	38.0%	40.8%	40.0%	40.9%	34.9%	15.8%	39.2%
Rank	*1*	*3*	*2*	*8*	*6*	*5*	*9*	*7*	*10*	*4*	*1*	*2*
Property-based taxes per sq.ft.	–	–	–	$2.68	–	$2.58	$1.72	–	$1.54	$1.26	–	$1.40
Rank	*1*	*1*	*1*	*10*	*1*	*9*	*8*	*1*	*7*	*6*	*1*	*2*
Capital tax, % of total assets	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other taxes, % of sales	0.0%	0.0%	0.0%	1.3%	1.7%	1.8%	2.0%	1.8%	1.9%	3.8%	0.0%	2.0%
Stat. plans as a % of wages	6.9%	5.2%	3.8%	7.0%	7.5%	7.8%	7.5%	6.9%	7.1%	7.7%	5.3%	7.3%
Rank	*4*	*2*	*1*	*5*	*8*	*10*	*7*	*3*	*6*	*9*	*1*	*2*
Tax & benefit burden, % of income before taxes & benefits	46.4%	56.3%	47.6%	70.7%	70.5%	69.6%	71.8%	71.0%	72.0%	70.2%	50.1%	70.8%
Rank	*1*	*3*	*2*	*7*	*6*	*4*	*9*	*8*	*10*	*5*	*1*	*2*
Land, US$'000 per acre	–	–	–	–	–	–	–	–	–	–	–	–
Building, US$ per sq.ft.	$36.92	$55.08	$48.92	$47.54	$44.92	$24.46	$32.92	$64.00	$34.92	$28.15	$46.97	$39.56
Electricity, US¢ per kWh	7.86¢	9.64¢	7.04¢	13.10¢	6.35¢	6.06¢	10.12¢	11.62¢	10.12¢	5.26¢	8.18¢	8.94¢
Gas, US$ per 100 cu.ft.	–	–	–	–	–	–	–	–	–	–	–	–
Interest rate, debt	8.73%	8.73%	8.73%	8.51%	8.51%	8.51%	8.51%	8.51%	8.51%	8.51%	8.73%	8.51%
Interest rate, cash	1.15%	1.15%	1.15%	1.28%	1.28%	1.28%	1.28%	1.28%	1.28%	1.28%	1.15%	1.28%
NPV discount rate	8.73%	8.73%	8.73%	8.51%	8.51%	8.51%	8.51%	8.51%	8.51%	8.51%	8.73%	8.51%
NPV of cash flows (US$'M)	$4.98	$4.17	$4.36	$3.78	$3.63	$3.24	$3.54	$4.07	$3.76	$3.89	$4.50	$3.70
Rank	*1*	*3*	*2*	*6*	*8*	*10*	*9*	*4*	*7*	*5*	*1*	*2*
Total incentives: US$ per job, after estimated tax effects	$9,600	–	$3,560	–	–	–	($94)	–	($94)	–	$4,387	($27)