

# Competitive Alternatives

Focus on Tax  
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In association with:





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# 1. Executive summary

The purpose of this study is to assess the impact of the major tax changes announced in the 2009 Ontario Budget on the tax competitiveness of Ontario, as compared to key competing North American jurisdictions.

This study represents a limited-scope, partial update of the KPMG report: *Competitive Alternatives 2008: Focus on Tax*. Using the same methodology as that study, this report compares the total tax costs faced by corporations across the manufacturing, services and R&D sectors in Canada, the United States, and Mexico. The study compares 17 cities across five Canadian provinces (Ontario, Alberta, British Columbia, Manitoba, and Quebec), nine U.S. states (Georgia, Kentucky, Massachusetts, Michigan, New York, Ohio, Pennsylvania, Tennessee, and Texas) and one Mexican state (Nuevo Leon).

Tax costs compared in this report include corporate income, capital, sales, and property taxes, plus taxes and statutory costs applied on labour. Total tax costs are compared for two scenarios:

- **The 2009 Scenario** projects tax costs for a 10-year period from 2009 to 2018. Federal and state/provincial tax rates used in this scenario are those expected to be in effect each year based on legislation enacted and government announcements made before March 26, 2009 (the date of the 2009 Ontario budget).
- **The 2011 Scenario** projects tax costs for a 10-year period from 2011 to 2020. Federal and state/provincial tax rates used in this scenario are those expected to be in effect each year based on legislation enacted and government announcements made from March 26, 2009 to July 31 2009, including all changes announced in the 2009 Ontario budget.

Unless otherwise stated, this analysis assumes that the Canadian and U.S. dollars are at par, and that the exchange rate for Mexico is 10.87 pesos per dollar.

Key findings of this analysis are as follows:

- Across all sectors examined, the three Ontario cities – Waterloo Region, Toronto, and Ottawa – rank sixth, seventh, and eighth respectively among 17 cities in the 2009 Scenario. This reflects the situation before the tax changes announced in the 2009 Ontario budget.
- In the 2011 Scenario, the Ontario cities improve to fourth, fifth, and sixth places. Vancouver, Calgary and Montreal still have lower tax costs than the three Ontario cities. However the current gap between these groups of cities narrows. The three Ontario cities move ahead of both Winnipeg and Monterrey in Mexico, in the rankings, and their tax advantage relative to all the U.S. cities increases.
- For each of the services, R&D, and manufacturing sectors, among the 17 cities examined, the three Ontario cities see the greatest reductions in tax costs between the 2009 and 2011 Scenarios, with Ontario-based R&D and services firms seeing the greatest tax savings.
- These results include the replacement of

retail sales taxes in both Ontario and BC with refundable value-added taxes, but do not reflect the removal of embedded tax (tax compounded into the cost of goods at earlier stages of production). This change could further improve the relative tax competitiveness of Ontario.

This analysis incorporates tax changes announced up to July 31, 2009. Tax rates and rules for future years are subject to further changes as a result of new legislation, judicial rulings, and administrative pronouncements (not incorporated in this analysis). Exchange rates and other cost factors will change over time.

While care has been taken in performing this analysis and developing the findings, the results are of a general nature, are subject to the disclaimers in this report, and should not be used to draw conclusions regarding particular jurisdictions with respect to particular elements of taxation. KPMG LLP shall have no liability or responsibility to any third party who may use or place any reliance on our report. In all circumstances, professional advice should be sought to address any specific taxation issues.

## Total Tax Index Comparison, 2009 and 2011 Scenarios

(All industries, Canadian dollar at par, ranked according to 2011 Total Tax Index)

Rank in 2011	City	2009 Scenario Index (Rank)	Index Change (2009→2011)	2011 Scenario Total Tax Index
1	Vancouver, BC, CA	65.0 (2)	-6.2	<b>58.8</b>
2	Calgary, AB, CA	59.6 (1)	-0.4	<b>59.2</b>
3	Montreal, QC, CA	71.9 (3)	-0.5	<b>71.4</b>
4	Waterloo Region, ON, CA	81.4 (6)	-9.1	<b>72.3</b>
5	Toronto, ON, CA	82.5 (7)	-9.1	<b>73.5</b>
6	Ottawa, ON, CA	83.2 (8)	-9.1	<b>74.1</b>
7	Monterrey, NL, MX	75.7 (4)	0.1	<b>75.8</b>
8	Winnipeg, MB, CA	77.5 (5)	-0.3	<b>77.2</b>
9	Lexington, KY, US	93.2 (9)	0.0	<b>93.2</b>
10	Atlanta, GA, US	94.9 (10)	0.0	<b>94.9</b>
11	Youngstown, OH, US	95.7 (11)	0.0	<b>95.6</b>
12	Detroit, MI, US	98.4 (12)	0.0	<b>98.4</b>
13	Buffalo, NY, US	98.8 (13)	0.0	<b>98.8</b>
14	Nashville, TN, US	100.7 (14)	0.0	<b>100.7</b>
15	Philadelphia, PA, US	100.9 (15)	-0.1	<b>100.8</b>
16	Boston, MA, US	101.8 (16)	0.6	<b>102.3</b>
17	Houston, TX, US	103.1 (17)	0.0	<b>103.1</b>

## 2. Study background and methodology

### Study background

This study represents a limited-scope, partial update of the KPMG report: *Competitive Alternatives 2008: Focus on Tax*, which is part of KPMG's ongoing series of studies of international business locations. This study draws on data and methodology from two previous studies, and the reader is encouraged to consider the findings of this study in the context of these earlier works:

- *Competitive Alternatives 2008* compares total business costs in 136 cities and 10 countries, covering North America, Europe, and Asia Pacific. *Competitive Alternatives 2008* measures the combined impact of 27 significant business cost components (including taxes) that are most likely to vary by location.
- *Competitive Alternatives 2008: Focus on Tax* supplements the main *Competitive Alternatives 2008* study and further analyzes the tax competitiveness of the countries and major cities included in *Competitive Alternatives 2008*.

Additional background information on these two earlier studies can be found in Appendix C, or on the *Competitive Alternatives* study website at: [www.CompetitiveAlternatives.com](http://www.CompetitiveAlternatives.com).

This partial update has been prepared by KPMG on behalf of the Ontario Ministry of Finance. The objective of this limited-scope update is to assess changes in the relative tax competitiveness of Ontario in 2009 and 2011, as compared to competing North American jurisdictions. This analysis has been designed to assess the impact on Ontario's tax competitiveness of several major tax changes announced in the 2009 Ontario budget (as described in Chapter 3).

### Measuring tax costs

Using the same methodology as the earlier *Competitive Alternatives 2008: Focus on Tax* study, this report compares the total tax costs faced by companies in each location.

Total tax costs of locations are compared using a Total Tax Index (TTI). The TTI is a measure of the total taxes paid by corporations in a particular location and industry, expressed as a percentage of total taxes paid by similar corporations in the United States. Thus the United States has a TTI of 100.0, and is the benchmark against which other locations are scored.

This study compares a number of model business operations to assess the average annual tax costs faced by these businesses during their first 10 years of operation. The model businesses are assumed to be foreign-owned and newly located in each jurisdiction, giving rise to potential incentives for investment and/or new job creation. Generally available incentive programs in each jurisdiction are included in this study.

The three major tax components analyzed in this study are as follows:

- **Corporate income tax (CIT):** Companies are assumed to have a standard level of net income before income tax, in US\$, in all locations. In this way, income taxes paid can be compared among locations in absolute dollars and as effective rates.
- **Other corporate taxes (OCT):** Other corporate taxes include capital taxes, sales taxes, property taxes, and miscellaneous business taxes. These taxes are based on actual business costs incurred by each model business in each location.
- **Statutory labour costs (SLC):** These costs include both statutory plan costs and other wage-based taxes and are calculated based on the rates and rules of each jurisdiction, applied to actual wage and salary levels for that jurisdiction.

In calculating taxes, the study includes taxes levied by all levels of government (national, regional, and local), and reflects specific tax rules for each jurisdiction (see Chapter 4).

Labour, property, and other taxes not based on income are calculated to reflect actual business costs in each location, using international business cost data from KPMG's *Competitive Alternatives 2008* study. For example, statutory labour costs are calculated based on Canadian wage rates in Canada, U.S. wage rates in the United States, and Mexican wage rates in Mexico, using the contribution rates and rules of the various statutory programs in each country to reflect actual costs incurred by companies operating in each country. Similarly, property taxes are also calculated based on actual property values and assessment rules in each location.

In addition to the TTI, this study calculates the Total Effective Tax Rate (TETR), which expresses total tax costs as an effective rate, rather than as an index of taxes actually paid. This approach makes it possible to explore the specific tax components that drive these results. TETR is the sum of the effective corporate income tax rate (net of incentives), the effective rate of other corporate taxes, and the effective rate of other statutory labour costs.

TETR expresses total tax costs as a percentage of standardized net income before income taxes, which is a fixed-dollar (U.S.) amount in all locations. The use of a fixed-dollar amount of net income before income taxes in all locations allows income taxes paid to be compared in dollar terms. This approach also allows other corporate taxes and statutory labour costs (which are not calculated based on income) to be compared in percentage terms.

Rankings obtained using TETR are the same as those obtained using the TTI. Using the formula for TETR, it is possible for TETR to exceed 100 percent. This result does not mean that government taxes are forcing a company into a net loss situation. Because only income taxes are excluded from net income in the calculation, TETR can exceed 100 percent while the company still maintains a positive net income after tax.

For further details, including a numerical example of how TTI and TETR are calculated, see Appendix C.

## Study scenarios

This analysis incorporates changes announced up to July 31, 2009 that take effect in 2009 or at specified later dates. Using this information, two separate time-based scenarios have been analyzed:

- **The 2009 Scenario** projects tax costs for a 10-year period from 2009 to 2018. Federal and state/provincial tax rates used in this scenario are those expected to be in effect each year based on legislation enacted and government announcements made before March 26, 2009 (the date of the 2009 Ontario budget).
- **The 2011 Scenario** projects tax costs for a 10-year period from 2011 to 2020. Federal and state/provincial tax rates used in this scenario are those expected to be in effect each year based on legislation enacted and government announcements made from March 26, 2009 to July 31 2009, including all changes announced in the 2009 Ontario budget.

Both scenarios use a common set of data for municipal tax rates, based on the most recent announced rates for each municipality as at the end of August 2009. A common set of municipal tax data is used for both scenarios, as municipalities generally do not announce multi-year tax plans in the same manner that senior governments do.

Full details of the specific tax rates applied for corporate income tax and other corporate taxes in each jurisdiction in this study are set out in Appendix D of this report.

For each of the 2009 and 2011 Scenarios, two separate exchange rate scenarios are also compared:

- **The Dollar-at-Par Scenario** assumes the Canadian and U.S. dollars to be at par, consistent with the assumption used in *Competitive Alternatives 2008: Focus on Tax*. This assumption represents the approximate upper end of the Canadian dollar's trading range over the last year. The Dollar-at-Par Scenario is the default exchange rate scenario used in this report, and unless otherwise stated, the analysis presented is based on the Canadian and U.S. dollars being at par. The equivalent exchange rate for Mexico is 10.87 pesos per U.S. or Canadian dollar.
- **The 80-Cent Scenario** examines how tax burdens differ if the Canadian dollar is valued at 80 U.S. cents. This represents the approximate lower end of the Canadian dollar's trading range over the last year. The impact of the 80-Cent Scenario is assessed in Chapter 6.

## Selection of cities

The 17 cities compared in this study were selected by the Ontario Ministry of Finance from among the larger of the 102 cities analyzed in the prior *Competitive Alternatives 2008: Focus On Tax* study.

Three Ontario cities (Toronto, Waterloo Region and Ottawa) were chosen for comparison against four other major Canadian cities (Calgary, Montreal, Winnipeg, and Vancouver).

In the United States, cities were selected in each of nine U.S. states, as follows:

- One city was selected in each of the four states bordering southern Ontario (New York, Pennsylvania, Ohio and Michigan), which are major competitors with Ontario for investment.

- Lexington, Kentucky and Nashville, Tennessee, were selected as these regions have become major automobile production centres.
- Houston, Texas was selected as a major centre for the petrochemical industry.
- Boston, Massachusetts, was selected as a major centre for R&D activities.
- Atlanta, Georgia was selected as it is one of the lowest-cost major cities in the United States, as reported in KPMG's *Competitive Alternatives 2008*.

One Mexican city, Monterrey, was selected as it has a diversified manufacturing base and emerging clusters in biotechnology and aerospace.

## Limitations on the interpretation of results

This analysis is based on information collected primarily in August and September 2009 and incorporates changes announced up to July 31, 2009 that take effect in 2009 or at specified later dates. Tax rates and other tax-related information are subject to further change as a result of new legislation, judicial decisions, and administrative pronouncements (not incorporated in this analysis). Exchange rates and other cost factors will change over time.

While care has been taken in performing this analysis and developing the findings, the resulting comparisons are of a general nature. All factors examined in this study are subject to change over time. The results of this study should not be used to draw conclusions regarding particular jurisdictions with respect to particular elements of taxation, or regarding the merits of locating any specific facility in one jurisdiction over another. KPMG LLP shall have no liability or responsibility to any third party who may use or place any reliance on our report. In all circumstances, professional advice should be sought to address any specific taxation or facility location issues.

### 3. Total tax costs: 2008 to 2011

The table below compares the Total Tax Index results for the three Ontario cities and 14 competing North American locations for the 2009 and 2011 Scenarios, and compares these results to the results in *Competitive Alternatives 2008: Focus on Tax*.

#### Trends: 2008 to 2009

Between 2008 and 2009, the TTI for each of the three Ontario cities decreased by between 2.9 and 4.4 points – representing a reduction in total tax costs relative to the U.S. average. In the same time period, only three of the 10 cities examined outside of Canada saw their TTI improve by 1.0 points or more (Youngstown, Philadelphia, and Houston). Therefore, the three Ontario cities improved their tax competitiveness relative to their U.S. and Mexican counterparts over the past year.

However, over the same time period, the three Ontario cities lost ground relative to Calgary, Vancouver and Montreal, which all saw larger decreases in their total tax costs between 2008 and 2009 (from 9.7 to 11.3 points). These savings were primarily due to provincial tax rate cuts for Vancouver and the introduction of new tax incentives in Calgary and Montreal.

As a result, the ranking of the three Ontario cities did not improve between 2008 and 2009 and, despite some reduction in their total tax burdens, the Ontario cities continue to rank behind Calgary, Vancouver, Montreal, Monterrey and Winnipeg in 2009.

To improve Ontario's tax competitiveness, the 2009 Ontario budget announced a number of changes, as discussed in the following section.

#### Trends: 2009 to 2011

In summary, the major corporate tax changes announced in the 2009 Ontario budget include:

- A reduction in the corporate income tax rate from 14 to 10 percent by July 2013 for general corporations, and from 12 to 10 percent for manufacturers on July 1, 2010.
- A reduction in the corporate minimum tax rate to 2.7 percent (from 4.0 percent), and an increase in revenue and asset thresholds to exempt more companies from this tax.
- An increase in the income threshold for the Ontario Innovation Tax Credit, to increase the number of companies that can qualify for this credit.

