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Competitive Alternatives

Special Report: Focus on Tax

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Summary

This report is a supplement to the 2012 edition of *Competitive Alternatives*, KPMG's guide to international business location costs. It assesses the general tax competitiveness of the 113 cities in 14 countries studied in the main research project, focusing on 55 major international cities. For the first time, the 2012 study features four major high growth countries—Brazil, Russia, India and China—frequently referred to as the "BRIC Countries". The 10 other countries examined are Australia, Canada, France, Germany, Italy, Japan, Mexico, the Netherlands, the United Kingdom, and the United States. Details of all cities covered are included in Appendix A.

Our goal in preparing this supplement is to offer a wide-ranging methodology to assess the numerous and complex factors affecting a company's tax burden, in order to provide a simple and effective approach for cross-location comparisons based on the tax results of different business scenarios.

To this end, this report compares the total tax burden faced by companies in each country and city, including:

- Corporate income taxes
- Capital taxes
- Sales taxes
- Property taxes
- Miscellaneous local business taxes
- Statutory labor costs (i.e., statutory plan costs and other wage-based taxes).

Total tax costs are compared between countries and cities using a Total Tax Index (TTI) for each location. The TTI is a measure of the total taxes paid by corporations in a particular location, expressed as a percentage of total taxes paid by corporations in the US. Thus, the United States has a TTI of 100.0, which represents the benchmark against which the other countries and cities are scored. (For details of the calculation, see Appendix B).

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. Incentives based on 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 dollars, in all locations. In this way, the amount of income tax paid can be compared among locations both 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 that would be incurred by each business in each location. For example, property tax costs in each US city are calculated by applying the property tax assessment rules for each city to actual property values for that city.
- **Statutory labor costs (SLC):** These costs include both statutory plan costs and other wage-based taxes. These costs are calculated based on rates and rules of each jurisdiction, as applied to actual wage and salary levels for that jurisdiction. For example, labor taxes are based on Mexican wage rates in Mexico and German wage rates in Germany, reflecting actual costs incurred by companies operating in different jurisdictions.

Tax rates used in this study are those in effect as at January 1, 2012. Tax calculations over the 10-year analysis horizon incorporate future tax changes announced on or before January 1, 2012, that will come into force during the next 10 years.

Key findings

In addition to the observations in the rest of this report regarding the overall tax costs of specific locations for the purposes of making business site decisions, our analysis of the results of this study has led to the following general observations:

- **Tax policy varies widely by country.** Our study reveals that there is no standard approach in setting tax policy among the countries examined. Although the types of taxes used to raise government revenues are more or less the same, there is a huge range in how these taxes are weighted and applied. Some countries have a tax policy focused on delivering a low corporate income tax rate in order to compete for more businesses. These countries may need to rely more heavily on other taxes, such as sales or payroll taxes, to derive their tax revenues. Similarly, some countries use their tax policies to attract certain types of businesses with targeted incentives for activities such as manufacturing and research & development (R&D). A country's tax policy choices can significantly affect the tax cost of doing business in that country.
- **Differences in how taxes are weighted and applied create complexity.** While companies often use a country's corporate income tax rate as a proxy for overall tax costs in a location, this rate does not tell the whole story. Variations in how taxes are weighted and applied complicate efforts to compare tax costs effectively and highlight the need to make comparisons based on the complete range of tax costs that apply in each location in the context of the specific business. Consider France and India; as discussed in Chapter 3, these two countries rank 2nd and 8th respectively for their rates of effective corporate income tax. However, once all other taxes and statutory labor costs are considered, India's rank rises to 1st, largely due to its very low statutory labor costs, while France's rank falls to 14th, largely due to its heavier reliance on payroll and other taxes.
- **Tax costs vary widely by industry.** The overall results for each location combine the results of different types of business operations, and results among the different business sectors vary widely. For companies in service industries, labor costs generally represent a more significant cost factor than for other companies and, so, the impact of statutory labor costs on these companies is more of an issue. Companies in the manufacturing industry are more capital intensive and less affected by statutory labor costs, so the imposition of capital taxes, property taxes, and the availability of tax incentives for manufacturing activities are more important considerations in location decisions. R&D operations see the most extreme variation in tax costs among countries, due to intense competition among many countries to attract R&D businesses by offering generous tax incentives.
- **Tax costs vary more widely than most other costs.** In the main *Competitive Alternatives 2012* study, we noted that income taxes typically represent up to 18 percent of location-sensitive costs. This cost is lower than other main business costs, such as labor (40 – 84 percent of location-specific costs), facilities (2 – 19 percent) and transportation (6 – 22 percent) costs. However, even though taxes do not comprise the largest portion of overall costs, there is much greater variation in tax costs among locations. Since tax costs are likely to range more widely than other costs, they can take on greater importance than other costs in business location decisions.

Results by country

The overall results for all locations are based on average results from 19 separate business operations, encompassing 12 manufacturing operations, three R&D operations, two digital operations, and two corporate services operations.

Among the countries studied, **India** has the lowest TTI at 49.7. In other words, total tax costs in India are 50.3 percent lower than in the **United States**, which has a TTI of 100.0 and represents the benchmark against which the other countries and cities are scored. **Canada**, **China**, **Mexico**, **Russia**, the **United Kingdom** and the **Netherlands** also have a Total Tax Index below the United States. At the other end of the spectrum, **France's** TTI of 179.7 signifies that total tax costs in France are 79.7 percent higher than the US standard.

Comparing the results for the five high growth countries studied, there is significant divergence between results for **Brazil** relative to the other four high growth countries—**India**, **China**, **Mexico** and **Russia**. While the latter countries all rank among the top five countries for low tax burden with tax costs approximately 30 to 50 percent lower than the United States, **Brazil** ranks 11th among the 14 countries, with a tax burden 42.6 percent higher than the United States.

The TTI rankings of countries in 2012 are broadly consistent with the 2010 rankings for the 10 countries included in the prior edition of this study. **Canada** has moved ahead of **Mexico**, the **United Kingdom** has moved ahead of the **Netherlands**, **Japan** has moved ahead of **Italy**, and **Australia** has fallen

behind the **United Kingdom**, the **United States**, and **Germany**. Some of these countries were closely grouped in 2010, such that marginal changes in TTI (partly due to changes in the mix business operations examined in the 2012 study) have resulted in the changes in rankings. In other instances, changes in ranking do relate to changes in tax policy. The more substantive changes between 2010 and 2012 are:*

- **Australia** sees the largest change in TTI between 2010 and 2012 among the countries studied, with an increase of 44.3 points. This change is partly due to the strong appreciation of the Australian dollar over the last 2 years (which increases the cost in US dollars of non-income based taxes paid in Australia), and partly due to changes in Australia's R&D tax incentives introduced in 2011 (which are discussed further in Chapter 5). Offsetting these increases is an announced reduction in Australia's corporate income tax rate of 1 percent in July 2013.
- **Italy** sees the second largest change in TTI among the countries studied, with an increase of 23.3 points. This change for Italy is due in part to the expiration of economic stimulus tax incentives offered in Italy for new business investments that occurred in 2010, and in part to Italy's relatively higher tax burden for services firms as two new service operations were added to the analysis in 2012.
- The **United Kingdom** sees its TTI fall by 14.8 points between 2010 and 2012, representing the largest decrease in TTI for any of the countries studied. This change is partly due to reductions in corporate income tax in the United Kingdom, with the main tax rate having been reduced by 2 percent since 2010, with further reductions of 3 percent planned between 2012 and 2014. In addition, lower industrial property values in 2012 have resulted in a reduced burden for other corporate taxes.
- **Japan** is the only other country to see a change in its TTI of more than 5 points, with an increase of 14.3 points between 2010 and 2012. While Japan is in the process of reducing its corporate income tax rates between 2012 and 2015, this benefit has been more than offset by the strong appreciation of the Japanese yen over the last 2 years (which increases the cost in US dollars of non-income based taxes paid in Japan), and a modest increase in statutory labor costs.

Overall, the changes in TTI for all countries are the product of a number of factors, including:

- **Changes in tax rates**, including tax rate changes in a number of countries, with decreases in corporate income tax rates being the most common theme among recent tax changes.
- **Incentive changes**, including expired incentives in Italy and revised incentives in Australia.
- **Exchange rate changes**, including the significant appreciation of the Australian dollar and the Japanese yen and the depreciation of the Euro and the British pound over the last 2 years. Changes in exchange rates influence the TTI results by changing the US dollar cost associated with taxes not based on income.
- **Changes in the mix of business operations examined**, with new operations added to the analysis—video game production, international financial services, and green energy equipment manufacturing—being subject to specific incentives in some jurisdictions.
- **Lesser factors**, such as changes in underlying business costs in each location (e.g. property values and labor rates).

Rank	Country	Total Tax Index			2010 Rank[1]
		2012	2010	Change	
1	India	49.7	n/a	n/a	n/a
2	Canada	59.1	63.9	-4.9	2
3	China	59.7	n/a	n/a	n/a
4	Mexico	63.6	59.9	3.6	1
5	Russia	71.7	n/a	n/a	n/a
6	United Kingdom	73.3	88.0	-14.8	5
7	Netherlands	77.2	76.4	0.8	3
8	United States	100.0	100.0	0.0	6
9	Germany	122.0	124.1	-2.1	7
10	Australia	125.1	80.8	44.3	4
11	Brazil	142.6	n/a	n/a	n/a
12	Japan	152.3	138.0	14.3	9
13	Italy	152.9	129.6	23.3	8
14	France	179.7	181.4	-1.7	10

1. India, China, Russia, and Brazil were not examined in the 2010 study.

* Subsequent to the completion of research and analysis for this report, in March 2012 the Canadian government announced a reduction in its R&D tax credit program to commence in 2014. This change will impact TTI results for Canada in future editions of this study. However, the estimated impact on these results is minor and is discussed in further detail on page 14.

Results by city

For the purposes of this study, we compared 113 cities from the 14 countries noted above. In this report, we highlight the 55 major international cities, representing those cities used in developing the international comparisons (2 – 4 cities per country) plus additional cities with metro area populations of at least 2 million (primarily in the United States). We believe that this group of cities will be of most interest to companies seeking to locate operations in foreign countries. Detailed results for all cities are presented in Appendix A.

The results for the 55 major cities generally follow the results by country above. However, the spread of results among cities in the various countries differs greatly from country to country:

- In the Netherlands and Mexico, the spread of tax burdens between cities is relatively low, due to highly centralized tax systems. In the Netherlands, the spread of tax burdens between **Amsterdam** and **Rotterdam** is only 0.5 points, while in Mexico, the spread between **Monterrey** and **Mexico City** is 1.4 points.
- The spread of tax burdens between cities in both Italy and Australia are also less than 5 points. In these countries, low internal variations in tax burden make taxes a relatively less significant consideration in the process of selecting business locations within the country.
- In comparison, countries with less centralized tax systems see much larger variations in tax burden among cities, and selection of an appropriate business location within the country can have a much greater impact on total tax costs. For example, in the United States, the tax burden spread between **Cincinnati** and **San Francisco** is 25.8 points, while in Japan, the tax burden spread between **Osaka** and **Tokyo** also exceeds 20 points.
- Indeed, underlying business cost fundamentals do have a significant impact on total tax costs. In the *Competitive Alternatives 2012* study, this same group of cities was ranked based on total business costs (see study exhibits 4.1 and 4.2). In most countries, cities are ranked in the same order in those rankings of total business costs and this ranking of total tax costs, but exceptions include:
  - In Canada the rankings of the three major cities for business costs and tax costs are reversed. **Toronto** represents the middle city in both rankings, but with **Vancouver** having the lowest total tax costs and **Montreal** having the lowest total business costs.
  - In the United States, while **Cincinnati** and **San Francisco** represent the lowest and highest cost cities (respectively) for both business and tax costs, there are also cities with high business costs but low tax costs or vice versa. For example, **St. Louis** ranks 7th among the 27 large US cities for total business costs but 26th for total tax costs, while **Philadelphia** ranks 20th among 27 US cities for total business costs but 8th for total tax costs.

Results by sector

In this chapter, the TTI results presented reflect the overall results for each location, based on 19 different types of business operation. TTI results also vary among the different business sectors examined, as follows:

- **Digital** operations (see Chapter 4) tend to see a much lower impact of other corporate taxes and a higher impact of statutory labor costs than firms in the manufacturing sector. Within North America, targeted incentives for digital media production are also an important consideration in this sector.

Rank	Major International Cities	Total Tax Index
1	Chennai, IN	46.4
2	Vancouver, CA	49.2
3	Chengdu, CN	51.3
4	Mumbai, IN	53.0
5	Toronto, CA	56.0
6	Montreal, CA	62.1
7	Monterrey, MX	62.8
8	Mexico City, MX	64.2
9	Manchester, UK	66.8
10	Saint Petersburg, RU	67.8
11	Shanghai, CN	68.0
12	Moscow, RU	75.7
13	Amsterdam, NL	76.9
14	Rotterdam, NL	77.4
15	London, UK	79.8
16	Cincinnati, US	80.8
17	Baltimore, US	83.3
18	Cleveland, US	85.2
19	Atlanta, US	86.7
20	Pittsburgh, US	89.1
21	Orlando, US	89.6
22	Minneapolis, US	89.8
23	Philadelphia, US	90.8
24	Tampa, US	91.0
25	Boston, US	91.9
26	North Virginia, Metro DC, US	92.4
27	Seattle, US	92.6
28	Miami, US	92.8

Rank	Major International Cities	Total Tax Index
29	Denver, US	94.3
30	Chicago, US	95.0
31	Detroit, US	95.9
32	Houston, US	98.4
33	Phoenix, US	98.4
34	Dallas-Fort Worth, US	98.6
35	Sacramento, US	100.2
36	Riverside-San Bernardino, US	100.4
37	San Diego, US	101.0
38	New York City, US	101.3
39	Portland, US	102.3
40	Los Angeles, US	105.1
41	St. Louis, US	105.3
42	San Francisco, US	106.6
43	Berlin, GE	118.2
44	Brisbane, AU	122.1
45	Melbourne, AU	123.4
46	Frankfurt, GE	125.8
47	Sydney, AU	126.8
48	Belo Horizonte, BR	138.4
49	Osaka, JP	141.9
50	São Paulo, BR	146.8
51	Milan, IT	150.8
52	Rome, IT	155.0
53	Tokyo, JP	162.6
54	Marseille, FR	172.3
55	Paris, FR	187.1

- **R&D** operations (see Chapter 5) are separately assessed due to the strong focus most countries and regions have on fostering innovation through, for example, the provision of significant tax incentives for R&D activities.
- **Corporate services** (see Chapter 6) operations are the most "pure" representation of the corporate income tax system in most locations, as fewer special tax incentives apply to these activities. Labor-based taxes are generally a significant consideration for these service operations.
- **Manufacturing** (see Chapter 7) is characterized by the frequency with which special tax incentives, such as rate reductions or credits for job creation or investment, are used to stimulate manufacturing. Taxes on capital and property also tend to be much more significant for capital-intensive manufacturing operations.

2

Measuring 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 labor costs (that is, statutory plan costs and other wage-based taxes). As described in more detail in Appendix B:

- **Total Tax Index (TTI)** is the primary measure used throughout this report to compare tax burdens by comparing the total actual tax cost (in US dollars) for each jurisdiction. For calculating income taxes, net income before income taxes has been standardized as a fixed dollar amount in all locations, so that total taxes paid can be realistically compared in absolute dollar terms.
- **Total Effective Tax Rate (TETR)** expresses total tax costs as an effective rate and contextualizes tax burden relative to income. TETR is the sum of the effective rates of corporate income tax (net of incentives), other corporate taxes, and statutory labor costs expressed as a percentage of standardized net income before income taxes.

Rankings obtained using TTI and TETR are identical.

In calculating taxes, the study includes income taxes imposed by all levels of government (national, regional, and/or local), reflecting specific income tax rules for each jurisdiction (as discussed further in Chapter 3). Other taxes are also calculated according to specific local rules. Labor 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 *Competitive Alternatives 2012* comparison of international business costs. For example:

- Statutory labor costs are calculated based on Chinese wage rates in China and German wage rates in Germany, using contribution rates and rules applicable to the statutory programs in each country. In this way, the final costs reflect real world costs incurred by companies operating in different jurisdictions.
- Property tax costs are calculated based on Japanese property values in Japan and US property values in the United States, using local property tax rates applicable in each location. Again, this reflects real world costs incurred by companies operating in different jurisdictions.

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

3

Components of Total Tax Costs

Total tax costs analyzed in this study comprise three core components, as follows:

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

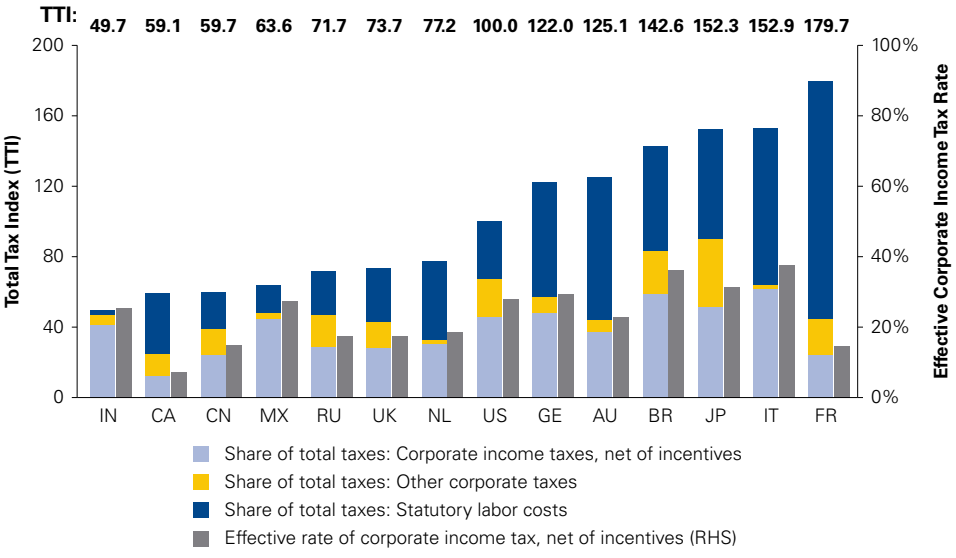
In the chart below, the main bars present the TTI for each of the 14 countries studied, and also illustrate the relative share of each tax component in total tax costs. The chart also presents (in grey) the effective corporate income tax rate in each country. As seen in the chart, effective corporate income tax rates are directly related to the share of income taxes in total tax costs, but do not provide any useful information regarding the total tax costs in each country. Full consideration of other corporate taxes and statutory labor costs is essential to obtain an understanding of the total tax costs in any country.

The importance of the three tax components varies quite significantly among countries:

- Effective corporate income tax rates are directly related to the share of income taxes in total tax costs. Corporate income taxes are lowest in **Canada** (7.3 percent effective corporate income tax rate), **France** (14.7 percent), and **China** (14.8 percent). At the other end of the scale, effective corporate income taxes exceed 30 percent in **Japan** (31.5 percent), **Brazil** (36.1 percent), and **Italy** (37.6 percent). These effective income tax rates are significantly lower than the nominal tax rates in most countries due to the inclusion of various tax incentives, including R&D tax incentives, in these calculations.
- Other corporate taxes represent the smallest component of total tax costs in most of the countries examined. However, even here, the impact of these taxes varies widely between countries. **Italy**, the **Netherlands**, and **Mexico** are the countries with the lowest costs for other corporate taxes, while other corporate taxes are highest in the **United States**, **Brazil**, and **Japan**.
- The most dramatic variations between countries are in statutory labor costs. **India**, **Mexico**, and **China** have the lowest costs for statutory labor costs, while these costs are highest in **Australia**, **Italy**, and **France**.

These differences highlight the different ways in which countries collect taxes to fund required programs and services, and also highlight the importance of basing international (or inter-regional) tax comparisons on factors beyond the corporate income tax rate. To further highlight the impact of other corporate taxes and statutory labor costs, compare the results for **India** and **France**. These two countries rank 8th and 2nd respectively, for their effective corporate income tax rates, but rank 1st and 14th, respectively, for total tax costs after considering other corporate taxes and statutory labor costs.

Total Tax Index by Type of Tax, and Effective Corporate Income Tax Rates – Overall



Income taxes

Income taxes represent the first major component of total tax costs. While countries are often compared based on the national corporate income tax rate, this falls far short of providing a comprehensive picture of actual income tax costs in a country. In some countries, such as Australia, China, and the United Kingdom, income tax only applies at the national level, while in other countries separate income taxes may also be levied by states or provinces (such as in the United States, Canada, and Russia), by local governments (such as in Germany), or by all three levels of government (such as in Japan and in some US cities).

Also, there is the issue of whether an income tax actually exists at all in a jurisdiction, with some US states (e.g. Washington, Texas) claiming no income tax, but instead having taxes based on gross receipts with limited deductions. Clearly, such taxes are based on income—just gross income instead of net income—and give rise to the likelihood of a tax liability even if the company is in a net loss position. The move from net income taxes to gross receipts taxes appeared to have been gaining ground in the United States, with Michigan, Ohio, and Texas all having introduced gross receipts taxes in the last decade. However, Michigan's recent decision to revert to a standard net income tax system in 2012 represents one move away from the gross receipts approach.

However, stepping back to the beginning of the income tax calculation process, one must also consider the actual base to which tax rates will be applied. Most jurisdictions require some adjustments to net income before income tax when determining taxable income. Some examples of the types of adjustments that need to be considered in the various countries are as follows:

- In the United States, rules regarding Qualified Productive Activities Income (QPAI or s. 199 Deduction) provide for a deduction equal to 9 percent of net income derived from domestic manufacturing, limited to no more than 50 percent of wages paid. This works out to be effectively equivalent to a 3 percent tax rate reduction for manufacturers on their federal income taxes. Some states allow this additional deduction to flow through to state taxable income calculations.
- In Italy, the regional income tax (Regional tax on productive activities or IRAP) only allows a partial deduction for wage and salary costs. For most workers deductible costs are limited to the first €4,600 of wages or salaries, plus the employer's share of social security payments. These rules result in a taxable income base that is far higher than net income before tax—especially for firms where payroll represents a major business cost.
- In Germany, the local income tax (Local trade tax) disallows a deduction for 25 percent of interest paid and 20 percent of lease or rental payments on movable assets. This results in higher taxable income, especially for capital-intensive firms with significant equipment under lease.
- In Brazil, R&D costs are not deductible for income tax purposes by default, although an incentive program does provide for a deduction of up to 80 percent of R&D costs incurred. However, this still leaves at least 20 percent of R&D costs as non-deductible and increases taxable income for firms with significant R&D costs.
- Different deductibility rules even exist for income taxes themselves. In the United States, state income taxes paid are deducted for federal income tax purposes. At the state level, a mix of rules exist, with some states allowing no deduction for income taxes, other states allowing deductions for taxes paid only to other states, others allowing a deduction only for taxes paid in their own state, some allowing a deduction for federal taxes paid, and some allowing a combination of the above.
- While the model business operations used in this study did not contain specific assumptions regarding items such as bad debts, provisions, asset sales, dividend distributions, and charitable donations, such items can cause further significant adjustments to taxable income.

Once taxable income has been determined, then calculation of gross income tax begins:

- While many countries impose a simple flat rate of corporate income tax, such as current rates of 30 percent in both Australia and Mexico, other countries adopt a variety of progressive tax rate structures or incentive-based tax rates. For example, the Netherlands has a relatively simple progressive tax structure: 20 percent on the first € 200,000 of taxable income and 25 percent on the excess. In China, a flat tax rate of 25 percent applies by default, although a reduced rate of 15 percent applies to many "encouraged" and "state-supported" industry categories. At the other end of the spectrum is Japan, which has a complex system in which three levels of government levy four separate taxes at varying rates based on net taxable income, corporate capital, and national corporate income tax paid.
- Once regular income tax has been determined, it is also necessary to consider the possibility of minimum tax rules. For example:

– In the United States, the Alternative Minimum Tax (AMT) system recalculates net taxable income with a number of adjustments, including less favorable depreciation write-offs. AMT income is subject to tax at a rate of 20 percent, and AMT is only payable if it exceeds regular income tax calculated for the year.
– Mexico has a minimum tax system called Flat Rate Business Tax (IETU). The calculation of this tax starts with total income (excluding interest income) and then allows deductions for the full cost of assets, materials, goods, and independent services purchased, as well as some minor taxes paid. The IETU tax rate of 17.5 percent is then applied to calculate gross IETU. Next, a credit calculated at the IETU tax rate is allowed for payroll (excluding the cost of any benefits that are not taxable to the employees). Finally, a credit is allowed for the full amount of regular corporate income tax paid. Any remaining net IETU must be paid in addition to regular corporate income tax.

Finally, following the calculation of gross income tax and any minimum tax liability, income tax credits also need to be factored in to the analysis of net income tax costs. Examples of such credits are as follows:

- Many countries 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. The scope of this study includes significant, commonly available tax credit programs with clearly defined eligibility criteria and calculation formulas. Discretionary or negotiated tax credits are not included in this analysis.
- In Canada, federal income tax credits for investment in manufacturing facilities and equipment are available, but only in certain parts of the country.
- In countries that have minimum tax rules, minimum tax paid in prior years in excess of regular income tax for those years may also give rise to credits that can offset future income tax.

All of these issues need to be considered to effectively compare income tax burdens between countries and cities, and 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 as immaterial any taxes where the estimated cost to the business is less than US$1,000 per year.

Capital taxes only apply in certain countries and regions as follows:

- In Canada, the former national capital tax has been eliminated, as have provincial capital taxes for general corporations in all provinces except Nova Scotia, where such tax will be eliminated by the end of 2012.
- In the United States, capital taxes (in various forms) apply in about 40 percent of all locations examined.
- In Japan, prefectural and municipal capital taxes apply in the locations considered in this study.
- In Brazil, China, France, and Italy, one-time capital taxes apply either to the issuance of share capital or to corporate borrowings.

Sales and transaction taxes come in various forms in different countries and regions, and impact upon companies differently:

- **Non-refundable sales taxes** apply in most US states, some Canadian provinces, and also in Brazil and India. Where non-refundable sales taxes apply, exemptions are often available for many of the costs incurred by a manufacturer to avoid the compounding of taxes into the price of goods at each stage of the production process. The operation of such sales taxes are relatively streamlined in both Canada and the United States, but are significantly more complex in Brazil and India.
- **Refundable value-added taxes** (VAT or GST). These taxes apply in all of the countries included in this study, except for the United States. 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. Any non-refundable costs related to VAT/GST taxes are considered as non-refundable sales taxes, as referenced above. While these taxes do impose a cost on companies in terms of cash flow timing and administration, such costs are not considered material to this study.
- **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. In 2010, France also introduced a new modified gross receipts tax based on gross value added. Gross receipts taxes also apply in Brazil and China.
- **Land and share transfer taxes.** These one-time transfer taxes have not been considered in this analysis due to the specific assumptions made for the model business operations examined.

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

- **For manufacturing operations** (which for the purposes of this research, we assumed are located in single-occupant industrial facilities), all property taxes are included in the analysis.
- **For service operations** (which for the purposes of this research, we assumed to use leased office space), property-based taxes are included in the analysis only where the tax is levied directly on the business occupant, rather than the property owner (landlord). In our broader *Competitive Alternatives 2012* study of total business costs, taxes passed on by a landlord to a tenant were captured indirectly as part of total office leasing costs, but were not separately identifiable and cannot be included in this study.

Miscellaneous local business taxes. Most taxes levied by all levels of government are captured within one of the other broad tax definitions outlined in this chapter. However, some miscellaneous local business taxes do apply and have been considered in this analysis if material to the business operation. For example, in the United States, a local business tax of US$4.50 per employee per annum applies to many types of businesses located in Miami.