#### Total Tax Index Comparison, 2008 – 2011

(All industries, Canadian dollar at par, ranked according to 2011 Total Tax Index)

Rank in 2011	City	2008 Study Index & (Rank)	Index Change (2008→2009)	2009 Scenario Index & (Rank)	Index Change (2009→2011)	2011 Scenario Total Tax Index
1	Vancouver, BC, CA	75.2 (2)	-10.2	65.0 (2)	-6.2	<b>58.8</b>
2	Calgary, AB, CA	69.3 (1)	-9.7	59.6 (1)	-0.4	<b>59.2</b>
3	Montreal, QC, CA	83.2 (5)	-11.3	71.9 (3)	-0.5	<b>71.4</b>
4	Waterloo Region, ON, CA	84.8 (6)	-3.3	81.4 (6)	-9.1	<b>72.3</b>
5	Toronto, ON, CA	85.4 (7)	-2.9	82.5 (7)	-9.1	<b>73.5</b>
6	Ottawa, ON, CA	87.6 (8)	-4.4	83.2 (8)	-9.1	<b>74.1</b>
7	Monterrey, NL, MX	75.4 (3)	0.3	75.7 (4)	0.1	<b>75.8</b>
8	Winnipeg, MB, CA	80.5 (4)	-3.0	77.5 (5)	-0.3	<b>77.2</b>
9	Lexington, KY, US	93.0 (9)	0.2	93.2 (9)	0.0	<b>93.2</b>
10	Atlanta, GA, US	95.1 (10)	-0.2	94.9 (10)	0.0	<b>94.9</b>
11	Youngstown, OH, US	97.1 (11)	-1.4	95.7 (11)	0.0	<b>95.6</b>
12	Detroit, MI, US	98.6 (12)	-0.2	98.4 (12)	0.0	<b>98.4</b>
13	Buffalo, NY, US	98.9 (13)	-0.1	98.8 (13)	0.0	<b>98.8</b>
14	Nashville, TN, US	100.6 (14)	0.2	100.7 (14)	0.0	<b>100.7</b>
15	Philadelphia, PA, US	101.9 (15)	-1.0	100.9 (15)	-0.1	<b>100.8</b>
16	Boston, MA, US	102.1 (16)	-0.3	101.8 (16)	0.6	<b>102.3</b>
17	Houston, TX, US	104.1 (17)	-1.1	103.1 (17)	0.0	<b>103.1</b>

- Sales tax reform, to replace the existing eight-percent non-refundable retail sales tax with an eight-percent refundable sales tax harmonized with the federal GST system as of July 1, 2010. Businesses with taxable sales over CDN \$10 million will not be able to claim input tax credits for provincial taxes paid on energy, certain telecommunication services, road vehicles, food, beverages, and entertainment for five years, after which claims for input tax credits for these items will be phased in over three years.

The impact of these changes for Ontario can be seen in the results for the 2011 Scenario. However, these are not the only tax changes scheduled to occur between the 2009 and 2011 Scenarios. Other major tax changes reflected in the 2011 Scenario include:

- British Columbia's announcement that it will also change its non-refundable sales tax to a refundable sales tax harmonized with the federal GST system (similar to Ontario, but at a provincial rate of seven percent).
- Ongoing reductions in the Canadian federal corporate income tax rate, as well as the BC, Manitoba, and Massachusetts corporate income tax rates.
- The final phase-out of capital taxes for general corporations in Manitoba, Ontario, Quebec, Ohio, and Pennsylvania.
- A sales tax increase in Massachusetts.
- The final phase-in of Mexico's new Flat Business Tax (IETU) and Ohio's new Commercial Activity Tax on gross receipts.

After allowing for these announced changes, between 2009 and 2011, the three Ontario cities are expected to experience the greatest reduction in total tax costs among the 17 cities analyzed. The Ontario cities are expected to see their TTIs decrease by 9.1 points. This change is sufficient to rank the Ontario cities ahead of Monterrey and Winnipeg, and very close to the level of total tax costs in Montreal.

Vancouver is the other city that is expected to significantly reduce its total tax burden between 2009 and 2011 as a result of British Columbia's decision to follow Ontario's shift to a refundable sales tax in 2010, combined with a modest corporate income tax rate reduction (from 11 to 10 percent) by 2011.

These results should be interpreted subject to the following disclaimers:

- These results are based on tax changes announced up to July 31, 2009. Ontario, and/or other jurisdictions may announce further tax changes in years relevant to the 2011 Scenario that could change these results. For example, in late September 2009 the Mexican Congress began debating an increase to both corporate income tax rates and GST rates to deal with that country's growing budget deficit. This potential change was announced too late for inclusion in this analysis.

- These results include the replacement of non-refundable retail sales taxes in both Ontario and BC with refundable value-added taxes. However, the results do not reflect the removal of embedded retail sales tax (tax compounded into the cost of goods at earlier stages of production). This change could further improve the relative tax competitiveness of Ontario.
- These results reflect the "all industries" results for a variety of different business sectors and specific industries. Results for specific sectors and industries vary from these overall results. Summary results by sector and industry are set out in Chapter 5. Detailed results for all sectors analyzed are set out in Appendix A.

## 4. Components of total tax costs

The Total Effective Tax Rate provides the advantage that it can be broken out into three core components that comprise a corporation's total tax cost:

- Effective corporate income tax rate.
- Effective rate of other corporate taxes (such as capital, property, sales and miscellaneous local taxes).
- Effective rate of statutory labour costs (representing the employer portion of required pension, unemployment, medical plan, or workplace injury insurance, or other similar plan or tax payments).

The chart below presents the TETR for the 17 cities for the 2009 Scenario (with the Canadian dollar at par) and details the effective rates for three core components: corporate income taxes, other corporate taxes, and statutory labour costs.

The importance of these tax components varies among the jurisdictions:

- Corporate income taxes represent the largest component of total tax costs. Montreal (16.0 percent), Calgary (18.8 percent) and Winnipeg (19.5 percent) have the lowest effective corporate income tax rates. At the other end of the scale, Lexington (35.7 percent) and Boston (37.4 percent) have the highest effective corporate income tax rates.
- Other corporate taxes represent the smallest component of total tax costs. Monterrey (2.7 percent), Lexington (3.9 percent) and Calgary (5.2 percent) have the lowest burdens for other corporate taxes, while Ottawa (10.6 percent) and Winnipeg (11.4 percent) have the highest burdens for these taxes.

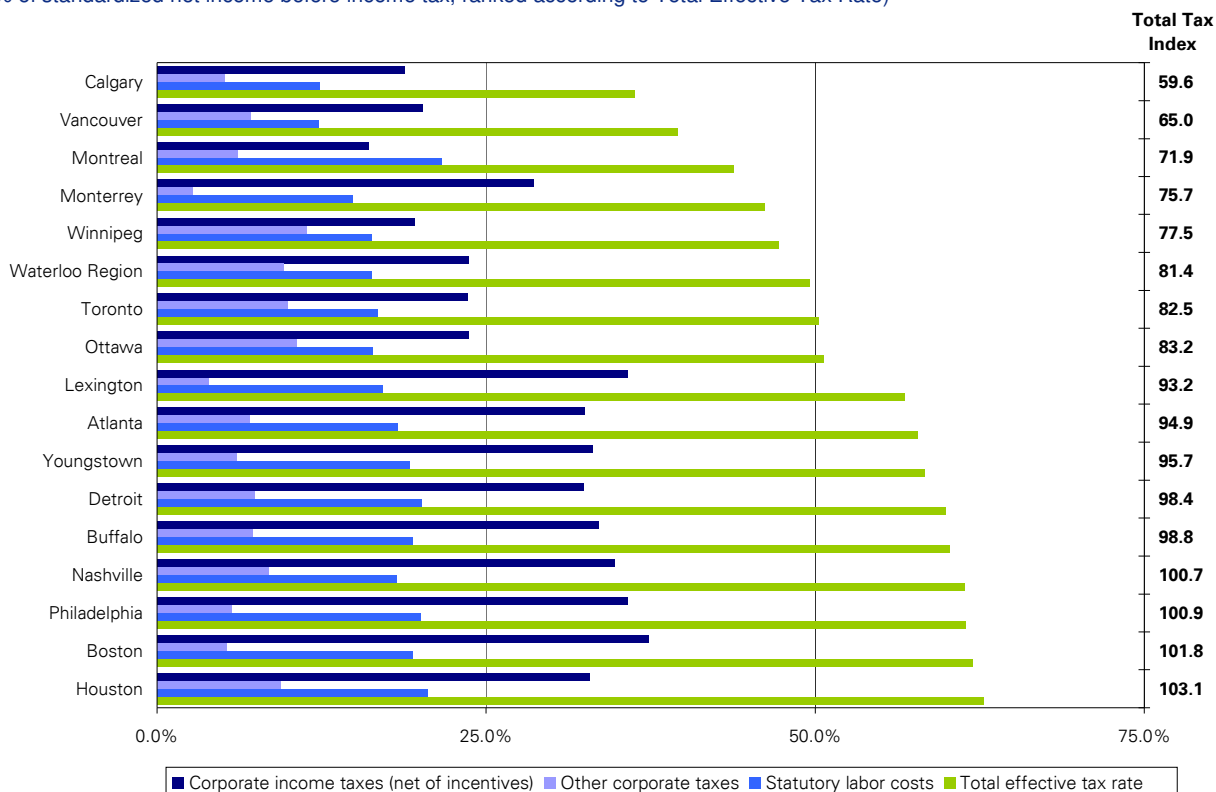
- Statutory labour costs vary only modestly among the 17 locations examined as many of these statutory costs arise from federal plans. The burden for statutory labour costs is lowest in Vancouver and Calgary (both 12.3 percent), followed by Monterrey (14.9 percent). Statutory labour costs are highest in Houston (20.6 percent) and Montreal (21.6 percent).

Overall, Calgary (36.3 percent), Vancouver (39.6 percent) and Montreal (43.8 percent) offer the lowest TETRs, while total taxes are highest in Boston (62.0 percent) and Houston (62.8 percent).

The equivalent chart for the 2011 Scenario on page 7 highlights the changes in tax components for Ontario and other jurisdictions between 2009 and 2011.

### Effective Corporate Tax Rates – 2009 Scenario, All Industries, Canadian dollar at par

(% of standardized net income before income tax, ranked according to Total Effective Tax Rate)



The results for the Ontario cities in the 2011 Scenario are as follows:

- The three cities move up in the rankings, moving ahead of Monterrey and Winnipeg and close to Montreal.
- The planned reduction in Ontario corporate income tax causes the effective corporate income tax rate for the Ontario cities to decline from approximately 23.7 percent in 2009 to approximately 20.8 percent in 2011.
- The changes in Ontario’s sales tax system, together with the elimination of Ontario’s capital tax, also decrease the effective rate of other corporate taxes for the Ontario cities – from approximately 10.0 percent in 2009 to approximately 7.3 percent in 2011. These changes have a greater impact for services and R&D operations than for manufacturing firms.

- The effective rate of statutory labour costs remains unchanged for the three Ontario cities, at approximately 16.5 percent in both 2009 and 2011.

Regarding the other jurisdictions, the only significant change is for Vancouver, which sees its effective rate for other corporate taxes cut almost in half – from 7.1 percent in 2009 to 3.7 percent in 2011, due to BC’s proposed sales tax reforms.

Other relatively minor changes include:

- A drop in the effective corporate income tax rate of approximately 0.3 percent for all Canadian cities, due to ongoing planned reductions in the federal corporate income tax rate.

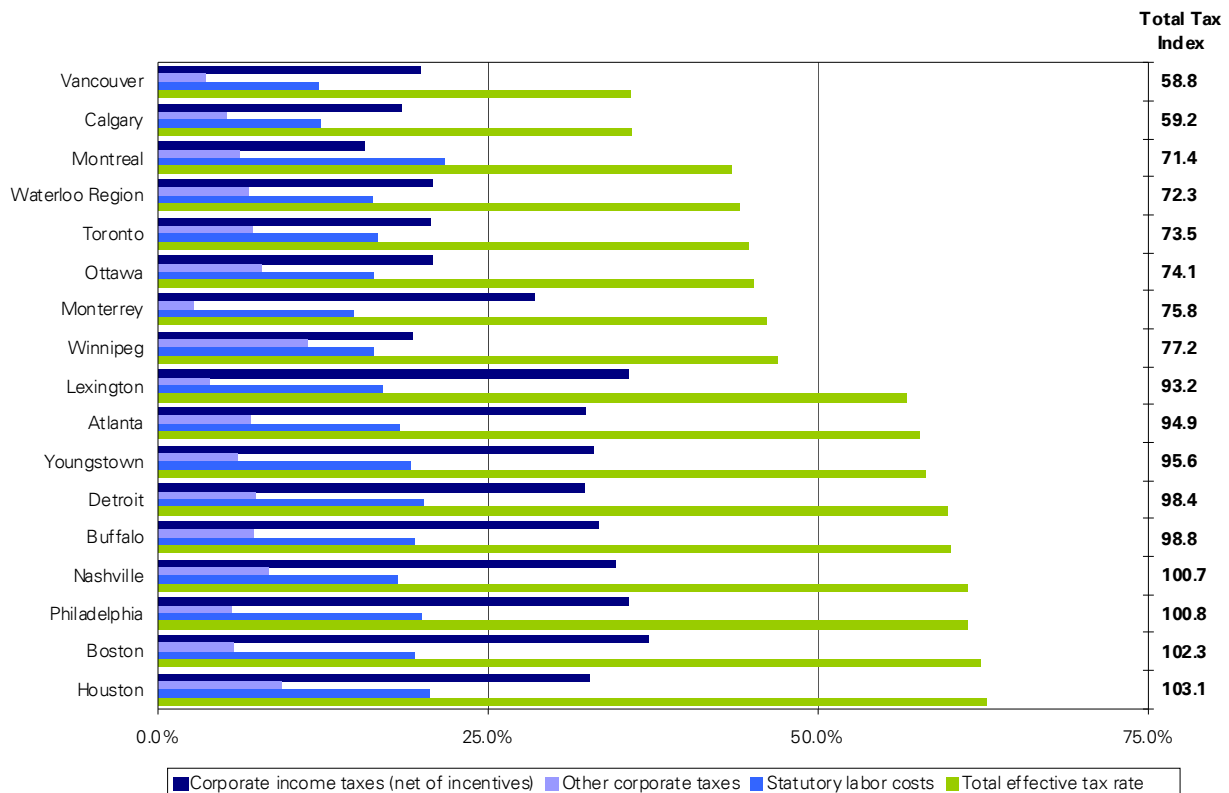
- A minor 0.2 percent decrease in the effective corporate income tax rate for Boston, which is more than offset by an increase in the effective rate of other corporate taxes (by 0.5 percent), as Massachusetts trims its corporate income tax rate over the coming years but raises its sales tax rate.

## Income taxes

Income taxes are considered in this study for all levels of government – federal corporate income taxes in all three countries, state/provincial corporate income taxes in the United States and Canada, and local income taxes in relevant U.S. municipalities.

The income tax calculation process begins by determining the actual base to which tax rates will be applied:

**Effective Corporate Tax Rates – 2011 Scenario, All Industries, Canadian dollar at par**  
(% of standardized net income before income tax, ranked according to Total Effective Tax Rate)



- In recent years, a growing number of U.S. states (including Michigan, Ohio, and Texas) have reformed their tax systems and are now taxing gross receipts (with limited deductions) instead of net income. These taxes may give rise to a tax liability even if a company is in a net loss position.
- Even for jurisdictions taxing net income, many adjustments to net income may need to be made when determining taxable income. These adjustments can include depreciation, deductibility of taxes paid, bad debts, provisions, asset sales, and dividend distributions.

Once taxable income has been determined, gross income tax can be calculated, whether using flat tax rates (Canada and Mexico) or marginal tax rates (United States). Minimum taxes also need to be considered in the calculation of gross income tax where relevant (Ontario, the U.S., and Mexico).

Following the calculation of gross tax, income tax credits need to be factored in to the analysis of net income tax costs.

Examples of such credits are as follows:

- Many jurisdictions offer R&D tax credits, which are discussed in Chapter 5.
- In the United States, most states offer some form of income tax credit for new investment and/or job creation to help stimulate economic development. Some Canadian jurisdictions also offer economic development tax incentives. The scope of this study includes significant, commonly available tax credit programs with clearly defined eligibility criteria, but does not include discretionary or negotiated tax credits.
- In jurisdictions which have minimum tax rules, minimum tax paid in previous years may also give rise to credits that can offset future income tax.

All of these issues need to be considered to effectively compare corporate income tax burdens between jurisdictions, and they have been considered in this study.

## Other corporate taxes

The other corporate taxes considered in this study include capital taxes, sales taxes, property taxes, and miscellaneous local business taxes. The study disregards immaterial taxes where the estimated cost to a business is less than U.S.\$1,000 per year.

Capital taxes apply as follows:

- In Canada, the provinces of Manitoba, Ontario and Quebec still impose capital taxes on general corporations, although manufacturers are exempt from capital tax in all three provinces. These provinces are phasing out their capital taxes by 2011 for all general corporations.
- In the United States, capital taxes (in various forms) apply in six of the nine states examined.

Property-based taxes apply in all cities studied, although the applicable categories of assets, tax rates, and tax bases vary between locations. In this study, property taxes were calculated based on actual local tax rates and real estate values in each city, adjusted where required to reflect the property assessment method for each location. Property taxes on real estate are included in this study as follows:

- For manufacturing operations (which we assume own their own facilities), property taxes are included in this analysis.
- For service operations (which we assume use leased office space), property-based taxes are included only where the tax is levied directly on the occupant of a premises, rather than the property owner (landlord). In *Competitive Alternatives 2008*, taxes passed on by a landlord to a tenant were captured as part of total office leasing costs, but they were not separately identified and cannot be included in this study.

Sales and transaction taxes come in various forms in different jurisdictions, and affect companies differently:

- Gross receipts taxes apply in a small but growing number of jurisdictions in the United States, either instead of, or in addition to, state or local income taxes.
- Non-refundable sales taxes currently apply in all U.S. states examined, and in British Columbia, Manitoba, and Ontario. Where non-refundable sales taxes apply, exemptions are generally available for many of the costs incurred by a manufacturer to avoid the compounding of taxes in the price of goods at each stage of production. In 2009, Ontario and British Columbia announced plans to reform their sales taxes and change to refundable value-added sales taxes in 2010.
- Refundable value-added taxes (GST, VAT, or IVA in Mexico) currently apply federally in both Canada and Mexico, and provincially in Quebec. From July 2010, Ontario and British Columbia will also levy GST-style taxes, harmonized with the federal GST system. For this analysis, value-added taxes are excluded, since their refundable nature means there is no net cost to a business once input tax credits (refunds) have been claimed. Although these taxes impose a cost on companies in terms of cash flow timing and administration, such costs are not considered material to this study.

See page 9 for a specific example of how the sales tax changes in Ontario may affect commercial and industrial construction costs.

## Statutory labour costs

All jurisdictions studied levy a variety of charges and taxes on payroll, which we refer to collectively as statutory labour costs. These costs generally relate to specific statutory plans, such as social security, medical care, unemployment insurance, and/or workplace injury insurance.

## Example of Sales Tax Costs on Industrial Construction in Ontario

	<b>RST (2009)</b>	<b>HST (2011)</b>
Size of facility (square feet)	100,000	100,000
Per square foot cost of construction (exc. tax) <sup>1</sup>	\$80	\$80
Total construction cost (exc. tax)	\$8,000,000	\$8,000,000
Assumed allocation between <sup>2</sup> :		
- Materials	50%	50%
- Labour	50%	50%
Applicable sales tax rates:		
- Refundable taxes:		
- Federal GST	5%	5%
- Ontario HST	-	8%
- Non-refundable taxes:		
- Ontario RST	8%	-
Sales taxes paid:		
- Federal GST		
- Materials	\$200,000	\$200,000
- Labour	\$200,000	\$200,000
- Ontario RST or HST		
- Materials	\$320,000	\$320,000
- Labour	exempt	\$320,000
	\$720,000	\$1,040,000
- Less: refundable input tax credits claimed	(\$400,000)	(\$1,040,000)
<b>Net sales tax cost</b>	<b>\$320,000</b>	-
<b>Total construction cost (inc. tax)</b>	<b>\$8,320,000</b>	<b>\$8,000,000</b>
<b>Effective sales tax rate on construction</b>	<b>4%</b>	-

1. Average cost of industrial construction for Toronto, per *Competitive Alternatives 2008, KPMG's Guide to International Business Location*.
2. Actual allocation between materials and labour varies based upon the type of construction, but is broadly estimated by various sources to range between 40% - 60% of total construction costs in each of materials and labour. A split of 50:50 is assumed for this example.

## Sales tax on construction

One element of the proposed sales tax reform in Ontario (and British Columbia) not captured in the TTI analysis is the effect of sales taxes on industrial and commercial construction. These tax costs are typically capitalized as part of the cost of the building, and are not reflected in the annual tax costs used to calculate TTI. However, these costs can be significant at the start-up stage of a business and they can influence a location's overall cost competitiveness for business.

The table to the left provides a summary example of how construction costs in Ontario are affected by the planned changes in sales taxes. The left column reflects the current situation, where the refundable federal five-percent GST applies to both materials and labour, while the non-refundable Ontario eight-percent Retail Sales Tax (RST) applies only to materials. The right column reflects the planned situation in 2011, when the refundable Harmonized Sales Tax will have replaced the RST.

Assuming that material costs comprise approximately half of total construction costs, non-refundable RST on materials currently adds a premium of approximately four percent to the total cost of industrial or commercial construction. Following the introduction of the HST in July 2010, the gross sales taxes paid on construction will increase (from \$720,000 to \$1,040,000 for this sample building), but since the HST is fully refundable, the net sales tax cost drops to zero after input tax credits have been claimed. This change in sales tax will lower the cost of industrial and commercial construction in Ontario compared to jurisdictions that continue to impose non-refundable sales taxes.

## 5. Taxes by industry

Tax burdens differ between industries due to a wide variety of tax impacts. This study compares total tax costs across three broad industry sectors – manufacturing, services and R&D – and across a range of individual industries. The effects of expected tax changes between 2009 and 2011 also vary among industries.

### Manufacturing

The TTI for manufacturing operations – based on an average of seven individual manufacturing operations – are presented in the table below. The three Ontario cities examined – Waterloo Region, Toronto and Ottawa – all have total tax costs lower than any of the U.S. cities examined, in both the 2009 and in 2011 Scenarios.

The three Ontario cities show the largest improvement in TTI between the 2009 and 2011 Scenarios. However, when compared to the services and R&D sectors (discussed below), Ontario manufacturers see the smallest reduction in future total tax burden among the three major sectors examined:

- Manufacturers stand to benefit from Ontario’s planned reduction in corporate income tax rates – but to a lesser extent than other industries due to the preferential corporate income tax rate already available to manufacturers.
- Manufacturers also stand to benefit from the sales tax reform – but again to a lesser extent than other industries due to existing sales tax exemptions for manufacturing machinery and materials used in production.

As a result, the reduction in TTI for manufacturers in Ontario between 2009 and 2011 is estimated at 6.6 percentage points, as compared to an average of 9.1 percentage points across all industries.

Manufacturing operations are typically characterized by relatively high levels of investment in land, buildings, machinery, equipment, and inventories, many or all of which may be subject to property taxes in different jurisdictions. Manufacturers also tend to have high costs related to materials, utilities, and transportation, which may attract sales taxes in some jurisdictions. As a result, non-income-based taxes tend to be more significant in the manufacturing sector than in other sectors.

Wages and benefits tend to be relatively less significant in the manufacturing sector than in other industry sectors, simply because labour costs’ share of total costs is diminished by process inputs and capital costs. As a result, statutory labour costs tend to be a less significant factor in the manufacturing sector than in other sectors.

The different effects of these individual tax components can also result in varying total tax burdens even among specific manufacturing industries. The manufacturing results presented below are based on average results for seven individual manufacturing industries, as follows:

- Chemical products
- Electronics assembly
- Food processing
- Metal machining
- Pharmaceutical production
- Plastic products
- Precision component manufacturing

In addition to these seven industries, this study also examines tax costs in three additional manufacturing industries of importance to the Ontario economy:

- Aerospace
- Auto parts
- Telecom equipment

**Total Tax Index Comparison, Manufacturing, 2009 and 2011 Scenarios**  
(Canadian dollar at par, ranked according to 2011 Total Tax Index)

Rank in 2011	City	2009 Scenario Index (Rank)	Index Change (2009→2011)	2011 Scenario Total Tax Index
1	Vancouver, CA	71.0 (2)	-4.9	<b>66.2</b>
2	Calgary, CA	67.5 (1)	-0.3	<b>67.2</b>
3	Monterrey, MX	72.4 (3)	0.1	<b>72.5</b>
4	Waterloo Region, CA	87.3 (6)	-6.6	<b>80.7</b>
5	Winnipeg, CA	81.8 (4)	-0.1	<b>81.7</b>
6	Toronto, CA	88.8 (7)	-6.6	<b>82.2</b>
7	Ottawa, CA	90.1 (8)	-6.6	<b>83.4</b>
8	Montreal, CA	87.3 (5)	-0.2	<b>87.1</b>
9	Lexington, US	90.8 (9)	0.0	<b>90.7</b>
10	Atlanta, US	95.2 (10)	0.0	<b>95.2</b>
11	Buffalo, US	96.8 (11)	0.0	<b>96.8</b>
12	Youngstown, US	97.0 (12)	0.0	<b>97.0</b>
13	Philadelphia, US	98.9 (13)	0.0	<b>98.9</b>
14	Nashville, US	99.1 (14)	0.0	<b>99.2</b>
15	Detroit, US	99.9 (15)	0.0	<b>99.9</b>
16	Boston, US	102.0 (16)	0.3	<b>102.3</b>
17	Houston, US	103.1 (17)	0.0	<b>103.1</b>

The table below compares the 2011 TTI results for the 17 cities across all 10 of these manufacturing industries. For a number of cities, the differences between industries are modest – either with little variation in ranking (as is the case for Calgary and Vancouver) or little change in the absolute TTI (as is the case for Atlanta, Houston, Detroit and Lexington).

For other cities, including the three Ontario cities, the degree of variation in TTI and ranking between industries is much greater. For the Ontario cities, the table below highlights in green where the ranking for a specific industry equals or better than that city's ranking in the manufacturing average, while blue highlights industries where the city's ranking is below the manufacturing average.

Waterloo Region's ranking falls below its average mark in six of ten industries, largely due to its close ranking with other cities, resulting in marginal changes in rank.

Looking at the three Ontario cities together, there are two industries in which all three cities rank below their respective average marks – metal machining and plastic

products – due to two characteristics in the model operations for these two industries:

- No spending on R&D, such that the model operations do not benefit from federal and provincial R&D incentives
- Relatively larger facility requirements, such that the model operations have higher property tax costs – which is an issue for Ontario since it has both higher than average property values and higher than average property tax rates relative to the group of cities compared.

The equivalent table for the 2009 Scenario is set out in Appendix B.

## Services

The TTI for general services operations are presented in the table on page 12. These results are based on a model business services operation that provides centralized accounting, IT and call centre services.

The three Ontario cities (as highlighted) see their greatest improvement between 2009 and 2011 in the services sector, and all have

total tax costs lower than any of the U.S. cities examined in 2011. The improvements in TTI and in tax competitiveness seen by the Ontario cities is much greater for services than for manufacturing due to the existing corporate income tax, sales tax and capital tax preferences for manufacturers in Ontario. The major factor accounting for the large TTI improvement for Ontario services firms is the planned sales tax reform, with the elimination of the corporate capital tax also improving the TTI.

Compared to manufacturing, services operations tend to be more affected by statutory labour costs (due to the high significance of labour costs for services firms) and less affected by other corporate taxes. Service operations are assumed to be renting office space, and property taxes levied on landlords and passed on through rent are not captured in this comparison. However, taxes levied directly on business occupants are captured in the analysis. Finally, taxes on equipment and capital are much less significant than for manufacturing, as lower levels of both are employed.

### Total Tax Index Comparison, By Manufacturing Industry, 2011 Scenario

(Canadian dollar at par)

City	Total Tax Index & (Rank)										
	Mfg Avg	Aero space	Auto parts	Chem Products	Elect ronics	Food Process.	Metal Machine	Pharma	Plastic Products	Precision Comp.	Telecom Equip.
Calgary	67.2 (2)	64.6 (2)	67.7 (1)	57.2 (1)	66.5 (2)	69.9 (2)	77.3 (2)	61.3 (2)	76.3 (3)	62.3 (1)	47.4 (2)
Montreal	87.1 (8)	93.9 (9)	91.1 (8)	75.3 (6)	86.6 (8)	87.2 (8)	100.0 (12)	75.8 (8)	99.0 (11)	92.4 (8)	68.6 (7)
Ottawa	83.4 (7)	85.6 (7)	89.7 (7)	75.8 (7)	84.1 (7)	81.6 (6)	95.8 (9)	72.2 (6)	95.7 (9)	81.3 (7)	63.3 (5)
Toronto	82.2 (6)	84.6 (6)	88.2 (6)	74.5 (5)	83.1 (6)	80.7 (5)	94.4 (7)	70.6 (4)	94.7 (7)	79.9 (6)	61.8 (4)
Vancouver	66.2 (1)	64.6 (1)	67.8 (2)	58.4 (2)	63.6 (1)	71.6 (3)	79.8 (3)	55.3 (1)	73.2 (2)	63.0 (2)	46.0 (1)
Waterloo Region	80.7 (4)	82.5 (5)	86.4 (5)	73.9 (3)	80.9 (5)	79.6 (4)	92.6 (5)	69.4 (3)	92.2 (6)	78.7 (5)	61.2 (3)
Winnipeg	81.7 (5)	79.9 (4)	80.4 (4)	74.2 (4)	79.1 (4)	84.8 (7)	93.0 (6)	74.6 (7)	89.5 (4)	77.9 (4)	68.0 (6)
Monterrey	72.5 (3)	70.6 (3)	68.6 (3)	86.4 (8)	75.7 (3)	65.5 (1)	68.7 (1)	71.5 (5)	67.6 (1)	68.6 (3)	70.6 (8)
Atlanta	95.2 (10)	94.8 (10)	97.4 (11)	96.0 (13)	94.4 (11)	96.0 (12)	95.4 (8)	93.7 (10)	95.3 (8)	96.5 (10)	96.2 (10)
Boston	102.3 (16)	104.4 (17)	105.2 (16)	99.3 (16)	104.9 (17)	97.8 (13)	104.0 (17)	103.7 (17)	104.1 (17)	103.0 (16)	100.4 (15)
Buffalo	96.8 (11)	98.2 (13)	108.2 (17)	91.9 (11)	96.7 (12)	92.0 (10)	100.1 (13)	100.3 (14)	99.9 (13)	98.8 (13)	98.7 (14)
Detroit	99.9 (15)	101.3 (14)	103.4 (14)	97.4 (14)	101.8 (15)	98.6 (15)	101.3 (15)	98.0 (13)	101.8 (15)	101.5 (14)	98.2 (12)
Houston	103.1 (17)	103.8 (16)	100.2 (13)	105.0 (17)	104.8 (16)	103.2 (16)	100.3 (14)	101.8 (15)	101.5 (14)	106.1 (17)	104.3 (16)
Lexington	90.7 (9)	92.6 (8)	92.8 (9)	89.7 (10)	91.5 (9)	89.2 (9)	90.1 (4)	91.8 (9)	89.7 (5)	95.4 (9)	94.2 (9)
Nashville	99.2 (14)	97.9 (12)	98.4 (12)	99.1 (15)	100.3 (13)	97.9 (14)	97.7 (10)	102.6 (16)	98.0 (10)	96.9 (11)	106.4 (17)
Philadelphia	98.9 (13)	101.5 (15)	104.6 (15)	94.2 (12)	100.6 (14)	95.0 (11)	103.0 (16)	97.5 (12)	102.2 (16)	102.4 (15)	98.4 (13)
Youngstown	97.0 (12)	96.2 (11)	93.9 (10)	88.9 (9)	92.1 (10)	109.2 (17)	98.6 (11)	94.3 (11)	99.1 (12)	98.7 (12)	96.3 (11)

## Research & development

The TTIs for R&D operations are presented in the table below. These results are based the average of two individual R&D operations – a biomedical R&D facility and an electronics systems design and testing facility – both of which display broadly similar results for tax costs. The three Ontario cities examined (as highlighted) all have total tax costs lower than any of the U.S. cities examined, in both the 2009 and in 2011 Scenarios.