Statutory labor costs

All countries studied levy a variety of charges and taxes on payroll, which we refer to collectively as statutory labor costs. In some cases, such as the payroll taxes levied by Australian states, these taxes go to general revenue. However, in most cases, they relate to specific statutory plans, such as social security, medical care, unemployment insurance, and/or workplace injury insurance. The number, scope, rates, and complexity of these taxes can vary immensely between countries and regions.

4

Digital

Results for the digital sector are based on an analysis of two model business operations: a software development firm and a video game production studio.

Results by country

The ranking of countries for this sector is generally consistent with the overall results presented above, although several notable differences do exist.

Canada ranks first for digital operations, well ahead of **India** and with the lowest TTI, primarily due to incentives that provide significant financial support to video game production and other digital media industries. (Canada is not alone in this regard, as approximately one third of US states also offer significant incentives to the digital media industry.)

Russia improves its ranking in this sector relative to the overall results, moving from 5th to 3rd due to relatively lower costs for other corporate taxes and statutory labor costs in this sector.

Japan also improves its ranking in this sector relative to the overall results, ranking 10th here versus 12th overall. Similar to Russia, Japan also benefits from the lesser significance of its other corporate taxes in this sector.

Brazil moves down in the rankings to 13th, compared to its 11th place in the overall rankings. Brazil's high statutory labor costs and local gross receipts taxes on services income both dampen Brazil's results in this sector.

Rank	Country	Total Tax Index	2010 Rank[1]
1	Canada	16.5	2
2	India	52.8	n/a
3	Russia	56.6	n/a
4	China	68.9	n/a
5	Mexico	75.3	1
6	United Kingdom	75.4	3
7	Netherlands	81.6	4
8	United States	100.0	5
9	Germany	120.2	8
10	Japan	131.8	7
11	Australia	135.3	6
12	Italy	189.2	9
13	Brazil	193.7	n/a
14	France	198.5	10

1. Rank for combined "Corporate and IT Services" sector in 2010.

Rank	Major International Cities	Total Tax Index
1	Toronto, CA	7.9
2	Montreal, CA	25.2
3	Vancouver, CA	34.5
4	Saint Petersburg, RU	52.4
5	Chennai, IN	52.5
6	Mumbai, IN	52.9
7	Chengdu, CN	59.8
8	Moscow, RU	60.9
9	Atlanta, US	71.1
10	Manchester, UK	72.2
11	Monterrey, MX	74.5
12	Orlando, US	75.2
13	Tampa, US	75.3
14	Miami, US	75.4
15	Mexico City, MX	76.1
16	Shanghai, CN	77.9
17	London, UK	78.5
18	Amsterdam, NL	81.5
19	Rotterdam, NL	81.6

Rank	Major International Cities	Total Tax Index
20	Denver, US	89.0
21	Cincinnati, US	92.1
22	Detroit, US	92.8
23	Minneapolis, US	93.0
24	Cleveland, US	93.3
25	Dallas-Fort Worth, US	93.6
26	Houston, US	94.0
27	Phoenix, US	95.1
28	Seattle, US	95.5
29	Baltimore, US	98.2
30	Riverside-San Bernardino, US	100.3
31	St. Louis, US	100.8
32	Sacramento, US	100.8
33	San Diego, US	101.1
34	North Virginia, Metro DC, US	101.6
35	Los Angeles, US	101.7
36	Boston, US	101.8
37	Chicago, US	102.1

Rank	Major International Cities	Total Tax Index
38	New York City, US	102.6
39	San Francisco, US	103.0
40	Pittsburgh, US	103.2
41	Philadelphia, US	105.7
42	Portland, US	106.7
43	Berlin, GE	114.7
44	Frankfurt, GE	125.7
45	Osaka, JP	130.1
46	Melbourne, AU	133.0
47	Tokyo, JP	133.6
48	Brisbane, AU	133.8
49	Sydney, AU	137.6
50	Belo Horizonte, BR	182.4
51	Milan, IT	186.0
52	Marseille, FR	187.2
53	Rome, IT	192.4
54	São Paulo, BR	205.1
55	Paris, FR	209.8

Comparing the TTI rankings of countries in 2012 to 2010 for the 10 countries included in the prior edition of this study, the changes in ranking are generally consistent with the changes in overall rankings for the countries over the last two years. As explained for the overall results in Chapter 1, Canada now ranks ahead of Mexico and Australia has moved down in the rankings.

Results for major cities

The results for the major international cities are generally consistent with the national results, with **Toronto**, **Montreal**, and **Vancouver** all exhibiting very low TTIs due to the impact of digital media incentives offered by the relevant Canadian provinces. State incentives for this industry also drive relatively strong results for a number of US cities in this sector, including **Atlanta**, **Orlando**, **Tampa**, **Miami**, and **Denver**.

Impact of tax components

Effective corporate income tax rates in the digital sector for most countries are generally similar to the overall results. The exceptions, where the effective income tax rates for this sector vary from the overall results by more than 5 percent, are Canada and the United States:

- Canada reports an effective corporate income tax rate of -7.7 percent in this sector due to significant refundable incentives for digital media firms exceeding corporate income tax otherwise payable. Among the jurisdictions highlighted in the city rankings, the video game production studio modeled receives incentives ranging from 17.5 to 35.0 percent of eligible direct labor costs. However, these incentives are not available to other types of digital operations, such as conventional software developers. Separate comparisons for the two business operations analyzed in this sector reveal an effective corporate income tax rate of approximately -40 percent for video game production, but +22 percent for software development.
- The United States' effective corporate income tax rate in this sector, at 34.7 percent, is 6.6 percent higher than in the overall results. While several US states offer incentives for the digital media industry, ranging from 5 percent of total direct production costs in Texas to 35 percent of direct resident salary costs in Louisiana, only Louisiana extends these credits to a broader range of software and IT firms. Among other US states, incentive programs broadly tend to reward manufacturing investment and job creation to a greater extent than growth in services sectors, resulting in a higher effective income tax rate in this sector than in the overall results.

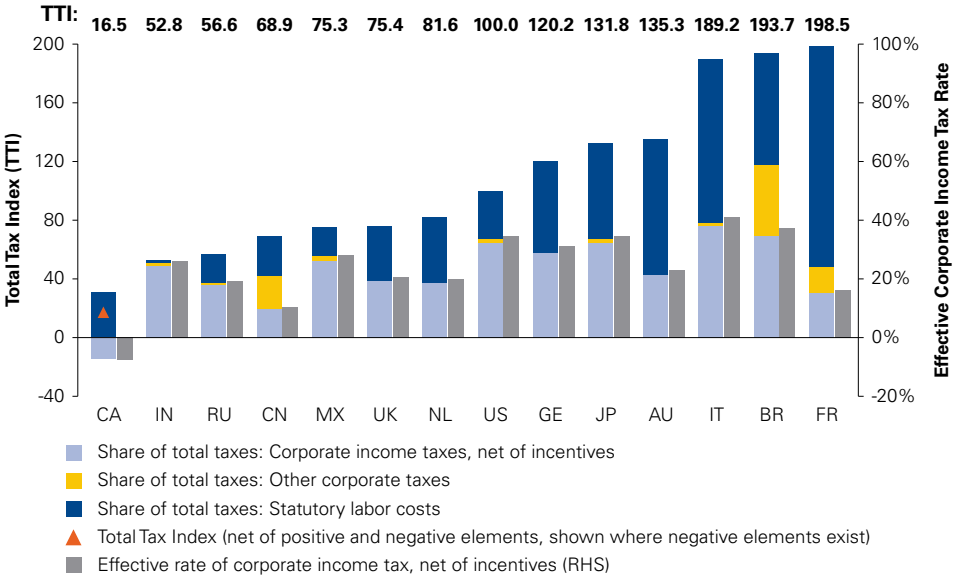
Compared to both the overall results and the manufacturing sector, firms in the digital sector tend to see a much lower impact of other corporate taxes. These variations relate primarily to differences in the treatment and significance of property-based and capital-based taxes between the sectors:

- In this study, all service sector operations are assumed to be leasing office space on a gross lease basis, such that rent includes all operating costs, insurance, and property taxes paid by the landlord. Property taxes levied on landlords and passed on to tenants as rent are not separately identifiable, and are not captured in this tax comparison. However, taxes levied directly on business occupants are captured in the analysis, including both taxes based on rental payments and taxes on business equipment.
- Taxes on equipment and capital employed are much less significant for the digital sector (and other services sectors) than for the manufacturing sector or the overall results, as relatively lower levels of both equipment and capital are employed in this sector.

Finally, tax burdens in the digital sector tend to be more affected by statutory labor costs than overall tax burdens, due to the high significance of labor costs among total business costs in this sector.

In the chart below, the main bars represent the TTI for each of the 14 countries studied, and also illustrate the relative share of each tax component in total tax costs. The chart also summarizes the effective corporate income tax rate in each country.

Total Tax Index by Type of Tax, and Effective Corporate Income Tax Rates – Digital



5

Research & Development

Results for the R&D sector are based on an analysis of three model business operations: a biomedical R&D operation, a clinical trials management firm, and an electronic systems development/testing operation.

Results by country

The TTI rankings of countries for R&D operations vary significantly from the other sectors examined and the overall results. These changes are primarily due to the impact of tax incentives targeted to foster R&D activity.

Canada, **India**, the **Netherlands**, the **United Kingdom**, and **Russia** all have particularly low TTI ratings, at less than 65, reflecting the effect of significant R&D incentives in those countries.

Even at the other end of the spectrum, **France** also offers significant R&D tax credits, which are sufficient to cut France's TTI rating to 157.6 for R&D, as compared to 198.5 in the digital sector. Thus, even in high-tax locations, R&D incentives can still have a significant impact in reducing total tax costs.

In contrast, **Brazil's** ranking falls in this sector, largely due to a portion of R&D costs not being deductible for income tax purposes. This results in a higher effective corporate income tax rate for R&D operations in Brazil.

Rank	Country	Total Tax Index	2010 Rank
1	Canada	29.0	2
2	India	47.0	n/a
3	Netherlands	57.8	4
4	United Kingdom	63.2	3
5	Russia	63.9	n/a
6	Mexico	78.7	5
7	China	88.6	n/a
8	United States	100.0	6
9	Australia	135.5	1
10	Germany	143.5	9
11	Japan	155.8	8
12	France	157.6	7
13	Italy	233.3	10
14	Brazil	266.0	n/a

Rank	Major International Cities	Total Tax Index
1	Montreal, CA	20.3
2	Vancouver, CA	32.9
3	Toronto, CA	37.6
4	Chennai, IN	43.0
5	Mumbai, IN	50.8
6	Amsterdam, NL	57.5
7	Rotterdam, NL	58.0
8	Saint Petersburg, RU	58.3
9	Manchester, UK	59.4
10	London, UK	67.1
11	Moscow, RU	69.5
12	Chengdu, CN	76.1
13	Monterrey, MX	77.6
14	Mexico City, MX	79.7
15	Minneapolis, US	85.1
16	Atlanta, US	87.3
17	Cincinnati, US	90.0
18	Baltimore, US	91.2
19	Orlando, US	91.4

Rank	Major International Cities	Total Tax Index
20	Phoenix, US	91.9
21	Tampa, US	92.3
22	Cleveland, US	92.8
23	Detroit, US	92.8
24	Miami, US	93.3
25	Riverside-San Bernardino, US	93.9
26	Sacramento, US	94.6
27	San Diego, US	95.0
28	Boston, US	95.9
29	Seattle, US	96.4
30	Los Angeles, US	97.2
31	San Francisco, US	99.2
32	Denver, US	99.8
33	New York City, US	99.9
34	Portland, US	100.0
35	Chicago, US	100.4
36	North Virginia, Metro DC, US	100.6

Rank	Major International Cities	Total Tax Index
37	Pittsburgh, US	100.9
38	Shanghai, CN	101.0
39	Dallas-Fort Worth, US	102.4
40	Houston, US	103.0
41	Philadelphia, US	103.4
42	St. Louis, US	106.2
43	Melbourne, AU	132.1
44	Brisbane, AU	134.8
45	Berlin, GE	136.2
46	Sydney, AU	138.9
47	Marseille, FR	145.9
48	Frankfurt, GE	150.9
49	Osaka, JP	153.0
50	Tokyo, JP	158.7
51	Paris, FR	169.2
52	Milan, IT	231.9
53	Rome, IT	234.9
54	São Paulo, BR	256.8
55	Belo Horizonte, BR	275.1

Comparing the TTI rankings of countries in 2012 to 2010 for the 10 countries included in the prior edition of this study, there are some swapping of ranking pairs (e.g. United Kingdom and the Netherlands), but also more significant changes for **Australia** and **France**. As described in Chapter 1, changes for **Australia** include the strong appreciation of its dollar and recent revisions to its R&D tax incentives, while for **France**, a change in R&D tax credit rates for new research companies contributes to its drop in ranking.

Results for major cities

The results for the major international cities are generally very consistent with the national results for R&D with the exception of China.

Contrary to China ranking behind Mexico in the national results, **Chengdu** ranks ahead of both **Monterrey** and **Mexico City** in 12th place. However, **Shanghai** ranks well back in 38th place, trailing many of the US cities. The much higher tax cost for Shanghai than Chengdu reflects higher costs of salaries for R&D professionals in Shanghai than in Chengdu, resulting in a substantially higher burden for statutory labor costs in Shanghai relative to Chengdu. Higher costs in Shanghai related to China's gross receipts tax on services also contribute to this differential.

Impact of tax components

Most of the countries examined in this study, and some states and provinces within those countries, offer tax incentives to promote R&D activities.

The objective of governments in offering such incentives is to foster the growth of R&D and innovation in their respective jurisdictions. Many of the jurisdictions examined in this study have increased or enhanced their R&D tax incentives in recent years, although, more recently, some countries have put the brakes on their R&D incentives with some scaling down of incentives noted over the last two years.