In terms of the changes in tax costs between the 2009 and 2011 Scenarios, R&D firms are expected to see a greater impact than either manufacturing or services firms. R&D operations benefit to a much greater extent than manufacturers or services firms from the planned sales tax reforms in both Ontario and British Columbia. While both provinces currently have some limited sales tax exemptions related to R&D activities, R&D operations still pay non-refundable sales tax on a wide range of materials, supplies, and services. The change to a refundable GST-based tax will cause these existing sales tax costs to become refundable to R&D firms. Planned reductions in corporate income tax rates in both Ontario (four-percent reduction) and British Columbia (one-percent reduction) also benefit R&D operations, as does the expanded access to Ontario's Innovation Tax Credit.

Indeed, federal and state/provincial R&D tax incentives have a significant impact on total tax costs for R&D operations. For example, in the 2008 *Focus On Tax* study, Calgary's TTI for R&D was 49.1. Following the introduction of a 10-percent refundable tax credit for R&D activities in Alberta, in 2009 Calgary's TTI for R&D dropped to 9.8 – representing a total tax cost reduction of approximately 80 percent. Canada's federal R&D tax credit system, widely viewed as more generous than its U.S. counterpart, also helps to account for the wide spread in total tax costs between all Canadian and U.S. cities for these R&D operations.

### Total Tax Index Comparison, Services, 2009 and 2011 Scenarios

(Canadian dollar at par, ranked according to 2011 Total Tax Index)

Rank in 2011	City	2009 Scenario Index (Rank)	Index Change (2009→2011)	2011 Scenario Total Tax Index
1	Vancouver, CA	74.8 (2)	-8.8	<b>66.0</b>
2	Calgary, CA	70.5 (1)	-0.4	<b>70.1</b>
3	Waterloo Region, CA	92.6 (7)	-13.9	<b>78.7</b>
4	Ottawa, CA	93.0 (8)	-13.9	<b>79.0</b>
5	Toronto, CA	94.2 (10)	-13.9	<b>80.3</b>
6	Monterrey, MX	81.9 (3)	0.0	<b>81.9</b>
7	Winnipeg, CA	91.2 (4)	-0.4	<b>90.7</b>
8	Atlanta, US	92.1 (5)	0.0	<b>92.1</b>
8	Youngstown, US	92.2 (6)	-0.1	<b>92.1</b>
10	Montreal, CA	93.9 (9)	-0.5	<b>93.3</b>
11	Lexington, US	94.5 (11)	0.0	<b>94.5</b>
12	Detroit, US	97.7 (12)	0.0	<b>97.7</b>
13	Nashville, US	99.7 (13)	0.0	<b>99.7</b>
14	Houston, US	101.3 (14)	0.0	<b>101.3</b>
15	Buffalo, US	102.3 (15)	0.0	<b>102.3</b>
16	Philadelphia, US	103.9 (16)	-0.2	<b>103.7</b>
17	Boston, US	104.8 (17)	1.3	<b>106.1</b>

### Total Tax Index Comparison, R&D, 2009 and 2011 Scenarios

(Canadian dollar at par, ranked according to 2011 Total Tax Index)

Rank in 2011	City	2009 Scenario Index (Rank)	Index Change (2009→2011)	2011 Scenario Total Tax Index
1	Calgary, CA	9.8 (1)	0.0	<b>9.8</b>
2	Vancouver, CA	37.5 (3)	-14.6	<b>22.9</b>
3	Montreal, CA	24.8 (2)	-0.2	<b>24.6</b>
4	Waterloo Region, CA	51.9 (4)	-15.7	<b>36.2</b>
5	Ottawa, CA	52.0 (5)	-15.5	<b>36.5</b>
6	Toronto, CA	52.3 (6)	-15.5	<b>36.8</b>
7	Winnipeg, CA	60.1 (7)	0.0	<b>60.1</b>
8	Monterrey, MX	80.7 (8)	0.0	<b>80.7</b>
9	Lexington, US	94.3 (10)	0.0	<b>94.3</b>
10	Youngstown, US	95.0 (11)	0.0	<b>95.0</b>
11	Boston, US	94.1 (9)	1.6	<b>95.7</b>
12	Detroit, US	96.1 (12)	0.0	<b>96.1</b>
13	Atlanta, US	99.0 (13)	0.0	<b>99.0</b>
14	Buffalo, US	101.7 (14)	0.0	<b>101.7</b>
15	Philadelphia, US	101.8 (15)	0.0	<b>101.8</b>
16	Nashville, US	109.3 (16)	0.0	<b>109.3</b>
17	Houston, US	115.6 (17)	0.0	<b>115.6</b>

## 6. Impact of exchange rates

Most of the analysis presented in this report has been developed assuming parity between the Canadian and U.S. dollars (Dollar-at-Par Scenario). This exchange rate is consistent with that used in the *Competitive Alternatives 2008: Focus on Tax* report and represents the upper end of the Canadian dollar's trading range over the last year. For Mexico, an exchange rate of 10.87 pesos to the U.S. dollar has been used – also consistent with the *Competitive Alternatives 2008: Focus on Tax* report

However, both the Canadian dollar and the Mexican peso have seen some volatility against the U.S. dollar over the last year, with both currencies trading within a range of approximately 25%. Therefore, we have also analyzed total tax costs for the lower end of the recent trading range of both currencies, assuming that one Canadian dollar would buy 80 U.S. cents and that one U.S. dollar would buy 13.59 Mexican pesos (the 80-Cent Scenario).

When varying exchange rates in this manner, naturally there is no change in taxes paid in the nine U.S. locations examined in this study, as taxes in the U.S. cities are measured in U.S. dollars, which is the base currency for comparison.

However, all of the Canadian cities, as well as Monterrey in Mexico, see a decrease in their TTI – representing a decrease in taxes paid, as measured in U.S. dollar terms. These savings range from 4.0 percent for Vancouver, to 7.1 percent for Ottawa.

Two factors drive this reduction in total tax costs, as expressed in U.S. dollar terms:

- Actual costs in respect of statutory labour costs remain unchanged in local currency terms, but with a more favourable exchange rate from a U.S.-based investor's perspective, the tax cost as expressed in U.S. dollars declines.
- Similarly for property taxes, the actual tax cost in local currency does not decline, but the tax cost expressed in U.S. dollars declines.
- Income tax costs also vary only marginally between the two exchange rate scenarios. The methodology used in this study to compare taxes assumes a fixed level of net income before tax in all locations. Therefore, to the extent that local-currency costs may decrease in U.S. dollar terms as the local currencies depreciate, so do local-currency revenues, producing no change in net before-tax income.

These two changes explain the improvement in TTI for the Canadian and Mexican cities in the table below.

Based on the modeling methodology used in this study, the impact of the change in exchange rate on other taxes is modest:

- Sales tax costs vary only marginally between the two exchange rate scenarios. The study methodology assumes that many purchased goods are imported and so their prices and related sales taxes do not change in U.S. dollar terms as the values of the local currencies decline.

The 2009 and 2011 results for the Dollar-at-Par and 80-Cent Scenarios are detailed in Appendix A. For the Dollar-at-Par Scenario, Canadian cities have lower total tax costs than their U.S. counterparts in most cases, while for the 80-Cent Scenario, Canadian cities have lower total tax costs than their U.S. counterparts in *all* cases.

### Impact of Exchange Rates on Total Tax Index, 2009 Scenario

(All industries, ranked according to Total Tax Index for 80 U.S. cent scenario)

Rank	City	Total Tax Index 2009		
		CDN\$1 = US\$0.80	CDN\$1 = US\$1	Change in Index
1	Calgary, CA	55.3	59.6 (1)	-4.3
2	Vancouver, CA	61.0	65.0 (2)	-4.0
3	Montreal, CA	66.7	71.9 (3)	-5.2
4	Monterrey, MX	69.5	75.7 (4)	-6.2
5	Winnipeg, CA	71.2	77.5 (5)	-6.3
6	Waterloo Region, CA	74.7	81.4 (6)	-6.7
7	Toronto, CA	75.6	82.5 (7)	-7.0
8	Ottawa, CA	76.1	83.2 (8)	-7.1
9	Lexington, US	93.2	93.2 (9)	0.0
10	Atlanta, US	94.9	94.9 (10)	0.0
11	Youngstown, US	95.7	95.7 (11)	0.0
12	Detroit, US	98.4	98.4 (12)	0.0
13	Buffalo, US	98.8	98.8 (13)	0.0
14	Nashville, US	100.7	100.7 (14)	0.0
15	Philadelphia, US	100.9	100.9 (15)	0.0
16	Boston, US	101.8	101.8 (16)	0.0
17	Houston, US	103.1	103.1 (17)	0.0

## Appendix A – Detailed results by city

### 2008 results

The 17 cities examined in this study represent a subset of the 102 cities examined in the *Competitive Alternatives 2008: Focus on Tax* study. For the convenience of the reader and ease of comparison to the 2009 and 2011 results, this section provides a summary of the results and ranking for these 17 cities from the 2008 study. Cities are sorted in order of ascending TTI.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>OVERALL (2008)</b>										
Calgary, CA	23.6%	6.2%	12.5%	42.2%	3	5	2	1	69.3	
Vancouver, CA	24.2%	9.5%	12.2%	45.8%	4	12	1	2	75.2	
Monterrey, MX	28.4%	2.7%	14.9%	46.0%	8	1	3	3	75.4	
Winnipeg, CA	19.3%	13.6%	16.1%	49.1%	1	17	6	4	80.5	
Montreal, CA	22.7%	6.4%	21.6%	50.7%	2	6	17	5	83.2	
Waterloo Region, CA	25.5%	10.3%	16.0%	51.7%	5	15	4	6	84.8	
Toronto, CA	25.7%	10.0%	16.4%	52.0%	7	13	7	7	85.4	
Ottawa, CA	25.7%	11.7%	16.1%	53.4%	6	16	5	8	87.6	
Lexington, US	35.8%	3.9%	17.1%	56.7%	16	2	8	9	93.0	
Atlanta, US	32.5%	7.2%	18.2%	57.9%	10	8	10	10	95.1	
Youngstown, US	34.3%	5.8%	19.1%	59.2%	13	4	11	11	97.1	
Detroit, US	32.4%	7.7%	20.0%	60.1%	9	10	15	12	98.6	
Buffalo, US	33.6%	7.4%	19.4%	60.3%	12	9	13	13	98.9	
Nashville, US	34.8%	8.4%	18.1%	61.3%	14	11	9	14	100.6	
Philadelphia, US	35.8%	6.4%	19.9%	62.1%	15	7	14	15	101.9	
Boston, US	38.2%	4.9%	19.1%	62.2%	17	3	11	16	102.1	
Houston, US	32.9%	10.1%	20.5%	63.5%	11	14	16	17	104.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>MANUFACTURING (2008)</b>										
Monterrey, MX	28.1%	2.0%	10.3%	40.5%	8	1	1	1	71.6	
Calgary, CA	24.7%	6.8%	11.3%	42.7%	2	5	3	2	75.6	
Winnipeg, CA	19.3%	15.2%	13.6%	48.1%	1	17	6	3	85.1	
Vancouver, CA	26.1%	11.2%	11.0%	48.3%	4	13	2	4	85.4	
Lexington, US	34.1%	3.5%	13.5%	51.1%	16	2	4	5	90.3	
Waterloo Region, CA	26.1%	12.3%	13.6%	52.0%	5	15	5	6	92.0	
Toronto, CA	26.5%	11.9%	14.0%	52.4%	7	14	8	7	92.7	
Montreal, CA	25.8%	9.2%	18.2%	53.2%	3	11	17	8	94.2	
Atlanta, US	31.8%	7.9%	14.2%	53.8%	12	7	9	9	95.3	
Ottawa, CA	26.4%	14.3%	13.7%	54.4%	6	16	7	10	96.3	
Buffalo, US	31.4%	7.9%	15.5%	54.7%	9	8	12	11	96.9	
Youngstown, US	33.5%	5.9%	16.1%	55.5%	14	4	14	12	98.1	
Nashville, US	33.4%	7.9%	14.5%	55.8%	13	9	10	13	98.8	
Philadelphia, US	33.5%	6.9%	15.8%	56.2%	15	6	13	14	99.5	
Detroit, US	31.7%	8.8%	16.1%	56.6%	11	10	15	15	100.1	
Boston, US	37.7%	5.1%	14.9%	57.7%	17	3	11	16	102.1	
Houston, US	31.6%	11.0%	16.4%	59.1%	10	12	16	17	104.5	

The following tables details the results for all 17 cities, sorted in order of ascending TTI. It is purely coincidental that for these sectors the TTI of 100.0 (which represents the U.S. average) also has a TETR of close to 100 percent.

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>SERVICES (2008)</b>									
Calgary, CA	26.5%	6.4%	40.3%	73.3%	1	2	2	1	72.2
Vancouver, CA	28.6%	9.6%	40.1%	78.2%	3	9	1	2	77.0
Monterrey, MX	30.8%	7.3%	45.9%	83.9%	8	3	3	3	82.6
Atlanta, US	35.4%	8.3%	50.5%	94.1%	9	6	7	4	92.7
Winnipeg, CA	28.7%	14.1%	51.6%	94.5%	4	16	8	5	93.0
Waterloo Region, CA	30.7%	11.5%	52.6%	94.8%	5	13	9	6	93.3
Ottawa, CA	30.7%	11.4%	53.0%	95.0%	5	11	11	7	93.6
Youngstown, US	37.3%	8.9%	49.0%	95.2%	11	8	6	8	93.8
Montreal, CA	28.5%	0.1%	67.4%	96.0%	2	1	17	9	94.5
Toronto, CA	30.7%	11.4%	54.2%	96.2%	5	11	13	10	94.8
Lexington, US	41.1%	7.6%	47.7%	96.4%	15	4	4	11	94.9
Detroit, US	35.4%	8.8%	55.5%	99.6%	9	7	14	12	98.1
Nashville, US	38.3%	14.1%	48.9%	101.4%	13	16	5	13	99.8
Houston, US	37.5%	12.9%	53.1%	103.5%	12	15	12	14	101.9
Buffalo, US	40.0%	11.7%	52.7%	104.4%	14	14	10	15	102.8
Boston, US	41.7%	7.9%	57.3%	106.8%	16	5	16	16	105.2
Philadelphia, US	42.0%	9.7%	55.7%	107.4%	17	10	15	17	105.8

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>RESEARCH &amp; DEVELOPMENT (2008)</b>									
Montreal, CA	-21.0%	0.3%	44.9%	24.2%	1	1	9	1	24.3
Vancouver, CA	0.0%	14.9%	22.4%	37.4%	2	13	2	2	37.5
Calgary, CA	11.7%	14.9%	22.3%	48.9%	7	13	1	3	49.1
Waterloo Region, CA	9.6%	12.0%	31.7%	53.3%	5	6	3	4	53.4
Ottawa, CA	9.6%	12.0%	31.8%	53.4%	5	6	4	5	53.5
Toronto, CA	9.4%	12.0%	32.2%	53.7%	4	6	5	6	53.9
Winnipeg, CA	0.0%	27.2%	34.3%	61.4%	2	17	6	7	61.6
Monterrey, MX	32.0%	6.9%	41.7%	80.6%	8	2	7	8	80.8
Boston, US	36.6%	9.2%	48.0%	93.9%	11	4	12	9	94.2
Lexington, US	39.3%	12.1%	43.1%	94.4%	16	9	8	10	94.7
Youngstown, US	36.8%	14.0%	45.5%	96.3%	12	11	10	11	96.6
Detroit, US	35.0%	11.0%	50.4%	96.3%	9	5	14	12	96.6
Atlanta, US	35.0%	14.8%	49.6%	99.4%	9	12	13	13	99.7
Philadelphia, US	41.5%	8.9%	51.4%	101.8%	17	3	16	14	102.1
Buffalo, US	37.7%	13.3%	50.8%	101.9%	13	10	15	15	102.2
Nashville, US	38.6%	24.0%	46.8%	109.4%	15	16	11	16	109.8
Houston, US	38.0%	21.0%	57.0%	116.1%	14	15	17	17	116.4

## 2009 scenario, dollar at par

The following tables details the results for all 17 cities, sorted in order of ascending TTI.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>OVERALL - 2009 SCENARIO (CDN\$ AT PAR)</b>										
Calgary, CA	18.8%	5.2%	12.3%	36.3%	2	3	2	1	59.6	
Vancouver, CA	20.2%	7.1%	12.3%	39.6%	4	9	1	2	65.0	
Montreal, CA	16.0%	6.1%	21.6%	43.8%	1	7	17	3	71.9	
Monterrey, MX	28.6%	2.7%	14.9%	46.1%	8	1	3	4	75.7	
Winnipeg, CA	19.5%	11.4%	16.3%	47.2%	3	17	5	5	77.5	
Waterloo Region, CA	23.7%	9.6%	16.3%	49.6%	7	14	4	6	81.4	
Toronto, CA	23.6%	9.9%	16.7%	50.3%	5	15	7	7	82.5	
Ottawa, CA	23.7%	10.6%	16.4%	50.7%	6	16	6	8	83.2	
Lexington, US	35.7%	3.9%	17.1%	56.8%	16	2	8	9	93.2	
Atlanta, US	32.5%	7.0%	18.3%	57.8%	10	8	10	10	94.9	
Youngstown, US	33.1%	6.0%	19.2%	58.3%	12	6	11	11	95.7	
Detroit, US	32.4%	7.4%	20.1%	59.9%	9	11	15	12	98.4	
Buffalo, US	33.5%	7.2%	19.4%	60.2%	13	10	13	13	98.8	
Nashville, US	34.7%	8.4%	18.2%	61.3%	14	12	9	14	100.7	
Philadelphia, US	35.7%	5.7%	20.0%	61.4%	15	5	14	15	100.9	
Boston, US	37.4%	5.2%	19.4%	62.0%	17	4	12	16	101.8	
Houston, US	32.8%	9.4%	20.6%	62.8%	11	13	16	17	103.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>MANUFACTURING - 2009 SCENARIO (CDN\$ AT PAR)</b>										
Calgary, CA	21.4%	5.7%	11.0%	38.0%	3	4	3	1	67.5	
Vancouver, CA	21.3%	7.8%	10.9%	40.0%	2	9	2	2	71.0	
Monterrey, MX	28.4%	2.0%	10.3%	40.7%	8	1	1	3	72.4	
Winnipeg, CA	19.9%	12.5%	13.7%	46.1%	1	16	5	4	81.8	
Montreal, CA	22.2%	8.8%	18.1%	49.2%	4	12	17	5	87.3	
Waterloo Region, CA	24.0%	11.3%	13.9%	49.2%	7	14	6	6	87.3	
Toronto, CA	23.9%	11.8%	14.3%	50.0%	5	15	8	7	88.8	
Ottawa, CA	24.0%	12.7%	14.0%	50.7%	6	17	7	8	90.1	
Lexington, US	34.0%	3.6%	13.5%	51.1%	16	2	4	9	90.8	
Atlanta, US	31.7%	7.6%	14.3%	53.6%	12	7	9	10	95.2	
Buffalo, US	31.3%	7.7%	15.5%	54.5%	9	8	12	11	96.8	
Youngstown, US	32.3%	6.3%	16.1%	54.6%	13	5	14	12	97.0	
Philadelphia, US	33.5%	6.3%	15.9%	55.7%	15	6	13	13	98.9	
Nashville, US	33.3%	8.0%	14.5%	55.8%	14	10	10	14	99.1	
Detroit, US	31.6%	8.5%	16.2%	56.2%	11	11	15	15	99.9	
Boston, US	36.8%	5.6%	15.0%	57.4%	17	3	11	16	102.0	
Houston, US	31.6%	10.0%	16.5%	58.0%	10	13	16	17	103.1	

The following tables details the results for all 17 cities, sorted in order of ascending TTI. It is purely coincidental that for these sectors the TTI of 100.0 (which represents the U.S. average) also has a TETR of close to 100 percent.

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>SERVICES - 2009 SCENARIO (CDN\$ AT PAR)</b>									
Calgary, CA	25.7%	5.4%	40.9%	72.0%	1	2	1	1	70.5
Vancouver, CA	25.8%	9.6%	41.1%	76.4%	2	10	2	2	74.8
Monterrey, MX	30.5%	7.3%	45.9%	83.7%	8	3	3	3	81.9
Winnipeg, CA	27.7%	13.1%	52.2%	93.1%	4	16	8	4	91.2
Atlanta, US	35.4%	8.2%	50.5%	94.0%	9	6	7	5	92.1
Youngstown, US	36.1%	8.9%	49.1%	94.1%	11	9	6	6	92.2
Waterloo Region, CA	29.8%	11.5%	53.4%	94.6%	5	13	11	7	92.6
Ottawa, CA	29.8%	11.4%	53.8%	94.9%	5	11	12	8	93.0
Montreal, CA	27.5%	0.1%	68.2%	95.9%	3	1	17	9	93.9
Toronto, CA	29.8%	11.4%	55.1%	96.2%	5	11	13	10	94.2
Lexington, US	41.1%	7.6%	47.8%	96.5%	16	4	4	11	94.5
Detroit, US	35.4%	8.6%	55.7%	99.7%	9	8	14	12	97.7
Nashville, US	38.3%	14.5%	49.0%	101.8%	13	17	5	13	99.7
Houston, US	37.5%	12.8%	53.3%	103.5%	12	15	10	14	101.3
Buffalo, US	40.0%	11.7%	52.8%	104.5%	14	14	9	15	102.3
Philadelphia, US	42.0%	8.2%	55.9%	106.1%	17	6	15	16	103.9
Boston, US	40.9%	8.1%	58.0%	107.0%	15	5	16	17	104.8

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>RESEARCH &amp; DEVELOPMENT - 2009 SCENARIO (CDN\$ AT PAR)</b>									
Calgary, CA	-25.6%	12.6%	22.8%	9.8%	1	10	2	1	9.8
Montreal, CA	-21.1%	0.2%	45.9%	24.9%	2	1	10	2	24.8
Vancouver, CA	0.0%	14.9%	22.7%	37.6%	3	14	1	3	37.5
Waterloo Region, CA	7.5%	12.0%	32.6%	52.1%	7	6	3	4	51.9
Ottawa, CA	7.4%	12.0%	32.7%	52.1%	6	6	4	5	52.0
Toronto, CA	7.3%	12.0%	33.1%	52.5%	5	6	5	6	52.3
Winnipeg, CA	0.0%	25.5%	34.8%	60.3%	3	17	6	7	60.1
Monterrey, MX	32.4%	6.9%	41.7%	81.0%	8	2	7	8	80.7
Boston, US	36.3%	9.6%	48.6%	94.4%	12	4	12	9	94.1
Lexington, US	39.3%	12.1%	43.2%	94.6%	16	9	8	10	94.3
Youngstown, US	35.6%	14.0%	45.6%	95.3%	11	12	9	11	95.0
Detroit, US	35.0%	10.8%	50.6%	96.4%	9	5	14	12	96.1
Atlanta, US	35.0%	14.7%	49.7%	99.4%	9	13	13	13	99.0
Buffalo, US	37.7%	13.3%	51.0%	102.0%	13	11	15	14	101.7
Philadelphia, US	41.5%	8.9%	51.8%	102.1%	17	3	16	15	101.8
Nashville, US	38.6%	24.0%	47.0%	109.6%	15	16	11	16	109.3
Houston, US	38.0%	20.6%	57.4%	116.0%	14	15	17	17	115.6

## 2009 scenario, dollar at 80 U.S. cents

The following tables details the results for all 17 cities, sorted in order of ascending TTI.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>OVERALL - 2009 SCENARIO (CDN\$ AT 80¢)</b>										
Calgary, CA	19.7%	4.1%	9.9%	33.7%	2	3	2	1	55.3	
Vancouver, CA	20.7%	6.6%	9.8%	37.2%	4	8	1	2	61.0	
Montreal, CA	18.4%	4.9%	17.3%	40.6%	1	4	9	3	66.7	
Monterrey, MX	28.3%	2.2%	11.9%	42.3%	8	1	3	4	69.5	
Winnipeg, CA	20.3%	10.0%	13.1%	43.4%	3	17	5	5	71.2	
Waterloo Region, CA	24.2%	8.3%	13.0%	45.5%	7	12	4	6	74.7	
Toronto, CA	24.1%	8.6%	13.4%	46.0%	5	14	7	7	75.6	
Ottawa, CA	24.1%	9.1%	13.1%	46.4%	6	15	6	8	76.1	
Lexington, US	35.7%	3.9%	17.1%	56.8%	16	2	8	9	93.2	
Atlanta, US	32.5%	7.0%	18.3%	57.8%	10	9	11	10	94.9	
Youngstown, US	33.1%	6.0%	19.2%	58.3%	12	7	12	11	95.7	
Detroit, US	32.4%	7.4%	20.1%	59.9%	9	11	16	12	98.4	
Buffalo, US	33.5%	7.2%	19.4%	60.2%	13	10	14	13	98.8	
Nashville, US	34.7%	8.4%	18.2%	61.3%	14	13	10	14	100.7	
Philadelphia, US	35.7%	5.7%	20.0%	61.4%	15	6	15	15	100.9	
Boston, US	37.4%	5.2%	19.4%	62.0%	17	5	13	16	101.8	
Houston, US	32.8%	9.4%	20.6%	62.8%	11	16	17	17	103.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>MANUFACTURING - 2009 SCENARIO (CDN\$ AT 80¢)</b>										
Calgary, CA	21.8%	4.5%	8.8%	35.1%	3	3	3	1	62.4	
Vancouver, CA	21.8%	7.1%	8.7%	37.6%	2	8	2	2	66.8	
Monterrey, MX	28.2%	1.6%	8.2%	38.0%	8	1	1	3	67.5	
Winnipeg, CA	20.6%	10.8%	11.0%	42.4%	1	17	4	4	75.4	
Montreal, CA	22.7%	7.1%	14.4%	44.2%	4	7	10	5	78.6	
Waterloo Region, CA	24.4%	9.5%	11.1%	45.0%	7	13	5	6	79.8	
Toronto, CA	24.3%	9.9%	11.4%	45.6%	5	14	7	7	81.0	
Ottawa, CA	24.4%	10.7%	11.2%	46.2%	6	16	6	8	82.0	
Lexington, US	34.0%	3.6%	13.5%	51.1%	16	2	8	9	90.8	
Atlanta, US	31.7%	7.6%	14.3%	53.6%	12	9	9	10	95.2	
Buffalo, US	31.3%	7.7%	15.5%	54.5%	9	10	13	11	96.8	
Youngstown, US	32.3%	6.3%	16.1%	54.6%	13	5	15	12	97.0	
Philadelphia, US	33.5%	6.3%	15.9%	55.7%	15	6	14	13	98.9	
Nashville, US	33.3%	8.0%	14.5%	55.8%	14	11	11	14	99.1	
Detroit, US	31.6%	8.5%	16.2%	56.2%	11	12	16	15	99.9	
Boston, US	36.8%	5.6%	15.0%	57.4%	17	4	12	16	102.0	
Houston, US	31.6%	10.0%	16.5%	58.0%	10	15	17	17	103.1	

The following tables details the results for all 17 cities, sorted in order of ascending TTI. It is purely coincidental that for these sectors the TTI of 100.0 (which represents the U.S. average) also has a TETR of close to 100 percent.

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>SERVICES - 2009 SCENARIO (CDN\$ AT 80¢)</b>									
Calgary, CA	25.7%	4.3%	32.7%	62.7%	1	2	1	1	61.4
Vancouver, CA	25.8%	9.2%	32.9%	67.8%	2	10	2	2	66.4
Monterrey, MX	29.3%	5.8%	36.7%	71.8%	5	3	3	3	70.3
Winnipeg, CA	27.7%	12.1%	41.8%	81.6%	4	15	4	4	79.9
Montreal, CA	27.5%	0.1%	54.5%	82.2%	3	1	14	5	80.5
Waterloo Region, CA	29.8%	10.9%	42.7%	83.4%	6	11	5	6	81.7
Ottawa, CA	29.8%	10.9%	43.1%	83.7%	6	11	6	7	82.0
Toronto, CA	29.8%	10.9%	44.1%	84.8%	6	11	7	8	83.0
Atlanta, US	35.4%	8.2%	50.5%	94.0%	9	6	11	9	92.1
Youngstown, US	36.1%	8.9%	49.1%	94.1%	11	9	10	10	92.2
Lexington, US	41.1%	7.6%	47.8%	96.5%	16	4	8	11	94.5
Detroit, US	35.4%	8.6%	55.7%	99.7%	9	8	15	12	97.7
Nashville, US	38.3%	14.5%	49.0%	101.8%	13	17	9	13	99.7
Houston, US	37.5%	12.8%	53.3%	103.5%	12	16	13	14	101.3
Buffalo, US	40.0%	11.7%	52.8%	104.5%	14	14	12	15	102.3
Philadelphia, US	42.0%	8.2%	55.9%	106.1%	17	6	16	16	103.9
Boston, US	40.9%	8.1%	58.0%	107.0%	15	5	17	17	104.8