The nature and form of these tax incentives differ from country to country. Below is a quick summary of the R&D tax incentives in each of the countries studied in this report. The R&D incentives detailed here and considered in this study apply to foreign-owned companies undertaking in-house R&D. In some countries, even more favorable treatment may be available to small domestic corporations and/or for R&D contracted to research institutes or universities.

- **Australia** revised its R&D tax incentives in July 2011 to introduce a system based on tax credits, with 45 percent refundable credits available to companies with group turnover less than AUD $20 million and 40 percent non-refundable credits available to larger corporations. Under this system, R&D expenses are not deductible in the calculation of taxable income, but the credits work to provide an effective deduction of 150 percent of R&D costs for small corporations or 133.3 percent of R&D costs for larger corporations.
- **Brazil** does not permit the deduction of R&D expenses against taxable income by default, but has specific R&D provisions to allow partial deductions. R&D capital equipment is immediately deductible in full, while R&D expenses are made 60 percent deductible for all companies or up to 80 percent deductible if a firm has sufficiently increased its number of research staff. Other R&D provisions include a 50 percent reduction in excise tax applicable to the purchase of equipment, devices, and tools used for R&D activities.
- **Canada** offers a federal income tax credit equal to 20 percent of total current and capital R&D expenditures. R&D equipment is also subject to 100 percent depreciation write-off. Most Canadian provinces also offer provincial R&D tax incentives at rates that vary from 10 to 20 percent, with some of these tax credits being refundable.

  Subsequent to the completion of research and analysis for this report, in March 2012 the Canadian government announced a reduction in its R&D tax credit program to commence in 2014. The changes include a reduction in the main credit rate from 20 to 15 percent, the elimination of capital expenditures from the credit base, and a reduction in eligible overhead expenses. For the operations examined in this R&D sector analysis, this change is not expected to have any impact on Canada's tax burden, due to highly intensive R&D operations earning more federal tax credits than they are able to utilize. However, these changes are expected to have an impact on operations that undertake some R&D incidental to their main activities, as seen in some operations examined in the manufacturing and digital sectors of this study. However, these impacts are estimated to be minor, representing less than 3 TTI points.
- **China** offers a bonus deduction equal to 50 percent of R&D expenses incurred, resulting in an effective deduction of 150 percent for R&D costs.
- **France** offers an income tax credit equal to 30 percent of the first €100 million of R&D expenditures in a year and 5 percent on excess expenditures. The credit rate is 40 percent for businesses in their first year of R&D, and 35 percent in their second year of R&D. These enhanced rates for new firms commencing R&D for the first time were reduced (from 50 and 40 percent) in January 2011. Credits can be carried forward and refunded if not used after 3 years.

- **India** provides a full deduction for all current and capital (excluding land) R&D costs for all firms, and then enhances this with a bonus deduction equal to an additional 100 percent of current and capital (excluding land and buildings) R&D costs for in-house R&D facilities operated by firms engaged in manufacturing or production of most types of products.
- **Italy's** regional income tax system permits the full deduction of salaries for R&D personnel, as compared to a deduction limit of just €4,600 per employee for non-R&D personnel.
- **Japan** offers an income tax credit of between 8 and 12 percent of total R&D expenditures, with the actual rate being determined based on the ratio of R&D spending to sales. However, the total income tax credit is limited to 20 percent of the corporate income tax liability for the year. For fiscal years starting between April 1, 2008, and March 31, 2012, additional R&D credits and a higher credit limit were made available to stimulate further short-term R&D activity. These enhancements were included in this analysis for the 2012 fiscal year.
- **Mexico** offers an income tax credit program that may provide credits for as much as 30 percent of R&D expenditures. However, this program is discretionary, with evaluation and approval required from the National Science and Technology Council. Given the uncertainty regarding the approval process and final credit rate determination, this incentive was not included in the calculations for this study.
- **The Netherlands** offers an innovative R&D incentive that allows the employer to retain a portion of the employee wage taxes deducted from the pay of R&D employees. For 2012, the amounts retained are 42 percent of the first € 110,000 of R&D payroll (60 percent for start-up firms) plus 14 percent of any excess R&D payroll. These amounts are retained by the employer rather than remitted to the taxation authorities, but the employee is still credited with having paid the full amount of personal wage (income) tax. Though the benefit to the employer R&D firm under this program is itself taxable, the benefit can exceed corporate income tax paid by the company in a year, significantly reducing the company's effective income tax rate.
- **Russia** has a small number of special economic zones designated as technology-innovation zones in the suburban regions of Moscow and St. Petersburg. These zones offer a wide variety of tax benefits (income tax, social security contributions, property tax and VAT) to companies operating in the zones. The benefits offered in these zones have not been considered in this analysis as the zones are very limited in geographic scope (two small zones in the greater

St. Petersburg region and three small zones in the greater Moscow region) and therefore such benefits are not broadly available to most companies operating in these cities.

- **The United Kingdom** offers an R&D incentive system that combines additional tax deductions with potentially refundable credits. R&D expenses are eligible for a deduction equal to 130 percent of the actual expenditures, or 200 percent for small and medium sized-enterprises (SMEs), which can have up to 500 employees, subject to other financial criteria. SMEs that cannot utilize the additional deductions (due to being in a loss situation) may be able to surrender the losses in exchange for a cash payment equal to 12.5 percent of the allowed deduction (equivalent to 200 percent ×12.5 percent = 25 percent of the actual R&D expenditures).
- **The United States'** federal R&D tax credit program is currently in limbo, as Congress has failed to extend this program prior to its December 31, 2011, sunset date. This situation has occurred numerous times in this program's history and, each time, the program has been reactivated (generally retroactively) at a later date. This creates great uncertainty for US R&D firms. Despite this situation, the federal R&D tax credit program was included in this study, as prior to December 31, 2011, bi-partisan bills to permanently extend the R&D tax credit were being considered in both the US House of Representatives and the Senate, and President Obama had also pledged to extend the credit. Therefore, consistent with past history, the wheels appear to be in motion to retroactively extend the US federal R&D credit once again, and possibly to establish a permanent credit.

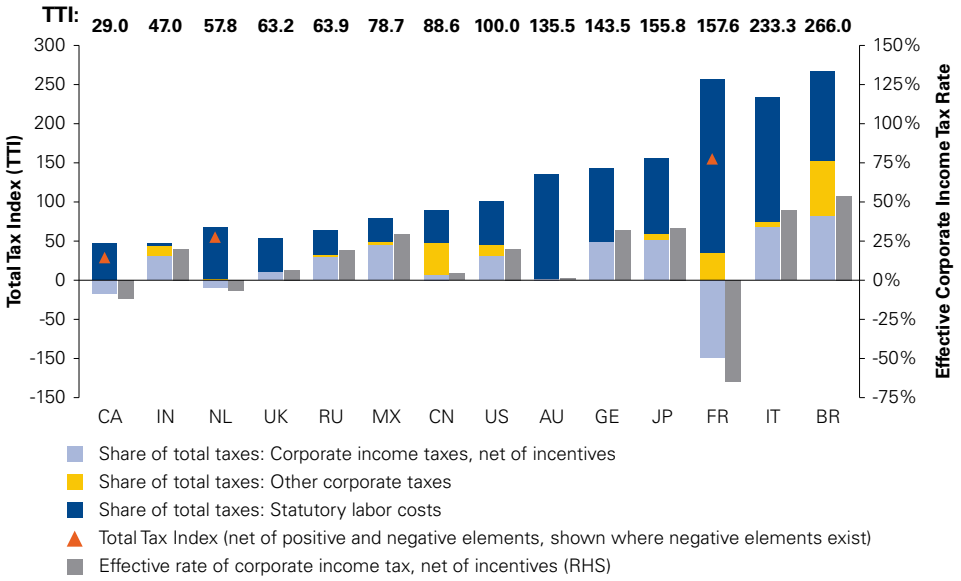
In addition to the federal program, many states offer R&D tax credit programs, which have been included in this analysis. Most state programs follow the federal definitions and calculation formulae, which primarily provide tax relief only for incremental R&D expenditures; however, some states take custom approaches to their R&D incentive programs.

In comparing these tax incentive programs, two key features to watch for are as follows:

- Whether incentives apply to all R&D expenditures incurred or only to incremental expenditures above some base level of R&D spending. Obviously, the former approach is preferable, providing incentive value on every dollar of eligible R&D spending.
- Whether the credits are refundable (or transferable or saleable). Often operations suffer losses during the early stages of their R&D projects, producing net tax losses and no income tax payable. If credits can only offset income taxes, this does not provide any short-term cash flow assistance to the firm to help sustain the R&D project and slow the cash-burn rate, even if the credits can be carried forward to future (hopefully profitable) years. However, where credits are refundable, where they can be transferred to offset other tax liabilities (such as sales, capital, or property tax), or where they can be sold to another entity, then the incentive program can provide immediate cash benefits to the R&D firm by slowing the cash-burn rate for early stage firms.

The following chart illustrates the wide variation in taxes, and especially income taxes (net of incentives), among the countries for R&D operations. Three countries— Canada, the Netherlands, and France—have R&D tax incentives that effectively produce negative income taxes, as refundable tax incentives are greater than corporate income taxes otherwise payable.

Total Tax Index by Type of Tax, and Effective Corporate Income Tax Rates – R&D



6

Corporate Services

Results for the corporate services sector are based on an analysis of two model business operations: a professional services operation (international financial services, but not a financial institution) and a support services operation (shared services center).

Results by country

Consistent with the overall results presented above, **India** also has the lowest TTI ranking for corporate services while **Italy** and **France** have the highest TTI ratings. The TTI rankings for these countries are also consistent with their rankings for statutory labor costs, illustrating the significance of this cost category to services firms where labor represents the predominant business cost factor.

Also consistent with the overall results are the rankings for the **Netherlands**, the **United States**, and **Germany**, in 7th, 8th, and 9th places respectively.

While these countries all maintain consistent rankings between this sector and the overall results, differences do exist for other countries due to a mix of issues across all three broad categories of taxes considered in the analysis.

In the upper half of the rankings, **Russia**, **Mexico** and the **United**

Rank	Country	Total Tax Index	2010 Rank[1]
1	India	50.0	n/a
2	Russia	56.0	n/a
3	Mexico	59.3	1
4	Canada	68.1	2
5	United Kingdom	69.7	3
6	China	88.0	n/a
7	Netherlands	90.9	4
8	United States	100.0	5
9	Germany	123.1	8
10	Japan	134.8	7
11	Australia	146.2	6
12	Brazil	172.7	n/a
13	Italy	186.2	9
14	France	244.2	10

1. Rank for combined "Corporate and IT Services" sector in 2010.

Rank	Major International Cities	Total Tax Index
1	Chennai, IN	47.1
2	Saint Petersburg, RU	52.2
3	Mumbai, IN	53.0
4	Vancouver, CA	56.4
5	Monterrey, MX	58.3
6	Moscow, RU	59.9
7	Mexico City, MX	60.3
8	Manchester, UK	65.3
9	Toronto, CA	65.9
10	Montreal, CA	70.1
11	London, UK	74.0
12	Chengdu, CN	78.0
13	Atlanta, US	86.8
14	Cincinnati, US	88.2
15	Orlando, US	89.3
16	Tampa, US	89.6
17	Cleveland, US	90.4
18	Detroit, US	90.5

Rank	Major International Cities	Total Tax Index
19	Amsterdam, NL	90.8
20	Rotterdam, NL	90.9
21	Miami, US	91.4
22	Dallas-Fort Worth, US	94.0
23	Baltimore, US	94.0
24	Phoenix, US	94.1
25	Houston, US	94.4
26	Denver, US	94.8
27	Pittsburgh, US	95.3
28	Minneapolis, US	95.4
29	North Virginia, Metro DC, US	97.1
30	St. Louis, US	97.4
31	Shanghai, CN	97.9
32	Riverside-San Bernardino, US	98.5
33	Portland, US	98.7
34	Sacramento, US	99.3
35	Seattle, US	99.5
36	Boston, US	99.5

Rank	Major International Cities	Total Tax Index
37	San Diego, US	99.9
38	Chicago, US	100.0
39	Los Angeles, US	101.8
40	Philadelphia, US	102.0
41	New York City, US	104.4
42	San Francisco, US	104.4
43	Berlin, GE	117.4
44	Frankfurt, GE	128.8
45	Osaka, JP	131.4
46	Tokyo, JP	138.1
47	Brisbane, AU	143.1
48	Melbourne, AU	143.8
49	Sydney, AU	148.6
50	Belo Horizonte, BR	162.5
51	Milan, IT	182.4
52	São Paulo, BR	182.9
53	Rome, IT	190.0
54	Marseille, FR	228.6
55	Paris, FR	259.8

Kingdom all have lower TTI scores in this sector than in the overall results and move up in the rankings, while **Canada** and **China** see higher TTI scores and their rankings slip.

In the lower half of the rankings, **Japan** has a lower TTI and moves up in the rankings ahead of **Australia** and **Brazil**, both of which have higher TTI scores in this sector.

Comparing the TTI rankings of countries in 2012 to 2010 for the 10 countries included in the prior edition of this study, the only changes in rankings are for **Japan**, which has dropped behind **Germany** in the rankings, and **Australia**, which has dropped behind **Germany** and **Japan**, both with increases in TTI. The rationale for these changes is explained as part of the overall results in Chapter 1.

Results for major cities

The results for the major international cities are again generally consistent with the national results and the overall city results, with some exceptions.

Within the United States, city rankings vary by sector and a number of cities see significant changes in their rankings in this sector. **Detroit**, **Dallas-Fort Worth**, and **St. Louis** all rank at least 10 places higher for corporate services than for the overall results, due primarily to relatively high property tax costs in these cities being a much less significant tax factor in this sector. By contrast, **Boston** and **Philadelphia** both rank at least 10 places lower in this sector than in the overall results, due largely to high statutory labor costs in Boston and high municipal income tax costs in Philadelphia.