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>RESEARCH &amp; DEVELOPMENT - 2009 SCENARIO (CDN\$ AT 80¢)</b>									
Calgary, CA	-18.6%	10.0%	18.2%	9.6%	1	5	1	1	9.6
Montreal, CA	-14.1%	0.2%	36.7%	22.7%	2	1	8	2	22.7
Vancouver, CA	0.0%	14.8%	18.2%	33.0%	3	14	1	3	32.9
Waterloo Region, CA	8.4%	11.8%	26.0%	46.3%	7	7	3	4	46.1
Ottawa, CA	8.4%	11.8%	26.1%	46.4%	6	7	4	5	46.2
Toronto, CA	8.3%	11.8%	26.5%	46.6%	5	7	5	6	46.4
Winnipeg, CA	0.0%	23.6%	27.9%	51.5%	3	16	6	7	51.4
Monterrey, MX	31.5%	5.5%	33.4%	70.4%	8	2	7	8	70.2
Boston, US	36.3%	9.6%	48.6%	94.4%	12	4	12	9	94.1
Lexington, US	39.3%	12.1%	43.2%	94.6%	16	10	9	10	94.3
Youngstown, US	35.6%	14.0%	45.6%	95.3%	11	12	10	11	95.0
Detroit, US	35.0%	10.8%	50.6%	96.4%	9	6	14	12	96.1
Atlanta, US	35.0%	14.7%	49.7%	99.4%	9	13	13	13	99.0
Buffalo, US	37.7%	13.3%	51.0%	102.0%	13	11	15	14	101.7
Philadelphia, US	41.5%	8.9%	51.8%	102.1%	17	3	16	15	101.8
Nashville, US	38.6%	24.0%	47.0%	109.6%	15	17	11	16	109.3
Houston, US	38.0%	20.6%	57.4%	116.0%	14	15	17	17	115.6

## 2011 scenario, dollar at par

The following tables details the results for all 17 cities, sorted in order of ascending TTI.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>OVERALL - 2011 SCENARIO (CDN\$ AT PAR)</b>										
Vancouver, CA	19.8%	3.7%	12.3%	35.8%	4	2	1	1	58.8	
Calgary, CA	18.5%	5.2%	12.3%	36.0%	2	4	2	2	59.2	
Montreal, CA	15.7%	6.1%	21.6%	43.4%	1	8	17	3	71.4	
Waterloo Region, CA	20.9%	6.8%	16.3%	44.0%	7	9	4	4	72.3	
Toronto, CA	20.8%	7.2%	16.7%	44.7%	5	11	7	5	73.5	
Ottawa, CA	20.8%	7.8%	16.4%	45.1%	6	14	6	6	74.1	
Monterrey, MX	28.6%	2.7%	14.9%	46.1%	8	1	3	7	75.8	
Winnipeg, CA	19.3%	11.4%	16.3%	47.0%	3	17	5	8	77.2	
Lexington, US	35.7%	3.9%	17.1%	56.7%	16	3	8	9	93.2	
Atlanta, US	32.4%	7.0%	18.3%	57.7%	10	10	10	10	94.9	
Youngstown, US	33.0%	6.0%	19.2%	58.2%	12	7	11	11	95.6	
Detroit, US	32.3%	7.4%	20.1%	59.9%	9	13	15	12	98.4	
Buffalo, US	33.5%	7.2%	19.4%	60.1%	13	12	13	13	98.8	
Nashville, US	34.7%	8.4%	18.2%	61.3%	14	15	9	14	100.7	
Philadelphia, US	35.6%	5.7%	20.0%	61.3%	15	5	14	15	100.8	
Boston, US	37.2%	5.7%	19.4%	62.3%	17	6	12	16	102.3	
Houston, US	32.8%	9.4%	20.6%	62.7%	11	16	16	17	103.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>MANUFACTURING - 2011 SCENARIO (CDN\$ AT PAR)</b>										
Vancouver, CA	21.1%	5.2%	10.9%	37.2%	2	3	2	1	66.2	
Calgary, CA	21.2%	5.7%	11.0%	37.8%	3	4	3	2	67.2	
Monterrey, MX	28.4%	2.0%	10.3%	40.7%	8	1	1	3	72.5	
Waterloo Region, CA	21.8%	9.7%	13.9%	45.3%	6	13	6	4	80.7	
Winnipeg, CA	19.7%	12.5%	13.7%	45.9%	1	17	5	5	81.7	
Toronto, CA	21.7%	10.2%	14.3%	46.2%	4	15	8	6	82.2	
Ottawa, CA	21.8%	11.1%	14.0%	46.9%	5	16	7	7	83.4	
Montreal, CA	22.0%	8.8%	18.1%	48.9%	7	12	17	8	87.1	
Lexington, US	33.9%	3.6%	13.5%	51.0%	16	2	4	9	90.7	
Atlanta, US	31.6%	7.6%	14.3%	53.5%	12	8	9	10	95.2	
Buffalo, US	31.2%	7.7%	15.5%	54.4%	9	9	12	11	96.8	
Youngstown, US	32.1%	6.3%	16.1%	54.5%	13	6	14	12	97.0	
Philadelphia, US	33.4%	6.3%	15.9%	55.6%	15	7	13	13	98.9	
Nashville, US	33.2%	8.0%	14.5%	55.7%	14	10	10	14	99.2	
Detroit, US	31.5%	8.5%	16.2%	56.1%	11	11	15	15	99.9	
Boston, US	36.6%	5.9%	15.0%	57.5%	17	5	11	16	102.3	
Houston, US	31.5%	10.0%	16.5%	57.9%	10	14	16	17	103.1	

The following tables details the results for all 17 cities, sorted in order of ascending TTI. It is purely coincidental that for these sectors the TTI of 100.0 (which represents the U.S. average) also has a TETR of close to 100 percent.

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>SERVICES - 2011 SCENARIO (CDN\$ AT PAR)</b>									
Vancouver, CA	25.3%	1.0%	41.1%	67.4%	1	2	2	1	66.0
Calgary, CA	25.3%	5.4%	40.9%	71.5%	1	6	1	2	70.1
Waterloo Region, CA	25.4%	1.6%	53.4%	80.3%	3	5	11	3	78.7
Ottawa, CA	25.4%	1.5%	53.8%	80.7%	3	3	12	4	79.0
Toronto, CA	25.4%	1.5%	55.1%	82.0%	3	3	13	5	80.3
Monterrey, MX	30.5%	7.3%	45.9%	83.7%	8	7	3	6	81.9
Winnipeg, CA	27.3%	13.1%	52.2%	92.7%	7	16	8	7	90.7
Atlanta, US	35.4%	8.2%	50.5%	94.0%	9	10	7	8	92.1
Youngstown, US	36.0%	8.9%	49.1%	94.0%	11	12	6	8	92.1
Montreal, CA	27.2%	0.0%	68.2%	95.3%	6	1	17	10	93.3
Lexington, US	41.1%	7.6%	47.8%	96.5%	16	8	4	11	94.5
Detroit, US	35.4%	8.6%	55.7%	99.7%	9	11	14	12	97.7
Nashville, US	38.3%	14.5%	49.0%	101.8%	13	17	5	13	99.7
Houston, US	37.5%	12.8%	53.3%	103.5%	12	15	10	14	101.3
Buffalo, US	40.0%	11.7%	52.8%	104.5%	14	14	9	15	102.3
Philadelphia, US	42.0%	8.0%	55.9%	105.9%	17	9	15	16	103.7
Boston, US	40.6%	9.7%	58.0%	108.4%	15	13	16	17	106.1

City	Effective Tax Rates				Ranks				TTI
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
<b>RESEARCH &amp; DEVELOPMENT - 2011 SCENARIO (CDN\$ AT PAR)</b>									
Calgary, CA	-25.6%	12.6%	22.8%	9.8%	1	11	2	1	9.8
Vancouver, CA	0.0%	0.3%	22.7%	23.0%	3	2	1	2	22.9
Montreal, CA	-21.2%	0.0%	45.9%	24.7%	2	1	10	3	24.6
Waterloo Region, CA	3.3%	0.5%	32.6%	36.3%	6	3	3	4	36.2
Ottawa, CA	3.3%	0.6%	32.7%	36.6%	6	4	4	5	36.5
Toronto, CA	3.1%	0.6%	33.1%	36.9%	5	5	5	6	36.8
Winnipeg, CA	0.0%	25.5%	34.8%	60.3%	3	17	6	7	60.1
Monterrey, MX	32.4%	6.9%	41.7%	81.0%	8	6	7	8	80.7
Lexington, US	39.3%	12.1%	43.2%	94.6%	16	10	8	9	94.3
Youngstown, US	35.6%	14.0%	45.6%	95.3%	11	13	9	10	95.0
Boston, US	36.2%	11.3%	48.6%	96.0%	12	9	12	11	95.7
Detroit, US	35.0%	10.8%	50.6%	96.4%	9	8	14	12	96.1
Atlanta, US	35.0%	14.7%	49.7%	99.4%	9	14	13	13	99.0
Buffalo, US	37.7%	13.3%	51.0%	102.0%	13	12	15	14	101.7
Philadelphia, US	41.5%	8.9%	51.8%	102.1%	17	7	16	15	101.8
Nashville, US	38.6%	24.0%	47.0%	109.6%	15	16	11	16	109.3
Houston, US	38.0%	20.6%	57.4%	116.0%	14	15	17	17	115.6

## 2011 scenario, dollar at 80 U.S. cents

The following tables details the results for all 17 cities, sorted in order of ascending TTI.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>OVERALL - 2011 SCENARIO (CDN\$ AT 80¢)</b>										
Calgary, CA	19.4%	4.1%	9.9%	33.4%	2	4	2	1	54.9	
Vancouver, CA	20.3%	3.3%	9.8%	33.4%	4	2	1	2	54.9	
Waterloo Region, CA	21.3%	5.5%	13.0%	39.8%	7	6	4	3	65.4	
Montreal, CA	18.1%	4.9%	17.3%	40.3%	1	5	9	4	66.2	
Toronto, CA	21.2%	5.8%	13.4%	40.4%	5	9	7	5	66.3	
Ottawa, CA	21.3%	6.3%	13.1%	40.7%	6	11	6	6	66.9	
Monterrey, MX	28.3%	2.2%	11.9%	42.3%	8	1	3	7	69.6	
Winnipeg, CA	20.1%	10.0%	13.1%	43.1%	3	17	5	8	70.9	
Lexington, US	35.7%	3.9%	17.1%	56.7%	16	3	8	9	93.2	
Atlanta, US	32.4%	7.0%	18.3%	57.7%	10	12	11	10	94.9	
Youngstown, US	33.0%	6.0%	19.2%	58.2%	12	10	12	11	95.6	
Detroit, US	32.3%	7.4%	20.1%	59.9%	9	14	16	12	98.4	
Buffalo, US	33.5%	7.2%	19.4%	60.1%	13	13	14	13	98.8	
Nashville, US	34.7%	8.4%	18.2%	61.3%	14	15	10	14	100.7	
Philadelphia, US	35.6%	5.7%	20.0%	61.3%	15	7	15	15	100.8	
Boston, US	37.2%	5.7%	19.4%	62.3%	17	8	13	16	102.3	
Houston, US	32.8%	9.4%	20.6%	62.7%	11	16	17	17	103.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>MANUFACTURING - 2011 SCENARIO (CDN\$ AT 80¢)</b>										
Vancouver, CA	21.5%	4.6%	8.7%	34.8%	2	4	2	1	62.0	
Calgary, CA	21.6%	4.5%	8.8%	34.9%	3	3	3	2	62.1	
Monterrey, MX	28.2%	1.6%	8.2%	38.0%	8	1	1	3	67.6	
Waterloo Region, CA	22.1%	7.8%	11.1%	41.0%	5	11	5	4	72.9	
Toronto, CA	22.1%	8.2%	11.4%	41.7%	4	13	7	5	74.1	
Ottawa, CA	22.1%	8.9%	11.2%	42.2%	6	15	6	6	75.1	
Winnipeg, CA	20.5%	10.8%	11.0%	42.3%	1	17	4	7	75.3	
Montreal, CA	22.5%	7.1%	14.4%	44.0%	7	8	10	8	78.3	
Lexington, US	33.9%	3.6%	13.5%	51.0%	16	2	8	9	90.7	
Atlanta, US	31.6%	7.6%	14.3%	53.5%	12	9	9	10	95.2	
Buffalo, US	31.2%	7.7%	15.5%	54.4%	9	10	13	11	96.8	
Youngstown, US	32.1%	6.3%	16.1%	54.5%	13	6	15	12	97.0	
Philadelphia, US	33.4%	6.3%	15.9%	55.6%	15	7	14	13	98.9	
Nashville, US	33.2%	8.0%	14.5%	55.7%	14	12	11	14	99.2	
Detroit, US	31.5%	8.5%	16.2%	56.1%	11	14	16	15	99.9	
Boston, US	36.6%	5.9%	15.0%	57.5%	17	5	12	16	102.3	
Houston, US	31.5%	10.0%	16.5%	57.9%	10	16	17	17	103.1	

The following tables details the results for all 17 cities, sorted in order of ascending TTI. It is purely coincidental that for these sectors the TTI of 100.0 (which represents the U.S. average) also has a TETR of close to 100 percent.

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>SERVICES - 2011 SCENARIO (CDN\$ AT 80¢)</b>										
Vancouver, CA	25.3%	0.8%	32.9%	59.0%	1	2	2	1	57.7	
Calgary, CA	25.3%	4.3%	32.7%	62.3%	1	6	1	2	61.0	
Waterloo Region, CA	25.4%	1.2%	42.7%	69.3%	3	3	5	3	67.9	
Ottawa, CA	25.4%	1.2%	43.1%	69.7%	3	3	6	4	68.3	
Toronto, CA	25.4%	1.2%	44.1%	70.7%	3	3	7	5	69.2	
Monterrey, MX	29.3%	5.8%	36.7%	71.8%	8	7	3	6	70.3	
Winnipeg, CA	27.3%	12.1%	41.8%	81.2%	7	15	4	7	79.5	
Montreal, CA	27.2%	0.0%	54.5%	81.6%	6	1	14	8	79.9	
Atlanta, US	35.4%	8.2%	50.5%	94.0%	9	10	11	9	92.1	
Youngstown, US	36.0%	8.9%	49.1%	94.0%	11	12	10	9	92.1	
Lexington, US	41.1%	7.6%	47.8%	96.5%	16	8	8	11	94.5	
Detroit, US	35.4%	8.6%	55.7%	99.7%	9	11	15	12	97.7	
Nashville, US	38.3%	14.5%	49.0%	101.8%	13	17	9	13	99.7	
Houston, US	37.5%	12.8%	53.3%	103.5%	12	16	13	14	101.3	
Buffalo, US	40.0%	11.7%	52.8%	104.5%	14	14	12	15	102.3	
Philadelphia, US	42.0%	8.0%	55.9%	105.9%	17	9	16	16	103.7	
Boston, US	40.6%	9.7%	58.0%	108.4%	15	13	17	17	106.1	

City	Effective Tax Rates				Ranks				TTI	
	CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR		
<b>RESEARCH &amp; DEVELOPMENT - 2011 SCENARIO (CDN\$ AT 80¢)</b>										
Calgary, CA	-18.7%	10.0%	18.2%	9.6%	1	8	1	1	9.5	
Vancouver, CA	0.0%	0.3%	18.2%	18.4%	3	2	1	2	18.4	
Montreal, CA	-14.2%	0.0%	36.7%	22.5%	2	1	8	3	22.4	
Waterloo Region, CA	4.3%	0.4%	26.0%	30.7%	7	3	3	4	30.6	
Ottawa, CA	4.2%	0.4%	26.1%	30.8%	6	3	4	5	30.7	
Toronto, CA	4.1%	0.5%	26.5%	31.0%	5	5	5	6	30.9	
Winnipeg, CA	0.0%	23.6%	27.9%	51.5%	3	16	6	7	51.4	
Monterrey, MX	31.5%	5.5%	33.4%	70.4%	8	6	7	8	70.2	
Lexington, US	39.3%	12.1%	43.2%	94.6%	16	11	9	9	94.3	
Youngstown, US	35.6%	14.0%	45.6%	95.3%	11	13	10	10	95.0	
Boston, US	36.2%	11.3%	48.6%	96.0%	12	10	12	11	95.7	
Detroit, US	35.0%	10.8%	50.6%	96.4%	9	9	14	12	96.1	
Atlanta, US	35.0%	14.7%	49.7%	99.4%	9	14	13	13	99.0	
Buffalo, US	37.7%	13.3%	51.0%	102.0%	13	12	15	14	101.7	
Philadelphia, US	41.5%	8.9%	51.8%	102.1%	17	7	16	15	101.8	
Nashville, US	38.6%	24.0%	47.0%	109.6%	15	17	11	16	109.3	
Houston, US	38.0%	20.6%	57.4%	116.0%	14	15	17	17	115.6	

## Appendix B – 2009 results by manufacturing industry

The following tables details the results of the 2009 Scenario (dollar at par) for individual manufacturing industries. This represents the 2009 equivalent of the table shown on page 11 of this report. For the Ontario cities, the table below highlights in green where the ranking for a specific industry equals or betters that city's ranking in the manufacturing average, while blue highlights industries where the city's ranking is below the manufacturing average.