Impact of tax components

Corporate services operations tend to be more affected by statutory labor costs than operations in other sectors, due to the very high significance of labor costs among total business costs. As illustrated in the chart below, the impact of statutory labor costs varies greatly among the countries studied:

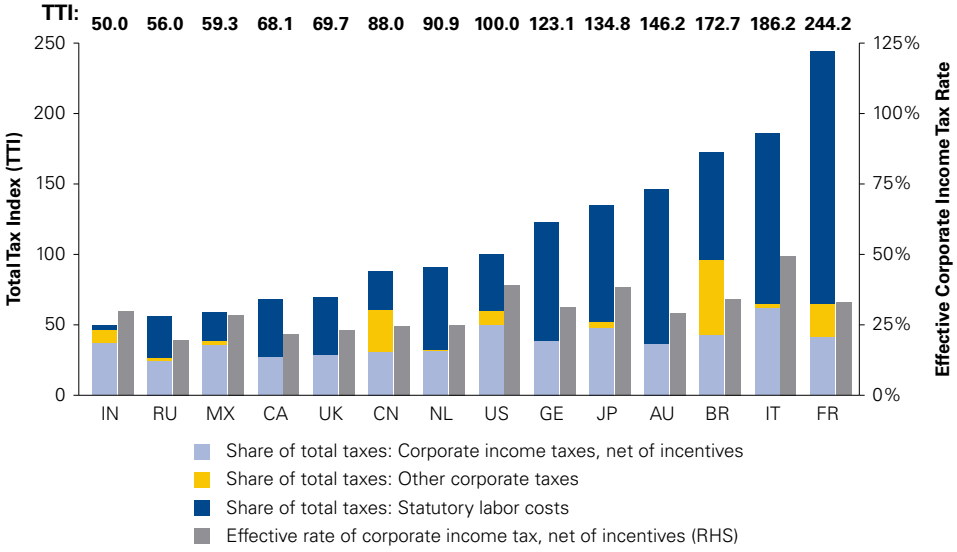
- Among the five high growth markets studied, India has both the lowest wage rates and the lowest percentage rates for calculating statutory labor costs while Brazil has both the highest wage rates and the highest percentage rates for statutory labor costs. These factors combine to create a wide gulf between the two countries in terms of the final burden for statutory labor costs.
- Conversely, in Europe, France and Italy have moderate wage costs (for mature markets) but very high statutory plan rates, while Germany has higher base wages but more moderate statutory plan rates. This combination works to diminish differentials in the final burden for statutory labor costs between these countries.

The Labor Cost Comparison table (next page) shows the differences among countries in terms of salaries and wages, statutory plans, and other benefits. As the table illustrates, statutory labor costs expressed as a percentage of payroll range from a low of 3 percent of payroll in India, to a high of 47 percent of payroll in France. Between these extremes, statutory labor costs in Italy and Brazil represent around 30 percent of payroll, while in all other countries statutory labor costs represent less than 20 percent of payroll.

There are also some areas where statutory labor costs alone do not present a full picture. One key area in this regard is health care:

- Public medical plans operate in most mature countries studied, as compared to the predominantly private medical system in the United States. As a result, in the US, employers cover significant

Total Tax Index by Type of Tax, and Effective Corporate Income Tax Rates – Corporate Services



non-statutory costs for private medical insurance. (This is evident in the Labor Cost Comparison table when comparing Other Benefits in the US and Canada: at 38 percent versus 27 percent of payroll, respectively. This comparison is clouded when comparing the European countries, which have significantly higher Other Benefit costs related to paid time not worked—holidays and vacations—as compared to the United States.)

- Even within public medical systems, funding can differ significantly between countries, influencing the cost to business. Canada's public medical system is funded primarily from general tax revenues, while Australia funds its public medical system primarily from a levy on employees imposed through the personal income tax system. However, in most European countries, medical care is funded primarily through statutory levies on the employer. (The former two tax costs are not captured in this analysis, as they do not directly burden the employer, while the latter cost is incorporated in this analysis.)

Labor Cost Comparison, Per Employee

	Salaries & Wages		Benefits				Total Labor	
			Statutory Plans		Other Benefits			
	Average per Employee[1] (US$)	Rank	Percent of Payroll	Rank	Percent of Payroll	Rank	Average per Employee[1] (US$)	Rank
MATURE MARKETS								
Americas								
Canada	$63,995	10	10%	3	27%	10	$87,228	7
United States	$64,905	11	9%	2	38%	13	$95,798	11
Europe								
France	$51,428	6	47%	14	24%	7	$88,256	9
Germany	$72,615	12	16%	9	22%	5	$100,422	12
Italy	$57,164	8	28%	12	25%	8	$87,558	8
Netherlands	$61,220	9	13%	7	32%	12	$88,602	10
United Kingdom	$55,789	7	10%	4	30%	11	$77,993	6
Asia Pacific								
Australia	$79,366	13	18%	10	12%	1	$103,754	13
Japan	$91,840	14	12%	5	15%	3	$117,155	14
HIGH GROWTH MARKETS								
Brazil	$27,508	5	32%	13	64%	14	$53,906	5
China	$16,252	2	19%	11	15%	2	$21,694	2
India	$11,995	1	3%	1	17%	4	$14,473	1
Mexico	$18,440	3	13%	6	26%	9	$25,617	3
Russia	$24,913	4	14%	8	24%	6	$34,338	4

1 Average for 19 operations included in the overall results. Represents 42 different job positions.
Source: Competitive Alternatives 2012, KPMG's Guide to International Business Location, Exhibit 5.2

7

Manufacturing

Results for the manufacturing sector are based on an analysis of 12 different model business operations, as detailed in the main *Competitive Alternatives 2012* study.

Results by country

The ranking of countries for manufacturing are broadly consistent with the overall results presented above, but with a number of notable differences.

Canada and **Russia** both move down in the rankings for manufacturing, with Canada ranking 4th behind **China** and **Mexico,** and **Russia** ranking 7th behind the **United Kingdom** and the **Netherlands**. In both **Canada** and **Russia**, higher costs for other corporate taxes (particularly property taxes) have a significant impact on the manufacturing sector. In **Canada**, a lesser significance of incentives in this sector (relative to digital and R&D) also results in a higher income tax burden for manufacturing.

In comparison, **Brazil** and **Italy** both move up in the rankings for manufacturing, with Brazil moving ahead of **Australia** and **Germany,** and Italy moving ahead of **Japan**. In both **Brazil** and **Italy**, the lesser significance of labor costs in manufacturing relative to services sectors results in tax savings, due to high statutory labor costs in Brazil and limited deductions for labor costs for regional income

Rank	Country	Total Tax Index	2010 Rank
1	India	49.3	n/a
2	China	51.2	n/a
3	Mexico	60.0	1
4	Canada	69.8	2
5	United Kingdom	74.4	5
6	Netherlands	76.8	3
7	Russia	77.6	n/a
8	United States	100.0	6
9	Brazil	115.0	n/a
10	Australia	119.4	4
11	Germany	119.9	8
12	Italy	132.7	7
13	Japan	158.1	9
14	France	170.5	10

Rank	Major International Cities	Total Tax Index
1	Chengdu, CN	43.6
2	Chennai, IN	45.5
3	Vancouver, CA	53.0
4	Mumbai, IN	53.2
5	Shanghai, CN	58.7
6	Monterrey, MX	59.4
7	Mexico City, MX	60.6
8	Toronto, CA	66.5
9	Manchester, UK	66.7
10	Montreal, CA	73.1
11	Saint Petersburg, RU	73.9
12	Amsterdam, NL	76.4
13	Cincinnati, US	76.6
14	Rotterdam, NL	77.1
15	Baltimore, US	78.1
16	Moscow, RU	81.2
17	London, UK	82.2
18	Cleveland, US	82.2
19	Pittsburgh, US	84.2

Rank	Major International Cities	Total Tax Index
20	Philadelphia, US	85.1
21	Boston, US	88.6
22	North Virginia, Metro DC, US	89.0
23	Minneapolis, US	89.0
24	Atlanta, US	89.7
25	Seattle, US	90.7
26	Orlando, US	92.3
27	Chicago, US	92.4
28	Tampa, US	94.1
29	Denver, US	94.6
30	Miami, US	96.4
31	Detroit, US	97.6
32	Houston, US	99.3
33	Dallas-Fort Worth, US	99.7
34	Phoenix, US	100.4
35	Sacramento, US	100.8
36	New York City, US	100.8
37	Riverside-San Bernardino, US	101.4

Rank	Major International Cities	Total Tax Index
38	San Diego, US	101.8
39	Portland, US	102.2
40	Los Angeles, US	107.0
41	St. Louis, US	107.0
42	San Francisco, US	108.4
43	Belo Horizonte, BR	111.5
44	Brisbane, AU	115.9
45	Berlin, GE	117.0
46	Melbourne, AU	118.1
47	São Paulo, BR	118.5
48	Sydney, AU	120.6
49	Frankfurt, GE	122.7
50	Milan, IT	130.9
51	Rome, IT	134.4
52	Osaka, JP	144.3
53	Marseille, FR	165.3
54	Tokyo, JP	171.9
55	Paris, FR	175.7

tax in Italy. **Brazil** also benefits from a lower impact of non-refundable transaction taxes for manufacturers than for services firms.

The TTI rankings of countries in 2012 are also generally consistent with the 2010 rankings for the 10 countries included in the prior edition of this study. The main changes since 2010 relate to an improvement in ranking for the **United Kingdom**, and ranking drops for both **Australia** and **Italy**. The causes of ranking changes for these three countries are all explained in Chapter 1, as part of the discussion of overall results.

Results for major cities

The results for the 55 major international cities are generally consistent with the national results. **Vancouver** represents an exception, ranking ahead of **Mumbai**, **Shanghai**, **Monterrey** and **Mexico City**, even though Canada ranks behind each of India, China, and Mexico in the national results.

Among all 55 cities, **Shanghai** is the city that sees the biggest change in ranking for manufacturing when compared to the overall results—moving up six places from 11th overall to 5th for manufacturing. Relatively lower costs for other corporate taxes in the manufacturing sector are the primary driver of this improvement for Shanghai, reflecting both moderately low property taxes and no gross receipts tax for manufacturing operations.

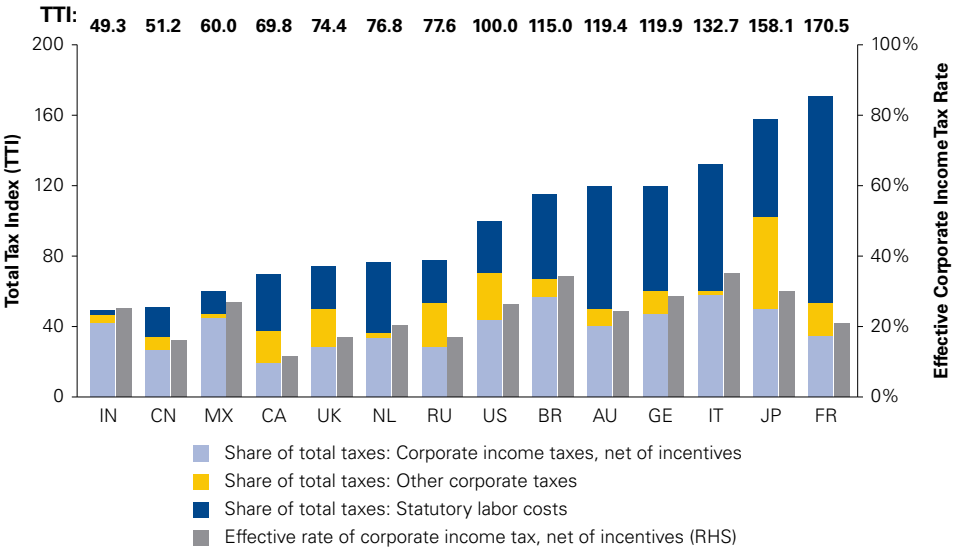
Impact of tax components

Manufacturing operations are typically characterized by relatively larger facilities and relatively high levels of investment in machinery, equipment, and inventories. All of these items may be subject to property taxes in different jurisdictions. Manufacturers also tend to have higher costs related to materials, utilities, and transportation, which may attract sales taxes in some jurisdictions. Finally, wages and benefits are relatively less significant in the manufacturing sector than in other industry sectors, simply because the size of labor costs is diminished as a share of total costs due to process inputs and capital costs.

Non-income-based taxes tend to be more significant in this sector, due to factors such as property tax costs on industrial facilities, the impact of non-refundable sales taxes in some locations, and taxes on machinery and equipment and/or employed capital in some locations. For these reasons, other corporate taxes tend to be relatively more significant in the manufacturing sector, and more than half of all countries score their highest effective rates for other corporate taxes in the manufacturing sector. However, these taxes generally still represent only a small portion of total tax costs, and only account for more than one quarter of total taxes in five countries—Canada, the United States, the United Kingdom, Russia, and Japan.

Even though labor accounts for a smaller share of total costs in this sector than in the service sectors, statutory labor costs still represent a substantial tax cost in many countries. As illustrated in the chart below, in the four continental western European countries, Australia, Canada, and Japan statutory labor costs exceed corporate income taxes, while in all five emerging markets, the United Kingdom, and the United States, the opposite is true.

Total Tax Index by Type of Tax, and Effective Corporate Income Tax Rates – Manufacturing



Appendix A – Detailed Results

Detailed tables of rates. CIT = Corporate Income Tax, OCT = Other Corporate Taxes, SLC = Statutory Labor Costs, TETR = Total Effective Tax Rate, TTI = Total Tax Index

Detailed results by country

Rank	Country	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					OVERALL					
10	Australia	22.8%	4.1%	49.6%	76.5%	7	5	12	10	125.1
11	Brazil	36.1%	14.8%	36.3%	87.2%	13	13	9	11	142.6
2	Canada	7.3%	7.9%	20.9%	36.1%	1	7	7	2	59.1
3	China	14.8%	8.7%	12.9%	36.5%	3	8	3	3	59.7
14	France	14.7%	12.5%	82.6%	109.9%	2	11	14	14	179.7
9	Germany	29.3%	5.6%	39.7%	74.6%	11	6	11	9	122.0
1	India	25.3%	3.4%	1.7%	30.4%	8	4	1	1	49.7
13	Italy	37.6%	1.5%	54.4%	93.5%	14	2	13	13	152.9
12	Japan	31.5%	23.3%	38.3%	93.1%	12	14	10	12	152.3
4	Mexico	27.3%	1.8%	9.8%	38.9%	9	3	2	4	63.6
7	Netherlands	18.6%	1.3%	27.3%	47.2%	6	1	8	7	77.2
5	Russia	17.6%	11.1%	15.2%	43.9%	5	10	4	5	71.7
6	United Kingdom	17.1%	9.2%	18.5%	44.8%	4	9	5	6	73.3
8	United States	28.1%	12.9%	20.2%	61.1%	10	12	6	8	100.0
					DIGITAL					
11	Australia	23.0%	0.0%	49.8%	72.8%	7	1	12	11	135.3
13	Brazil	37.2%	26.0%	41.1%	104.2%	13	14	11	13	193.7
1	Canada	-7.7%	0.1%	16.5%	8.9%	1	4	5	1	16.5
4	China	10.3%	12.2%	14.5%	37.0%	2	13	4	4	68.9
14	France	16.2%	9.6%	80.9%	106.8%	3	12	14	14	198.5
9	Germany	31.0%	0.0%	33.7%	64.7%	10	1	9	9	120.2
2	India	26.1%	1.1%	1.2%	28.4%	8	8	1	2	52.8
12	Italy	41.0%	0.9%	59.9%	101.8%	14	7	13	12	189.2
10	Japan	34.6%	1.5%	34.9%	70.9%	11	10	10	10	131.8
5	Mexico	28.0%	1.8%	10.7%	40.5%	9	11	3	5	75.3
7	Netherlands	19.8%	0.2%	23.8%	43.9%	5	5	8	7	81.6
3	Russia	19.2%	0.7%	10.6%	30.5%	4	6	2	3	56.6
6	United Kingdom	20.6%	0.0%	19.9%	40.6%	6	1	7	6	75.4
8	United States	34.7%	1.4%	17.8%	53.8%	12	9	6	8	100.0

Rank	Country	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					R&D					
9	Australia	1.1%	0.0%	88.3%	89.4%	4	1	12	9	135.5
14	Brazil	53.8%	46.7%	75.0%	175.6%	14	14	11	14	266.0
1	Canada	-11.5%	0.3%	30.4%	19.2%	2	4	5	1	29.0
7	China	4.4%	26.9%	27.2%	58.5%	5	13	4	7	88.6
12	France	-64.9%	22.6%	146.2%	104.0%	1	12	14	12	157.6
10	Germany	31.8%	0.0%	62.9%	94.7%	11	1	9	10	143.5
2	India	20.0%	8.6%	2.4%	31.0%	9	10	1	2	47.0
13	Italy	44.6%	4.5%	104.9%	154.0%	13	8	13	13	233.3
11	Japan	33.5%	5.1%	64.2%	102.8%	12	9	10	11	155.8
6	Mexico	29.2%	3.2%	19.5%	51.9%	10	7	2	6	78.7
3	Netherlands	-6.5%	1.1%	43.6%	38.1%	3	5	8	3	57.8
5	Russia	19.0%	2.5%	20.7%	42.2%	7	6	3	5	63.9
4	United Kingdom	6.5%	0.0%	35.2%	41.7%	6	1	6	4	63.2
8	United States	20.0%	9.7%	36.3%	66.0%	8	11	7	8	100.0
					CORPORATE SERVICES					
11	Australia	29.2%	0.0%	88.3%	117.5%	7	1	12	11	146.2
12	Brazil	34.2%	42.7%	61.9%	138.8%	11	14	9	12	172.7
4	Canada	21.5%	0.2%	33.1%	54.7%	2	4	7	4	68.1
6	China	24.6%	24.2%	21.9%	70.7%	4	13	3	6	88.0
14	France	32.9%	19.4%	144.0%	196.3%	10	12	14	14	244.2
9	Germany	31.1%	0.0%	67.8%	98.9%	9	1	11	9	123.1
1	India	29.7%	7.8%	2.7%	40.2%	8	10	1	1	50.0
13	Italy	49.5%	2.7%	97.5%	149.7%	14	7	13	13	186.2
10	Japan	38.3%	3.3%	66.7%	108.3%	12	9	10	10	134.8
3	Mexico	28.4%	2.7%	16.5%	47.6%	6	7	2	3	59.3
7	Netherlands	25.0%	0.6%	47.4%	73.0%	5	5	8	7	90.9
2	Russia	19.6%	1.3%	24.2%	45.0%	1	6	4	2	56.0
5	United Kingdom	23.1%	0.0%	32.9%	56.0%	3	1	6	5	69.7
8	United States	39.8%	8.3%	32.3%	80.4%	13	11	5	8	100.0
					MANUFACTURING					
10	Australia	24.4%	5.9%	42.0%	72.2%	7	6	12	10	119.4
9	Brazil	34.2%	6.5%	28.9%	69.6%	13	7	9	9	115.0
4	Canada	11.4%	11.1%	19.8%	42.2%	1	9	7	4	69.8
2	China	16.0%	4.7%	10.3%	31.0%	2	5	3	2	51.2
14	France	20.9%	11.5%	70.9%	103.2%	6	10	14	14	170.5
11	Germany	28.5%	7.9%	36.1%	72.5%	11	8	11	11	119.9
1	India	25.2%	3.0%	1.6%	29.9%	8	4	1	1	49.3
12	Italy	35.1%	1.2%	44.0%	80.3%	14	1	13	12	132.7
13	Japan	30.0%	31.8%	33.8%	95.7%	12	14	10	13	158.1
3	Mexico	26.8%	1.5%	8.0%	36.3%	10	2	2	3	60.0
6	Netherlands	20.2%	1.7%	24.6%	46.5%	5	3	8	6	76.8
7	Russia	16.9%	15.2%	14.8%	46.9%	4	12	4	7	77.6
5	United Kingdom	16.9%	13.0%	15.1%	45.0%	3	11	5	5	74.4
8	United States	26.3%	16.2%	18.0%	60.5%	9	13	6	8	100.0

Detailed results by city – Overall

The following table details the overall results for all 113 cities. Within each country, cities are sorted in order of ascending TTI. Rankings are relative to other cities within the same country.

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					OVERALL					
Australia	Brisbane	22.8%	3.6%	48.3%	74.7%	3	1	2	1	122.1
	Adelaide	23.0%	6.7%	45.3%	75.0%	4	4	1	2	122.7
	Melbourne	22.8%	4.2%	48.5%	75.5%	2	3	3	3	123.4
	Sydney	22.8%	4.1%	50.7%	77.5%	1	2	4	4	126.8
Brazil	Belo Horizonte	35.9%	14.4%	34.3%	84.6%	1	1	1	1	138.4
	São Paulo	36.2%	15.2%	38.3%	89.7%	2	2	2	2	146.8
Canada	Saskatoon, SK	5.9%	8.1%	12.8%	26.8%	7	9	4	1	43.8
	Edmonton, AB	11.4%	2.9%	12.7%	27.0%	13	1	2	2	44.2
	Moncton, NB	5.0%	9.2%	13.4%	27.5%	5	14	8	3	45.1
	St. John's, NL	3.1%	7.8%	16.8%	27.8%	2	8	10	4	45.4
	Fredericton, NB	4.8%	9.5%	13.5%	27.8%	4	15	9	5	45.5
	Vancouver, BC	11.6%	5.8%	12.7%	30.1%	14	2	3	6	49.2
	Halifax, NS	8.3%	8.7%	13.2%	30.2%	9	11	7	7	49.4
	Calgary, AB	11.3%	6.9%	12.8%	31.0%	12	4	4	8	50.7
	Trois-Rivieres, QC	2.1%	7.2%	23.6%	32.9%	1	6	14	9	53.8
	Prince George, BC	11.6%	8.8%	12.6%	33.1%	15	13	1	10	54.2
	Charlottetown, PE	13.4%	6.8%	13.1%	33.3%	16	3	6	11	54.4
	Winnipeg, MB	3.3%	13.2%	16.9%	33.4%	3	16	11	12	54.7
	Toronto, ON	9.4%	7.2%	17.6%	34.3%	10	5	13	13	56.0
	Windsor-Essex, ON	9.5%	7.8%	17.5%	34.7%	11	7	12	14	56.8
	Montreal, QC	5.2%	8.5%	24.2%	38.0%	6	10	16	15	62.1
	Quebec City, QC	6.0%	8.7%	23.7%	38.4%	8	12	15	16	62.8
China	Chengdu	15.0%	7.6%	8.8%	31.4%	2	1	1	1	51.3
	Shanghai	14.7%	9.8%	17.1%	41.6%	1	2	2	2	68.0
France	Marseille	15.5%	12.1%	77.7%	105.3%	2	1	1	1	172.3
	Paris	14.0%	12.9%	87.5%	114.4%	1	2	2	2	187.1
Germany	Berlin	28.4%	6.3%	37.6%	72.3%	1	2	1	1	118.2
	Frankfurt	30.2%	4.8%	41.9%	76.9%	2	1	2	2	125.8
India	Chennai	25.4%	1.5%	1.5%	28.4%	2	1	1	1	46.4
	Mumbai	25.2%	5.4%	1.8%	32.4%	1	2	2	2	53.0
Italy	Milan	36.1%	1.5%	54.6%	92.2%	1	2	2	1	150.8
	Rome	39.1%	1.5%	54.2%	94.8%	2	1	1	2	155.0
Japan	Osaka	31.5%	18.4%	36.9%	86.8%	1	1	1	1	141.9
	Tokyo	31.5%	28.2%	39.7%	99.4%	2	2	2	2	162.6
Mexico	Monterrey	27.3%	1.5%	9.6%	38.4%	1	1	1	1	62.8
	Mexico City	27.3%	2.0%	9.9%	39.3%	2	2	2	2	64.2

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					OVERALL					
Netherlands	Amsterdam	18.6%	1.1%	27.3%	47.0%	1	1	1	1	76.9
	Rotterdam	18.6%	1.5%	27.3%	47.3%	1	2	1	2	77.4
Russia	Saint Petersburg	17.0%	11.0%	13.5%	41.5%	1	1	1	1	67.8
	Moscow	18.2%	11.2%	16.9%	46.3%	2	2	2	2	75.7
UK	Manchester	17.4%	6.8%	16.6%	40.8%	2	1	1	1	66.8
	London	16.9%	11.6%	20.3%	48.8%	1	2	2	2	79.8
US	Baton Rouge, LA	15.7%	7.6%	17.3%	40.6%	3	23	13	1	66.5
	New Orleans, LA	14.7%	8.1%	18.6%	41.4%	1	27	28	2	67.7
	Shreveport, LA	15.4%	11.2%	16.6%	43.2%	2	44	3	3	70.7
	Omaha, NE	20.3%	5.9%	18.5%	44.7%	4	9	24	4	73.1
	Youngstown, OH	26.6%	4.5%	17.1%	48.2%	30	3	9	5	78.8
	Cincinnati, OH	26.8%	5.0%	17.7%	49.4%	33	6	17	6	80.8
	Bangor, ME	27.8%	4.2%	18.4%	50.4%	48	2	23	7	82.4
	Baltimore, MD	26.5%	4.9%	19.5%	50.9%	26	5	42	8	83.3
	Lexington, KY	29.1%	4.8%	17.2%	51.2%	59	4	12	9	83.7
	Cedar Rapids, IA	25.2%	8.0%	18.6%	51.8%	10	26	27	10	84.6
	Montgomery, AL	26.6%	7.6%	17.7%	51.8%	29	22	16	11	84.8
	Wilmington, DE	28.1%	3.7%	20.3%	52.1%	53	1	56	12	85.1
	Cleveland, OH	27.0%	7.1%	18.0%	52.1%	35	18	21	13	85.2
	Raleigh, NC	27.6%	6.1%	18.6%	52.3%	47	10	29	14	85.5
	Providence, RI	25.1%	6.6%	20.8%	52.5%	9	13	59	15	85.8
	Atlanta, GA	22.3%	11.5%	19.1%	53.0%	5	46	39	16	86.7
	Madison, WI	28.2%	5.1%	19.8%	53.1%	55	7	48	17	86.8
	Indianapolis, IN	27.0%	9.3%	16.9%	53.1%	36	30	4	18	86.9
	Wichita, KS	29.7%	5.4%	18.2%	53.2%	63	8	22	19	87.1
	Cheyenne, WY	26.1%	10.0%	17.5%	53.6%	20	35	15	20	87.7
	Hartford, CT	24.1%	7.6%	22.2%	54.0%	7	24	66	21	88.3
	Sioux Falls, SD	26.1%	11.4%	16.6%	54.0%	19	45	2	22	88.3
	Little Rock, AR	26.8%	10.2%	17.3%	54.3%	32	36	14	23	88.8
	Pittsburgh, PA	28.2%	7.5%	18.8%	54.5%	56	19	33	24	89.1
	Saginaw, MI	25.9%	9.7%	19.0%	54.5%	17	32	35	25	89.2
	Buffalo, NY	27.2%	9.5%	17.9%	54.5%	39	31	20	26	89.2
	Orlando, FL	25.5%	12.1%	17.2%	54.8%	13	49	11	27	89.6
	Minneapolis, MN	24.7%	7.5%	22.7%	54.9%	8	20	67	28	89.8
	Mobile, AL	26.5%	10.9%	17.7%	55.1%	28	41	19	29	90.1
	Champaign-Urbana, IL	29.3%	6.4%	19.4%	55.1%	60	12	41	30	90.2
	Spokane, WA	25.9%	9.7%	19.5%	55.2%	18	33	43	31	90.3
	Philadelphia, PA	28.2%	7.1%	20.3%	55.5%	54	17	55	32	90.8
	Tampa, FL	25.5%	13.0%	17.1%	55.6%	12	54	10	33	91.0
	Nashville, TN	27.8%	8.3%	19.8%	55.9%	49	28	50	34	91.5