### Total Tax Index Comparison, By Manufacturing Industry, 2009 Scenario

(Canadian dollar at par)

City	Total Tax Index & (Rank)										
	Mfg Avg	Aero space	Auto parts	Chem Products	Elect ronics	Food Process.	Metal Machine	Pharma	Plastic Products	Precision Comp.	Telecom Equip.
Calgary	67.5 (1)	64.9 (1)	68.2 (1)	56.8 (1)	66.7 (2)	70.3 (2)	77.8 (2)	61.7 (1)	77.0 (3)	62.4 (1)	48.0 (1)
Montreal	87.3 (5)	93.9 (9)	91.6 (5)	74.9 (4)	86.8 (6)	87.5 (8)	100.4 (13)	76.1 (5)	99.6 (10)	92.3 (8)	69.1 (4)
Ottawa	90.1 (8)	91.1 (7)	96.6 (10)	80.2 (7)	89.7 (8)	87.2 (7)	101.1 (14)	86.4 (8)	100.9 (13)	85.6 (7)	77.8 (8)
Toronto	88.8 (7)	89.9 (6)	94.9 (9)	78.8 (6)	88.7 (7)	86.2 (6)	99.6 (10)	84.8 (7)	99.8 (11)	84.2 (6)	76.3 (7)
Vancouver	71.0 (2)	67.8 (2)	73.4 (3)	63.3 (2)	66.6 (1)	76.2 (3)	83.3 (3)	65.9 (2)	76.8 (2)	64.9 (2)	59.6 (2)
Waterloo Region	87.3 (6)	88.0 (5)	93.1 (7)	78.2 (5)	86.6 (5)	85.1 (5)	98.0 (8)	83.6 (6)	97.5 (7)	82.9 (5)	75.7 (6)
Winnipeg	81.8 (4)	79.8 (4)	80.7 (4)	73.7 (3)	79.2 (4)	84.9 (4)	93.2 (5)	74.8 (4)	90.0 (5)	77.8 (4)	68.5 (3)
Monterrey	72.4 (3)	70.5 (3)	68.5 (2)	86.3 (8)	75.6 (3)	65.3 (1)	68.6 (1)	71.4 (3)	67.5 (1)	68.5 (3)	70.5 (5)
Atlanta	95.2 (10)	94.8 (10)	97.4 (11)	96.0 (13)	94.4 (11)	96.0 (12)	95.3 (6)	93.7 (10)	95.3 (6)	96.4 (10)	96.2 (10)
Boston	102.0 (16)	104.2 (17)	104.9 (16)	99.1 (15)	104.8 (17)	97.6 (13)	103.9 (17)	102.4 (16)	104.0 (17)	102.8 (16)	99.2 (15)
Buffalo	96.8 (11)	98.2 (13)	108.2 (17)	91.9 (11)	96.7 (12)	91.9 (10)	100.1 (11)	100.2 (14)	99.8 (11)	98.7 (13)	98.6 (14)
Detroit	99.9 (15)	101.3 (14)	103.4 (14)	97.4 (14)	101.8 (15)	98.6 (15)	101.3 (15)	98.0 (13)	101.7 (15)	101.4 (14)	98.2 (12)
Houston	103.1 (17)	103.8 (16)	100.3 (13)	105.0 (17)	104.7 (16)	103.2 (16)	100.3 (12)	101.8 (15)	101.5 (14)	106.0 (17)	104.3 (16)
Lexington	90.8 (9)	92.6 (8)	92.8 (6)	89.8 (10)	91.5 (9)	89.2 (9)	90.1 (4)	91.7 (9)	89.8 (4)	95.4 (9)	94.2 (9)
Nashville	99.1 (14)	97.8 (12)	98.4 (12)	99.1 (15)	100.3 (13)	97.9 (14)	97.7 (7)	102.5 (17)	97.9 (8)	96.8 (11)	106.4 (17)
Philadelphia	98.9 (13)	101.5 (15)	104.6 (15)	94.3 (12)	100.6 (14)	94.9 (11)	103.0 (16)	97.5 (12)	102.2 (16)	102.3 (15)	98.4 (13)
Youngstown	97.0 (12)	96.2 (11)	93.9 (8)	88.9 (9)	92.1 (10)	109.3 (17)	98.6 (9)	94.3 (11)	99.1 (9)	98.6 (12)	96.2 (11)

## Appendix C – Our approach

### Calculation of total tax costs

This report uses two separate measures for total tax costs, with both measures incorporating all manner of taxes levied on corporations – broadly speaking income taxes, capital taxes, sales taxes, property taxes, miscellaneous local business taxes, and statutory labour costs (that is, statutory plan costs and other wage-based taxes).

This total tax cost is compared between cities using a Total Tax Index (TTI) for each location. The TTI is a measure of the total taxes paid by similar corporations in a particular location and industry, calculated as a percentage of total taxes paid by similar corporations in the United States using the following formula:

$$\frac{\text{Total taxes paid by corporations in this location and industry}}{\text{Total taxes paid by similar corporations in the United States}}$$

To further examine the results of the TTI, and to explore the specific tax components that drive these results, this study defines a second measure of total taxes, which expresses tax costs as an effective rate, rather than as an index of taxes actually paid. This measure is the Total Effective Tax Rate (TETR), which is calculated as follows:

$$\frac{\text{Total taxes paid by corporations}}{\text{Standardized net income before income tax}}$$

In calculating taxes, the study includes income taxes levied by all levels of government (national, regional and/or local), reflecting specific tax income rules for each jurisdiction (as discussed in Chapter 4). Other taxes are also calculated according to specific local rules. Labour taxes and other taxes not based on income are calculated to reflect actual business costs in each location, using data on wage rates, real property values, and other relevant business cost factors from KPMG's 2008 comparison of international business costs, *Competitive Alternatives*.

In the TETR formula, the denominator is a fixed-dollar (U.S.) amount in all locations – standardized net income before income taxes. This allows income taxes paid to be compared in both absolute dollar terms, using the TTI, and in percentage terms, using the TETR. As explained in Chapter 4, the TETR is the sum of the effective corporate income tax rate (net of incentives), the effective rate of other corporate taxes, and the effective rate of other statutory labour costs. This formula produces the Total Effective Tax Rate, which allows other corporate taxes and statutory labour costs (which are not calculated based on income) to be compared in percentage terms. Rankings obtained using TETR are same as those obtained using the TTI.

Using the formula for TETR, it is possible for TETR to exceed 100 percent, particularly for service and R&D operations. As the table on page 26 shows, this does not mean that government taxes are forcing a company into a net loss situation. Because only income taxes are excluded from net income in the denominator, TETR can exceed 100 percent while the company still maintains a positive net income after tax.

For example, in Houston, the total tax cost for R&D operations is U.S.\$1,087,000 per year as compared to net income before income tax of U.S.\$937,000, for a TETR of 116.0 percent. However, the company's net after-tax profit is still U.S.\$581,000. This table also illustrates the calculation of the TTI, with the total tax cost in the United States (\$940,000) being indexed to 100.0, while the total tax cost in Houston (U.S.\$1,087,000) is 15.6 percent higher, with a TTI of 115.6.

This example also shows that, for some operations, it is possible for the TTI and the TETR to be quite close numerically (TTI of 115.6 versus TETR of 116.0 percent). This outcome is an entirely coincidental, resulting from the combination of net income assumptions and calculated tax costs in particular industries. For other industry scenarios, TTI and TETR are numerically very different. However, in all circumstances, rankings obtained using TETR are same as those obtained using the TTI.

Example Calculation of Total Tax Index and Total Effective Tax Rate Based on R&D sector results <sup>1</sup>		USD\$'000 per annum	
		Houston	United States
Total revenue <sup>2</sup>		10,600	10,376
All non-tax operating expenses		8,932	8,836
Statutory labour costs	SLC	538	444
Other corporate taxes	OCT	193	159
Net income before income tax (standardized) <sup>3</sup>	NIBIT	937	937
Corporate income taxes	CIT	356	337
Net profit after tax		581	600
Total tax cost	TTC=SLC+OCT+CIT	1,087	940
<b>Total Tax Index</b>	<b>TTI=TTC<sub>X</sub>/TTC<sub>US</sub> x 100</b>	<b>115.6</b>	<b>100.0</b>
Effective rates for:			
Corporate income taxes (net of incentives)	=CIT/NIBIT	38.0%	36.0%
Other corporate taxes	=OCT/NIBIT	20.6%	17.0%
Statutory labor costs	=SLC/NIBIT	57.4%	47.4%
<b>Total Effective Tax Rate</b>	<b>TETR=TTC/NIBIT</b>	<b>116.0%</b>	<b>100.3%</b>

1: 2009 Scenario, R&D sector results.

2: Is assumed to vary by location to maintain standard net income before income tax.

This reflects companies being able to charge higher prices for goods and services when located in higher-cost regions. This assumption can be found in some real-world situations, such as higher prices in London, England, and/or premium prices that can be obtained for German-made goods.

3: Standardized for all locations to provide a common denominator for measuring taxes not based on income.

## Additional background on the KPMG *Competitive Alternatives* study

*Competitive Alternatives* is KPMG's guide to comparing business locations in North America, Europe, and Asia Pacific. With a primary focus on international business costs, the *Competitive Alternatives* report measures the combined impact of 27 significant cost components that are most likely to vary by location, as applied to specific industries and business operations. *Competitive Alternatives* also includes secondary comparisons of other factors that influence the location competitiveness.

The six-month research program for *Competitive Alternatives* (July 2007 to January 2008) covered 136 cities in ten countries, and included all cities covered in this report. More than 2,000 individual business scenarios were examined, analyzing more than 50,000 items of data. The basis for the business cost comparisons is the after-tax cost of start-up and operation for representative business operations in 12 industries, over a 10-year planning horizon.

A tax supplement, *Competitive Alternatives 2008: Focus on Tax*, complemented the main report, expanding the coverage of taxation issues. That study and this limited-scope partial update share much of the same methodology, modeling assumptions, and data sources developed for *Competitive Alternatives*.

Full details of the specific tax rates applied for corporate income tax and other corporate taxes in each jurisdiction are set out in Appendix D of this report.

Further information on study methodology and scope, including key modeling assumptions, can be found in Chapter 1 of *Competitive Alternatives 2008*.

Full details of data sources used for tax information and the broader business cost factors (such as local wages and property values) that impact this study can be found in Appendix F of the *Competitive Alternatives 2008* Volume II report.

These documents are available from: [www.CompetitiveAlternatives.com/](http://www.CompetitiveAlternatives.com/) download

## Appendix D – Tax assumptions, comparisons

This appendix presents the tax rate assumptions used in the comparative analysis, along with summary measures of tax burden resulting from the analysis.

In this study, income taxes have been calculated on the “tax payable” basis. Deferred income tax balances (both positive and negative) have been excluded, since these accounting book entries are generally not relevant for location decision making.

All tax rates listed here are current as at January 1, 2009, based on latest information available as at March 25, 2009. Later changes in tax rates announced between March 26, 2009 and July 31, 2009 are referenced in footnotes and incorporated into the analysis of the 2011 Scenario in this report. Taxes are grouped based on substance rather than legal form, and legislated names of specific taxes in certain jurisdictions differ from the generic titles used in this study.

Given the broad scope of this assignment, a number of simplifying assumptions have been made with respect to specific taxes. These simplifying assumptions are consistent with the business model assumptions used in this study.

Land transfer taxes have been incorporated into all land values used in this study, but are not presented in this table. Payroll taxes have been incorporated into statutory benefit costs shown in this report, and are also not presented in this table.

While care has been taken in performing this analysis and developing the findings, the resulting comparisons are of a general nature. All factors examined in this study are subject to change over time. The results of this study should not be used to draw conclusions regarding particular jurisdictions with respect to particular elements of taxation, or regarding the merits of locating any specific facility in one jurisdiction over another. In all circumstances, professional advice should be sought to address any specific taxation or facility location issues.

KPMG shall have no liability or responsibility to any third party who may use or place any reliance on this report.

CANADA							
Federal, regional, and local tax rates – 2009, in percent							
	Calgary AB	Montreal QC	Ottawa ON	Toronto ON	Vancouver BC	Waterloo Region ON	Winnipeg MB
<b>Corporate Income Tax<sup>a</sup></b>							
Federal	19.00 <sup>o</sup>	19.00 <sup>o</sup>	19.00 <sup>o</sup>	19.00 <sup>o</sup>	19.00 <sup>o</sup>	19.00 <sup>o</sup>	19.00 <sup>o</sup>
Regional	10.00	11.90	14.00 <sup>p</sup>	14.00 <sup>p</sup>	11.00 <sup>q</sup>	14.00 <sup>p</sup>	13.00 <sup>r</sup>
Local	–	–	–	–	–	–	–
Combined Income Tax Rate	29.00	30.90	33.00	33.00	30.00	33.00	32.00
<i>Manufacturing tax rate reduction<sup>b</sup></i>							
Federal	–	–	–	–	–	–	–
Regional	–	–	2.00 <sup>s</sup>	2.00 <sup>s</sup>	–	2.00 <sup>s</sup>	–
Combined Manufacturing Tax Rate	29.00	30.90	31.00	31.00	30.00	31.00	32.00
Effective income tax rate, 12-operation average <sup>c</sup>	18.81	16.05	23.68	23.61	20.20	23.72	19.54
<b>Capital Tax<sup>d</sup></b>							
<i>Federal Tax Based On:</i>							
Capital stock	–	–	–	–	–	–	–
Net equity	–	–	–	–	–	–	–
Total assets	–	–	–	–	–	–	–
<i>Regional Tax Based On:</i>							
Capital stock	–	–	–	–	–	–	–
Net equity	–	–	–	–	–	–	–
Total assets	–	0.240 <sup>t</sup>	0.225 <sup>u</sup>	0.225 <sup>u</sup>	–	0.225 <sup>u</sup>	0.300 <sup>v</sup>
<b>Sales Tax<sup>e</sup></b>							
<i>Refundable GST/VAT</i>							
Federal <sup>f</sup>	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Regional <sup>f</sup>	–	7.50 <sup>y</sup>	–	–	–	–	–
<i>Non-Refundable Sales Tax</i>							
Regional <sup>f</sup>	–	–	8.00 <sup>w</sup>	8.00 <sup>w</sup>	7.00 <sup>x</sup>	8.00 <sup>w</sup>	7.00
Local <sup>f</sup>	–	–	–	–	–	–	–
<b>Property Tax<sup>g</sup></b>							
Land <sup>h</sup>	1.80 <sup>z</sup>	3.91	4.23	3.00	1.54	4.81	3.86 <sup>z</sup>
Buildings <sup>h</sup>	1.80 <sup>z</sup>	3.91	4.23	3.00	1.54	4.81	3.86 <sup>z</sup>
Machinery & equipment <sup>i</sup>	–	–	–	–	–	–	–
Inventory <sup>j</sup>	–	–	–	–	–	–	–
Total property-based taxes: <sup>k</sup>							
7-operation (mfg.) average	\$2.54	\$3.94	\$4.70	\$4.22	\$2.11	\$4.02	\$3.43
5-operation (non-mfg) average	\$2.62	–	–	–	–	–	\$1.70
<b>Local Business Taxes</b>							
<i>Taxes Based On:</i>							
Gross Receipts <sup>l</sup>	–	–	–	–	–	–	–
Salaries <sup>m</sup>	–	–	–	–	–	–	–
Employees <sup>n</sup>	–	–	–	–	–	–	–