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					OVERALL					
US	Boston, MA	28.4%	8.0%	19.8%	56.2%	57	25	49	35	91.9
	Fargo, ND	27.9%	11.5%	16.9%	56.4%	50	47	5	36	92.2
	North Virginia, Metro DC, VA	26.8%	10.6%	19.0%	56.5%	34	39	37	37	92.4
	Seattle, WA	25.7%	9.8%	21.1%	56.6%	14	34	60	38	92.6
	Miami, FL	25.4%	13.7%	17.7%	56.7%	11	56	18	39	92.8
	Trenton, NJ	27.0%	7.0%	23.0%	56.9%	37	16	68	40	93.1
	Manchester, NH	30.3%	6.4%	20.5%	57.2%	69	11	58	41	93.6
	Burlington, VT	27.4%	10.2%	19.9%	57.4%	43	37	51	42	93.9
	Denver, CO	27.5%	11.1%	19.0%	57.6%	45	43	38	43	94.3
	Billings, MT	29.5%	6.6%	21.6%	57.7%	61	14	64	44	94.3
	Austin, TX	26.4%	12.8%	18.5%	57.7%	25	53	25	45	94.4
	Chicago, IL	29.1%	7.6%	21.5%	58.1%	58	21	62	46	95.0
	Oklahoma City, OK	27.3%	11.0%	19.9%	58.2%	42	42	52	47	95.1
	Salt Lake City, UT	27.2%	12.6%	18.7%	58.4%	40	52	30	48	95.5
	Boise, ID	28.1%	10.4%	19.9%	58.4%	52	38	53	49	95.5
	Gulfport-Biloxi, MS	27.5%	14.7%	16.4%	58.6%	46	64	1	50	95.9
	Detroit, MI	25.8%	13.1%	19.7%	58.6%	16	55	46	51	95.9
	Salem, OR	30.0%	6.7%	22.1%	58.8%	68	15	65	52	96.2
	Beaumont, TX	26.3%	13.8%	18.7%	58.9%	23	58	32	53	96.3
	Houston, TX	26.3%	14.6%	19.3%	60.2%	21	62	40	54	98.4
	Phoenix, AZ	26.5%	16.6%	17.0%	60.2%	27	67	7	55	98.4
	Dallas-Fort Worth, TX	26.3%	15.1%	18.9%	60.3%	22	65	34	56	98.6
	Albuquerque, NM	23.2%	18.9%	18.5%	60.6%	6	71	26	57	99.2
	Charleston, WV	26.6%	17.5%	17.0%	61.0%	31	68	6	58	99.8
	Spartanburg, SC	26.4%	18.0%	18.7%	63.0%	24	69	31	65	100.0
	Sacramento, CA	29.9%	11.8%	19.6%	61.3%	65	48	45	59	100.2
	Riverside-San Bernardino, CA	29.9%	12.4%	19.0%	61.4%	67	51	36	60	100.4
	San Diego, CA	29.9%	12.4%	19.5%	61.8%	66	50	44	61	101.0
	Las Vegas, NV	25.8%	14.6%	21.4%	61.9%	15	63	61	62	101.2
	New York City, NY	27.1%	14.4%	20.4%	61.9%	38	60	57	63	101.3
	Portland, OR	30.8%	8.7%	23.0%	62.6%	71	29	69	64	102.3
	Jackson, MS	27.5%	18.8%	17.1%	63.4%	44	70	8	66	103.7
	Los Angeles, CA	29.8%	14.5%	20.0%	64.2%	64	61	54	67	105.1
	Honolulu, HI	27.2%	13.7%	23.4%	64.3%	41	57	71	68	105.2
	St. Louis, MO	28.0%	16.6%	19.8%	64.4%	51	66	47	69	105.3
	Anchorage, AK	30.8%	10.8%	23.2%	64.8%	70	40	70	70	105.9
	San Francisco, CA	29.5%	14.1%	21.6%	65.2%	62	59	63	71	106.6

Detailed results by city – Digital

The following table details the overall results for all 113 cities. Within each country, cities are sorted in order of ascending TTI. Rankings are relative to other cities within the same country.

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
DIGITAL										
Australia	Adelaide	23.4%	0.0%	45.6%	69.0%	4	1	1	1	128.2
	Melbourne	23.1%	0.0%	48.5%	71.6%	3	1	2	2	133.0
	Brisbane	23.0%	0.0%	49.0%	72.0%	2	1	3	3	133.8
	Sydney	22.9%	0.0%	51.1%	74.0%	1	1	4	4	137.6
Brazil	Belo Horizonte	37.1%	21.5%	39.5%	98.1%	1	1	1	1	182.4
	São Paulo	37.3%	30.4%	42.6%	110.3%	2	2	2	2	205.1
Canada	Toronto, ON	-9.4%	0.1%	13.5%	4.2%	1	6	13	1	7.9
	Windsor-Essex, ON	-9.3%	0.1%	13.5%	4.3%	2	6	12	2	8.0
	Halifax, NS	-2.9%	0.0%	9.7%	6.8%	6	1	9	3	12.6
	Montreal, QC	-6.1%	0.2%	19.5%	13.6%	3	8	16	4	25.2
	Quebec City, QC	-5.5%	0.2%	19.2%	13.8%	4	8	15	5	25.7
	Trois-Rivieres, QC	-5.5%	0.2%	19.2%	13.9%	5	8	14	6	25.8
	Fredericton, NB	8.9%	0.0%	9.1%	18.0%	8	1	5	7	33.4
	Moncton, NB	9.0%	0.0%	9.1%	18.1%	9	1	5	8	33.7
	Vancouver, BC	9.3%	0.4%	8.9%	18.6%	10	11	1	9	34.5
	Prince George, BC	9.4%	0.4%	8.9%	18.6%	11	11	1	10	34.6
	Saskatoon, SK	11.1%	0.6%	9.1%	20.8%	12	13	8	11	38.6
	Winnipeg, MB	8.0%	1.6%	13.4%	23.0%	7	16	11	12	42.7
	Edmonton, AB	13.9%	0.0%	9.1%	23.0%	14	1	4	13	42.7
	Calgary, AB	13.9%	1.5%	9.1%	24.5%	14	15	7	14	45.6
	St. John's, NL	13.7%	0.0%	12.8%	26.5%	13	1	10	15	49.2
	Charlottetown, PE	16.5%	1.3%	9.0%	26.8%	16	14	3	16	49.8
China	Chengdu	10.5%	11.3%	10.4%	32.2%	2	1	1	1	59.8
	Shanghai	10.2%	13.1%	18.6%	41.9%	1	2	2	2	77.9
France	Marseille	17.3%	8.0%	75.4%	100.7%	2	1	1	1	187.2
	Paris	15.1%	11.3%	86.5%	112.9%	1	2	2	2	209.8
Germany	Berlin	30.1%	0.0%	31.6%	61.7%	1	1	1	1	114.7
	Frankfurt	31.9%	0.0%	35.7%	67.6%	2	1	2	2	125.7
India	Chennai	26.4%	0.7%	1.1%	28.3%	2	1	1	1	52.5
	Mumbai	25.8%	1.4%	1.3%	28.5%	1	2	2	2	52.9
Italy	Milan	39.4%	1.0%	59.8%	100.1%	1	2	1	1	186.0
	Rome	42.7%	0.8%	60.1%	103.5%	2	1	2	2	192.4
Japan	Osaka	34.6%	1.5%	33.9%	70.0%	1	1	1	1	130.1
	Tokyo	34.7%	1.5%	35.8%	71.9%	2	1	2	2	133.6

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					DIGITAL					
Mexico	Monterrey	28.0%	1.5%	10.6%	40.1%	1	1	1	1	74.5
	Mexico City	28.0%	2.1%	10.9%	40.9%	1	2	2	2	76.1
Netherlands	Amsterdam	19.8%	0.2%	23.8%	43.9%	1	1	1	1	81.5
	Rotterdam	19.8%	0.2%	23.8%	43.9%	1	2	1	2	81.6
Russia	Saint Petersburg	18.6%	0.7%	8.9%	28.2%	1	1	1	1	52.4
	Moscow	19.7%	0.7%	12.3%	32.8%	2	1	2	2	60.9
UK	Manchester	20.9%	0.0%	18.0%	38.9%	2	1	1	1	72.2
	London	20.4%	0.0%	21.8%	42.2%	1	1	2	2	78.5
US	New Orleans, LA	-12.1%	3.2%	16.5%	7.6%	1	68	32	1	14.1
	Baton Rouge, LA	-8.3%	3.1%	15.4%	10.2%	2	67	6	2	18.9
	Shreveport, LA	-6.8%	3.6%	14.9%	11.6%	3	70	1	3	21.6
	Atlanta, GA	20.2%	1.3%	16.7%	38.2%	5	26	38	4	71.1
	Hartford, CT	18.8%	1.4%	18.2%	38.4%	4	31	61	5	71.4
	Orlando, FL	23.2%	1.5%	15.8%	40.5%	9	36	12	6	75.2
	Tampa, FL	23.2%	1.5%	15.8%	40.5%	8	44	13	7	75.3
	Miami, FL	22.8%	1.6%	16.2%	40.6%	7	46	24	8	75.4
	Providence, RI	21.8%	1.8%	18.0%	41.6%	6	55	58	9	77.2
	Albuquerque, NM	24.2%	1.4%	16.8%	42.5%	10	32	40	10	78.9
	Madison, WI	27.6%	0.6%	16.8%	45.0%	11	5	40	11	83.7
	Omaha, NE	28.7%	1.6%	15.9%	46.3%	12	50	16	12	86.0
	Little Rock, AR	28.8%	1.4%	16.1%	46.4%	13	34	22	13	86.1
	Sioux Falls, SD	31.8%	0.7%	15.2%	47.7%	23	7	4	14	88.6
	Denver, CO	29.3%	1.6%	17.0%	47.9%	14	46	45	15	89.0
	Cedar Rapids, IA	30.9%	0.8%	16.4%	48.1%	16	11	31	16	89.4
	Cheyenne, WY	32.0%	1.0%	15.2%	48.2%	28	20	3	17	89.5
	Bangor, ME	31.8%	0.6%	16.0%	48.5%	24	4	20	18	90.1
	Youngstown, OH	32.4%	0.7%	15.5%	48.7%	30	10	8	19	90.5
	Saginaw, MI	31.5%	1.4%	16.5%	49.4%	19	29	32	20	91.8
	Cincinnati, OH	32.6%	0.8%	16.1%	49.5%	31	11	23	21	92.1
	Detroit, MI	31.5%	1.5%	16.9%	49.9%	18	44	42	22	92.8
	Austin, TX	31.9%	1.8%	16.3%	50.0%	27	54	27	23	92.9
	Minneapolis, MN	30.4%	0.8%	18.8%	50.1%	15	15	65	24	93.0
	Beaumont, TX	31.9%	1.9%	16.4%	50.1%	26	57	29	25	93.1
	Cleveland, OH	32.9%	0.9%	16.4%	50.2%	33	17	28	26	93.3
	Spokane, WA	31.7%	1.5%	17.1%	50.2%	21	36	46	27	93.4
	Indianapolis, IN	32.8%	1.7%	15.9%	50.3%	32	51	14	28	93.5
	Dallas-Fort Worth, TX	31.8%	1.9%	16.6%	50.4%	24	60	34	29	93.6
	Fargo, ND	34.2%	0.8%	15.5%	50.5%	43	13	7	30	93.8
	Houston, TX	31.8%	1.9%	16.9%	50.6%	22	56	43	31	94.0
	Gulfport-Biloxi, MS	33.7%	2.3%	15.0%	51.1%	41	65	2	32	94.9

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					DIGITAL					
US	Phoenix, AZ	33.6%	1.6%	15.9%	51.1%	39	48	15	33	95.1
	Montgomery, AL	33.5%	1.7%	16.0%	51.2%	37	52	19	34	95.2
	Salt Lake City, UT	33.4%	1.2%	16.7%	51.3%	36	24	36	35	95.3
	Mobile, AL	33.5%	1.9%	15.9%	51.4%	38	57	16	36	95.5
	Seattle, WA	31.4%	1.5%	18.5%	51.4%	17	41	64	37	95.5
	Jackson, MS	33.6%	2.6%	15.6%	51.8%	40	66	9	38	96.3
	Oklahoma City, OK	34.2%	1.5%	16.2%	51.9%	44	39	25	39	96.5
	Wichita, KS	36.1%	0.8%	15.7%	52.6%	61	13	11	41	97.8
	Baltimore, MD	33.9%	1.9%	17.0%	52.8%	42	59	44	42	98.2
	Honolulu, HI	32.3%	0.6%	20.1%	53.0%	29	5	71	43	98.4
	Burlington, VT	34.9%	1.4%	16.6%	53.0%	47	32	35	44	98.5
	Raleigh, NC	34.9%	1.5%	16.7%	53.1%	46	36	39	45	98.7
	Charleston, WV	33.3%	4.7%	15.3%	53.2%	35	71	5	46	98.9
	Buffalo, NY	36.3%	1.0%	16.1%	53.4%	64	22	21	47	99.3
	Las Vegas, NV	31.6%	3.5%	18.4%	53.5%	20	69	63	48	99.5
	Nashville, TN	35.4%	2.3%	16.0%	53.6%	54	64	18	49	99.7
	Lexington, KY	37.4%	0.7%	15.6%	53.7%	68	8	9	50	99.8
	Champaign-Urbana, IL	36.3%	1.0%	16.4%	53.8%	64	20	30	51	99.9
	Spartanburg, SC	33.1%	2.2%	16.7%	52.0%	34	63	36	40	100.0
	Riverside-San Bernardino, CA	35.5%	1.3%	17.2%	53.9%	56	25	48	52	100.3
	St. Louis, MO	35.1%	2.0%	17.1%	54.2%	50	61	47	53	100.8
	Sacramento, CA	35.3%	1.3%	17.6%	54.2%	53	28	51	54	100.8
	San Diego, CA	35.3%	1.4%	17.7%	54.4%	52	34	52	55	101.1
	Billings, MT	36.3%	0.5%	17.7%	54.5%	62	1	54	56	101.3
	Boise, ID	35.4%	1.3%	17.9%	54.7%	55	26	56	57	101.6
	North Virginia, Metro DC, VA	35.2%	2.1%	17.4%	54.7%	51	62	49	58	101.6
	Los Angeles, CA	35.1%	1.5%	18.1%	54.7%	49	41	60	59	101.7
	Boston, MA	35.1%	1.7%	17.9%	54.8%	48	52	57	60	101.8
	Chicago, IL	36.0%	1.0%	18.0%	54.9%	60	19	59	61	102.1
	New York City, NY	35.8%	1.1%	18.3%	55.2%	57	23	62	62	102.6
	Wilmington, DE	35.9%	1.5%	17.8%	55.3%	59	41	55	63	102.7
	San Francisco, CA	34.7%	1.5%	19.3%	55.4%	45	39	67	64	103.0
	Pittsburgh, PA	38.3%	0.9%	16.3%	55.5%	71	18	26	65	103.2
	Salem, OR	36.3%	0.6%	19.0%	55.8%	63	3	66	66	103.8
	Manchester, NH	36.7%	1.6%	17.7%	56.0%	66	48	53	67	104.0
	Trenton, NJ	35.9%	0.8%	19.6%	56.4%	58	15	69	68	104.8
	Philadelphia, PA	38.0%	1.4%	17.5%	56.9%	70	30	50	69	105.7
	Portland, OR	37.1%	0.7%	19.6%	57.4%	67	8	68	70	106.7
	Anchorage, AK	37.5%	0.6%	19.8%	57.8%	69	2	70	71	107.4