## CANADA

## Federal, regional, and local tax rates

## Footnotes

- a Percentage of taxable income. Minor adjustments required in the calculation of taxable income in each jurisdiction are not individually disclosed. Tax rates shown in this exhibit are for the size of entity examined in this study. Many jurisdictions offer lower income tax rates for small businesses.
- b Manufacturing tax rate reductions reduce on a pro-rata basis where a significant component of a company's payroll or capital assets are not devoted to manufacturing or processing operations.
- c The 12-operation average effective income tax rates for this study vary from the combined nominal income tax rates in each location due to the impact of adjustments to taxable income and income tax credits.
- d Percentage of taxable capital, determined on the general basis indicated. In many jurisdictions, the general tax base indicated here is subject to minor adjustment.
- e Percentage of sales price.
- f General rate. Other rates may apply to specified articles.
- g The Property Tax category includes all property-based taxes, including the property-based component of multi-base local business taxes. Property tax rates relate to the suburban or urban areas identified in the real estate research for this study as offering sites suitable for the types of operation being examined.
- h Percentage of current market value, incorporating current tax rates, assessment factors, base-year price equalization and rental yields (estimated where required).
- i Percentage of depreciated value.
- j Percentage of cost.
- k Total property-based taxes in US \$ per square foot of building space.
- l Percentage of gross sales.
- m Percentage of gross payroll.
- n Tax per employee.
- o Federal tax rate is scheduled to decrease to 18.0% in 2010, 16.5% in 2011, and 15% in 2012 and thereafter.
- p Ontario's 2009 budget (released March 26, 2009) announced plans to decrease the provincial corporate income tax rate to 12.0% on July 1 2010, to 11.5% on July 1 2011, to 11.0% on July 1 2012, and to 10.0% on July 1 2013.
- q British Columbia's tax rate is scheduled to decrease to 10.5% in 2010, and to 10.0% in 2011.
- r Manitoba's tax rate decreased to 12.0% on July 1, 2009.
- s Ontario's 2009 budget (released March 26, 2009) announced plans to decrease the manufacturing tax rate reduction to 1.5% on July 1 2011, to 1.0% on July 1 2012, and to eliminate the reduction from July 1 2013. This rate reduction is being eliminated because the general corporate income tax rate is being reduced such that by July 1, 2013, the income tax rate for both general corporations and manufacturing and processing corporations will be 10%.
- t Quebec Capital Tax applies once taxable capital exceeds CDN \$1 million. This exemption is reduced by one dollar for every three dollars by which taxable capital exceeds this amount. Manufacturers are exempt. The tax rate is scheduled to decrease to 0.120% in 2010 and to be eliminated in 2011.
- u Ontario Capital Tax applies to taxable capital in excess of CDN \$15 million. Manufacturers are exempt. The tax rate is scheduled to decrease to 0.150% on January 1 2010, and to be eliminated as of July 1 2010.
- v Manitoba Capital Tax applies once taxable capital exceeds CDN \$10 million. Manufacturers are exempt. For 2010, the rate will reduce to 0.2% and will apply only to capital in excess of CDN \$20 million. The tax will be eliminated for 2011 and later years.
- w Ontario's 2009 budget (released March 26, 2009) announced plans to convert the 8% provincial non-refundable sales tax to an 8% refundable sales tax, harmonized with the federal GST, from July 1, 2010. Businesses with taxable sales in excess of CDN \$10 million will not be able to claim input tax credits in respect of provincial taxes paid on energy, certain telecommunication services, road vehicles, food, beverages, and entertainment for five years, and then input tax credits for these items will be phased in over the following three years.
- x In July 2009, British Columbia announced plans to convert the 7% provincial non-refundable sales tax to a 7% refundable sales tax, harmonized with the federal GST, from July 1, 2010. Businesses with taxable sales in excess of CDN \$10 million will not be able to claim input tax credits in respect of provincial taxes paid on energy, certain telecommunication services, road vehicles, food, beverages, and entertainment for five years, and then input tax credits for these items will be phased in over the following three years.
- y Quebec Sales Tax applies to the price of the goods, plus any federal GST applicable on the sale. The 2009 Quebec budget announced plans to increase the Quebec Sales Tax to 8.5% in 2011.
- z Incorporates both property tax and property-based business/occupancy tax rates.

MEXICO		
Federal, regional, and local tax rates – 2009, in percent		
	Monterrey	Footnotes
<b>Corporate Income Tax<sup>a</sup></b>		
Federal	28.00	<i>a</i> Percentage of taxable income. Minor adjustments required in the calculation of taxable income in each jurisdiction are not individually disclosed. Tax rates shown in this exhibit are for the size of entity examined in this study. Many jurisdictions offer lower income tax rates for small businesses.
Regional	–	
Local	–	
Combined Income Tax Rate	28.00	<i>b</i> Manufacturing tax rate reductions reduce on a pro-rata basis where a significant component of a company's payroll or capital assets are not devoted to manufacturing or processing operations.
<b>Manufacturing tax rate reduction<sup>b</sup></b>		
Federal	–	<i>c</i> The 12-operation average effective income tax rates for this study vary from the combined nominal income tax rates in each location due to the impact of adjustments to taxable income and income tax credits.
Regional	–	
Combined Manufacturing Tax Rate	28.00	<i>d</i> Percentage of taxable capital, determined on the general basis indicated. In many jurisdictions, the general tax base indicated here is subject to minor adjustment.
Effective income tax rate, 12-operation average <sup>c</sup>	28.58 <sup>o</sup>	<i>e</i> Percentage of sales price.
<b>Capital Tax<sup>d</sup></b>		
<i>Federal Tax Based On:</i>		
Capital stock	–	<i>f</i> General rate. Other rates may apply to specified articles.
Net equity	–	<i>g</i> The Property Tax category includes all property-based taxes, including the property-based component of multi-base local business taxes. Property tax rates relate to the suburban or urban areas identified in the real estate research for this study as offering sites suitable for the types of operation being examined.
Total assets	–	
<i>Regional Tax Based On:</i>		
Capital stock	–	<i>h</i> Percentage of current market value, incorporating current tax rates, assessment factors, base-year price equalization factors and rental yields (estimated where required).
Net equity	–	<i>i</i> Percentage of depreciated value. Special depreciation rates may apply for property tax purposes.
Total assets	–	<i>j</i> Percentage of cost.
<b>Sales Tax<sup>e</sup></b>		
<i>Refundable GST/VAT</i>		
Federal <sup>f</sup>	15.00	<i>k</i> Total property-based taxes in US \$ per square foot of building space.
Regional <sup>f</sup>	–	
<i>Non-Refundable Sales Tax</i>		
Regional <sup>f</sup>	–	<i>l</i> Percentage of gross sales.
Local <sup>f</sup>	–	<i>m</i> Percentage of gross payroll.
<b>Property Tax<sup>g</sup></b>		
Land <sup>h</sup>	0.30	<i>n</i> Tax per employee.
Buildings <sup>h</sup>	0.30	
Machinery & equipment <sup>i</sup>	–	<i>o</i> Effective income tax rates for Mexico incorporate the impact of the Flat Business Tax (IETU) minimum tax regime, which took effect as of January 1, 2008.
Inventory <sup>j</sup>	–	
<b>Total property-based taxes:<sup>k</sup></b>		
7-operation (mfg.) average	\$0.17	<i>p</i> Half exemption applies for new companies for the first year of operation.
5-operation (non-mfg) average	–	
<b>Local Business Taxes</b>		
<i>Taxes Based On:</i>		
Gross Receipts <sup>l</sup>	–	
Salaries <sup>m</sup>	2.00 <sup>o</sup>	
Employees <sup>n</sup>	–	



## UNITED STATES

## Federal, regional, and local tax rates

## Footnotes

- a Percentage of taxable income. Minor adjustments required in the calculation of taxable income in each jurisdiction are not individually disclosed. Tax rates shown in this exhibit are for the size of entity examined in this study. Many jurisdictions offer lower income tax rates for small businesses.
- b Manufacturing tax rate reductions reduce on a pro-rata basis where a significant component of a company's payroll or capital assets are not devoted to manufacturing or processing operations.
- c The 12-operation average effective income tax rates for this study vary from the combined nominal income tax rates in each location due to the impact of adjustments to taxable income and income tax credits.
- d Percentage of taxable capital, determined on the general basis indicated. In many jurisdictions, the general tax base indicated here is subject to minor adjustment.
- e Percentage of sales price.
- f General rate. Other rates may apply to specified articles.
- g The Property Tax category includes all property-based taxes, including the property-based component of multi-base local business taxes. Property tax rates relate to the suburban or urban areas identified in the real estate research for this study as offering sites suitable for the types of operation being examined.
- h Percentage of current market value, incorporating current tax rates, assessment factors, base-year price equalization factors and rental yields (estimated where required).
- i Percentage of depreciated value. Special depreciation rates may apply for property tax purposes.
- j Percentage of cost.
- k Total property-based taxes in US \$ per square foot of building space.
- l Percentage of gross sales.
- m Percentage of gross payroll.
- n Tax per employee.
- o Marginal tax rate applies if earnings exceed US \$335,000 and are less than US \$10 million. All US taxable income in excess of US \$75,000 is taxed at marginal rates of 34% to 39%. Lower marginal rates (15% to 25%) apply to the first US \$75,000 of taxable income.
- p Effective impact of 6% tax deduction for Qualified Production Activities Income (QPAI). This deduction is scheduled to increase to 9% from 2010 (giving an effective impact approximately equal to a 3% tax rate reduction for manufacturers from 2010). Benefit at the federal level is reduced where a state also permits the QPAI deduction, as this reduces the federal deduction for state income tax paid. However, in these instances, the effective value of the saving at the state level is also shown, resulting in a higher total rate reduction than in states that do not permit the QPAI deduction. Effective rates shown are further adjusted to reflect the impact of state deductibility of federal and/or state taxes as relevant, to be consistent with the presentation of Combined Income Tax Rate.
- q Interstate and export sales from this state are not attributed back to the state-of-origin for the purpose of allocating income between states (no "sales throwback"). For companies with a single main location for operations (as is assumed in this study), this may result in a portion of taxable income not being subject to state income tax. The extent of this benefit depends on the weighting given to the sales factor in each state's interstate income apportionment formula.
- r New York State Franchise Tax is calculated as the greater of 7.1% of taxable income (6.5% for manufacturers) or 0.15% of taxable capital. Where tax is based on capital, maximum annual tax is US \$350,000.
- s Top marginal tax rate. Lower rates of tax apply to the first US \$5,000 to US \$1,000,000 of income, depending on the state. Tax calculations in this study reflected the benefit of lower marginal tax rates as appropriate.
- t Corporations pay the greater of Ohio Corporate Income Tax or Ohio Business Franchise Tax (0.4% of net equity). These taxes are being phased out progressively between 2006 and 2010 in favour of a Commercial Activity Tax (gross receipts tax). The Commercial Activity Tax is being progressively phased in between 2005 and 2009. All sales to customers located outside of Ohio are exempt from the Commercial Activity Tax. The rate shown represents weighted average effective rate in effect throughout 2009.
- u Texas Franchise Tax based on new "net margin" tax base for 2009 and later years.
- v Michigan Business Tax includes both income tax (standard rate of 4.95%) and modified gross receipts tax (standard rate of 0.8%). Rates shown for both portions of this tax include the 21.99% temporary surcharge that applies on top of the standard rate through to 2017.
- w In calculating the combined tax rate, the regional and local tax rates have been reduced by (1-Federal tax rate) to recognize the deduction permitted at the federal level for regional/local income taxes paid.
- x In calculating the combined tax rate, the regional tax rate has been reduced by (1-Regional tax rate) to recognize the deduction permitted at the regional level for regional taxes paid.
- y In calculating the combined tax rate, the local tax rate has been reduced by (1-Regional tax rate) to recognize the deduction permitted at the regional level for local income taxes paid.
- z Approximate rate for firms with US \$1 million to US \$20 million of taxable capital. Actual rates vary based on amount of taxable capital. Maximum annual tax is US \$5,000.
- aa Massachusetts corporate income tax rate is scheduled to decrease to 8.75 for 2010, 8.25% for 2011, and 8.00% for 2012 and later years.
- ab Massachusetts Excise Tax on Capital effectively applies only to inventory and supplies, not total assets. For manufacturing firms, excise tax also applies to machinery and equipment, in lieu of local property tax.
- ac Pennsylvania Capital Stock Tax applies to the average of 75% of capital stock and average book profits for the previous five years. The first US \$125,000 of taxable value is exempt. Manufacturing and research firms are both exempt from Capital Stock Tax. This tax is scheduled to be reduced to 0.089% for 2010 and be eliminated for 2011 and later years.
- ad Tax base is the greater of net worth or real and tangible property.
- ae The Massachusetts 2010 Budget (signed June 29, 2009) includes an increase in the state sales tax rate to 6.25% effective August 1, 2009.
- af In Massachusetts, machinery and equipment of manufacturing and processing firms are exempt from local property tax.
- ag This study incorporates the impact of a Michigan state exemption and refundable tax credit for a portion of property tax paid on manufacturing machinery and equipment.

## Appendix E – Disclaimer

This report ("Report") was commissioned by the Ontario Ministry of Finance pursuant to a consulting services agreement.

Because of its special nature, this report is not suited for any purpose other than to assist the Ontario Ministry of Finance with its understanding of the potential impact of the major tax changes announced in the 2009 Ontario Budget on the tax competitiveness of Ontario as compared to key competing North American jurisdictions and, as such and as agreed in the consulting services agreement, is based on specific scenarios provided by the Ontario Ministry of Finance. Accordingly, KPMG does not accept any liability or responsibility to any third party who may use or place any reliance on our report.

If this report is received by anyone other than Ontario Ministry of Finance, the recipient is placed on notice that the attached report has been prepared solely for our client for its own use and this report and its contents may not be shared with or disclosed to anyone by the recipient without the express written consent of Ontario Ministry of Finance. KPMG LLP does accept any liability or responsibility to any third party who may use or place any relevant on our report. In all circumstance, professional advice should be sought to address any specific taxation issues in any jurisdiction or facility location issues.

This report is based on information collected primarily in August and September 2009 and incorporates changes announced up to July 31, 2009 that take effect in 2009 or at specified later dates. Tax rates and other tax-related information are subject to further change as a result of new legislation, judicial decisions, and administrative pronouncements (not incorporated in this analysis). Exchange rates and other cost factors will change over time.

While care has been taken in performing this analysis and developing the findings, the results are of a general nature, are subject to the disclaimers in this report, and should not be used to draw conclusions regarding particular jurisdictions with respect to particular elements of taxation, or regarding the merits of locating any specific facility in one jurisdiction over another. In all circumstances, professional advice should be sought to address any specific taxation issues in any jurisdiction or facility location issues.