Detailed results by city – R&D

The following table details the overall results for all 113 cities. Within each country, cities are sorted in order of ascending TTI. Rankings are relative to other cities within the same country.

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
RESEARCH & DEVELOPMENT										
Australia	Adelaide	1.3%	0.0%	81.0%	82.3%	4	1	1	1	124.7
	Melbourne	1.1%	0.0%	86.1%	87.2%	3	1	2	2	132.1
	Brisbane	1.1%	0.0%	87.8%	89.0%	2	1	3	3	134.8
	Sydney	1.1%	0.0%	90.6%	91.7%	1	1	4	4	138.9
Brazil	São Paulo	54.6%	36.5%	78.4%	169.5%	2	1	2	1	256.8
	Belo Horizonte	53.1%	56.9%	71.6%	181.6%	1	2	1	2	275.1
Canada	Fredericton, NB	-42.4%	0.0%	19.6%	-22.7%	1	1	7	1	-34.4
	Moncton, NB	-41.7%	0.0%	19.6%	-22.1%	2	1	7	2	-33.4
	Saskatoon, SK	-39.6%	5.0%	17.3%	-17.3%	4	13	5	3	-26.2
	Halifax, NS	-31.6%	0.0%	18.0%	-13.6%	6	1	6	4	-20.7
	St. John's, NL	-34.9%	0.0%	23.8%	-11.0%	5	1	10	5	-16.7
	Winnipeg, MB	-40.5%	10.9%	25.6%	-4.0%	3	15	13	6	-6.0
	Edmonton, AB	-16.8%	0.0%	17.2%	0.4%	11	1	3	7	0.7
	Calgary, AB	-17.0%	7.8%	17.2%	8.1%	10	14	3	8	12.2
	Montreal, QC	-23.1%	0.3%	36.2%	13.4%	7	8	16	9	20.3
	Quebec City, QC	-22.3%	0.3%	35.6%	13.6%	8	8	15	10	20.7
	Trois-Rivieres, QC	-22.2%	0.3%	35.5%	13.7%	9	8	14	11	20.8
	Prince George, BC	0.0%	4.7%	17.0%	21.7%	12	11	1	12	32.9
	Vancouver, BC	0.0%	4.7%	17.0%	21.7%	12	11	2	13	32.9
	Windsor-Essex, ON	0.0%	0.2%	24.5%	24.7%	12	6	11	14	37.4
	Toronto, ON	0.0%	0.2%	24.6%	24.8%	12	6	12	15	37.6
	Charlottetown, PE	18.2%	12.3%	20.9%	51.3%	16	16	9	16	77.7
China	Chengdu	5.4%	25.2%	19.5%	50.2%	2	1	1	1	76.1
	Shanghai	3.3%	28.5%	34.8%	66.7%	1	2	2	2	101.0
France	Marseille	-60.1%	19.3%	137.1%	96.3%	2	1	1	1	145.9
	Paris	-69.7%	26.0%	155.4%	111.7%	1	2	2	2	169.2
Germany	Berlin	30.8%	0.0%	59.0%	89.9%	1	1	1	1	136.2
	Frankfurt	32.8%	0.0%	66.7%	99.6%	2	1	2	2	150.9
India	Chennai	20.0%	6.2%	2.2%	28.4%	2	1	1	1	43.0
	Mumbai	20.0%	10.9%	2.6%	33.5%	1	2	2	2	50.8
Italy	Milan	42.8%	4.9%	105.3%	153.0%	1	2	2	1	231.9
	Rome	46.4%	4.0%	104.6%	155.0%	2	1	1	2	234.9
Japan	Osaka	33.3%	5.2%	62.5%	101.0%	1	2	1	1	153.0
	Tokyo	33.8%	5.1%	65.8%	104.7%	2	1	2	2	158.7
Mexico	Monterrey	29.1%	2.8%	19.3%	51.2%	1	1	1	1	77.6
	Mexico City	29.2%	3.7%	19.7%	52.6%	2	2	2	2	79.7

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
RESEARCH & DEVELOPMENT										
Netherlands	Amsterdam	-6.5%	0.9%	43.6%	38.0%	1	1	1	1	57.5
	Rotterdam	-6.5%	1.2%	43.6%	38.3%	1	2	1	2	58.0
Russia	Saint Petersburg	18.4%	2.5%	17.7%	38.5%	1	1	1	1	58.3
	Moscow	19.7%	2.5%	23.7%	45.9%	2	1	2	2	69.5
UK	Manchester	7.2%	0.0%	32.0%	39.2%	2	1	1	1	59.4
	London	5.7%	0.0%	38.5%	44.3%	1	1	2	2	67.1
US	Omaha, NE	6.2%	10.2%	32.6%	48.9%	1	50	22	1	74.1
	Albuquerque, NM	10.6%	10.9%	33.5%	55.0%	2	56	31	2	83.3
	Minneapolis, MN	12.6%	6.6%	36.9%	56.1%	3	14	60	3	85.1
	Cedar Rapids, IA	15.2%	7.9%	33.1%	56.3%	5	23	29	4	85.3
	Fargo, ND	20.6%	7.0%	29.0%	56.7%	32	17	1	5	85.9
	Atlanta, GA	13.8%	8.3%	35.6%	57.6%	4	29	53	6	87.3
	Indianapolis, IN	19.9%	8.1%	29.9%	57.9%	23	26	4	7	87.7
	Cheyenne, WY	21.1%	7.1%	29.8%	58.1%	40	19	2	8	88.0
	Bangor, ME	20.6%	4.8%	32.9%	58.3%	31	7	26	9	88.3
	Youngstown, OH	20.8%	6.4%	31.0%	58.3%	34	12	11	10	88.3
	Sioux Falls, SD	20.5%	7.3%	30.4%	58.3%	28	21	6	11	88.4
	Cincinnati, OH	20.8%	6.5%	32.0%	59.4%	34	13	18	12	90.0
	Madison, WI	19.8%	5.4%	34.8%	60.1%	21	8	45	13	91.0
	Saginaw, MI	19.2%	8.1%	32.8%	60.1%	17	28	24	14	91.1
	Baltimore, MD	21.2%	5.9%	33.1%	60.2%	43	11	27	15	91.2
	Orlando, FL	20.9%	8.7%	30.8%	60.3%	37	32	9	16	91.4
	Phoenix, AZ	19.6%	10.5%	30.6%	60.7%	19	54	7	17	91.9
	Tampa, FL	20.9%	9.2%	30.8%	60.9%	37	41	10	18	92.3
	Wilmington, DE	22.1%	3.0%	36.0%	61.2%	58	6	55	19	92.7
	Cleveland, OH	20.8%	7.8%	32.6%	61.2%	36	22	23	20	92.8
	Detroit, MI	19.0%	8.8%	33.5%	61.2%	12	34	32	21	92.8
	Miami, FL	20.5%	9.4%	31.7%	61.6%	27	42	16	22	93.3
	Salt Lake City, UT	19.9%	8.4%	33.3%	61.6%	23	30	30	23	93.3
	Spokane, WA	19.8%	10.3%	31.6%	61.7%	22	51	15	24	93.6
	Lexington, KY	24.6%	5.8%	31.5%	61.9%	67	9	13	25	93.7
	Billings, MT	23.0%	1.7%	37.2%	61.9%	62	1	62	26	93.8
	Riverside-San Bernardino, CA	19.1%	8.9%	34.0%	62.0%	14	36	37	27	93.9
	Sacramento, CA	18.8%	8.9%	34.8%	62.5%	11	38	45	28	94.6
	Raleigh, NC	21.8%	8.1%	32.8%	62.7%	52	25	24	29	95.0
	Manchester, NH	22.3%	2.9%	37.5%	62.7%	59	5	64	31	95.0
	San Diego, CA	18.7%	9.1%	34.9%	62.7%	10	39	47	30	95.0
	Little Rock, AR	21.8%	10.1%	31.4%	63.3%	51	48	12	32	95.9
	Boston, MA	19.1%	9.6%	34.6%	63.3%	13	43	43	33	95.9
	Buffalo, NY	22.7%	8.8%	31.8%	63.3%	61	35	17	34	95.9

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
RESEARCH & DEVELOPMENT										
US	Seattle, WA	18.5%	10.9%	34.2%	63.6%	9	55	39	35	96.4
	Salem, OR	24.6%	2.0%	37.2%	63.8%	67	2	63	36	96.7
	Gulfport-Biloxi, MS	22.3%	11.6%	29.9%	63.9%	59	63	4	37	96.8
	Boise, ID	21.1%	8.0%	34.9%	64.0%	40	24	48	38	97.0
	Los Angeles, CA	18.2%	10.0%	35.9%	64.2%	8	47	54	39	97.2
	Wichita, KS	23.9%	7.2%	33.1%	64.2%	65	20	28	39	97.2
	Baton Rouge, LA	19.2%	12.9%	32.5%	64.6%	15	67	19	41	97.9
	Burlington, VT	20.8%	8.7%	35.2%	64.7%	33	33	50	43	98.1
	Champaign-Urbana, IL	21.3%	8.5%	35.0%	64.8%	46	31	49	44	98.2
	Montgomery, AL	21.3%	11.3%	32.5%	65.1%	48	58	19	45	98.7
	Mobile, AL	21.2%	11.5%	32.5%	65.3%	45	60	21	46	98.9
	Shreveport, LA	19.6%	14.2%	31.5%	65.4%	20	70	14	47	99.0
	Jackson, MS	22.1%	12.5%	30.7%	65.4%	57	66	8	48	99.1
	San Francisco, CA	17.1%	10.0%	38.4%	65.4%	6	46	67	49	99.2
	New Orleans, LA	18.0%	13.0%	34.7%	65.6%	7	68	44	50	99.5
	Anchorage, AK	24.4%	2.0%	39.2%	65.7%	66	2	68	51	99.5
	Denver, CO	21.9%	9.8%	34.2%	65.9%	55	45	38	52	99.8
	New York City, NY	20.6%	8.9%	36.5%	65.9%	30	36	58	53	99.9
	Portland, OR	25.1%	2.6%	38.3%	66.0%	69	4	66	54	100.0
	Spartanburg, SC	20.5%	10.4%	33.7%	64.6%	28	52	35	42	100.0
	Chicago, IL	19.9%	8.1%	38.3%	66.2%	25	27	65	55	100.4
	Charleston, WV	20.9%	15.7%	29.8%	66.4%	39	71	2	56	100.5
	North Virginia, Metro DC, VA	21.8%	10.2%	34.4%	66.4%	53	49	41	57	100.6
	Providence, RI	19.2%	10.4%	37.0%	66.5%	16	52	61	58	100.8
	Pittsburgh, PA	26.4%	6.6%	33.6%	66.6%	71	14	34	59	100.9
	Austin, TX	21.7%	11.2%	33.8%	66.7%	50	57	36	60	101.0
	Oklahoma City, OK	21.8%	9.2%	36.1%	67.1%	54	40	57	62	101.7
	Beaumont, TX	21.3%	11.5%	34.3%	67.1%	47	61	40	61	101.7
	Honolulu, HI	22.0%	5.9%	39.4%	67.4%	56	10	69	63	102.1
	Dallas-Fort Worth, TX	21.3%	11.7%	34.5%	67.6%	48	64	42	64	102.4
	Houston, TX	21.2%	11.4%	35.4%	68.0%	44	59	52	65	103.0
	Philadelphia, PA	25.4%	6.8%	36.1%	68.3%	70	16	56	66	103.4
	Las Vegas, NV	19.2%	13.1%	36.9%	69.2%	17	69	59	67	104.8
	Trenton, NJ	21.2%	7.0%	41.0%	69.3%	42	18	71	68	104.9
	Nashville, TN	23.5%	12.2%	33.5%	69.3%	64	65	32	69	105.0
	St. Louis, MO	23.3%	11.6%	35.2%	70.1%	63	62	50	70	106.2
	Hartford, CT	20.3%	9.7%	40.4%	70.4%	26	44	70	71	106.7

Detailed results by city – Corporate services

The following table details the overall results for all 113 cities. Within each country, cities are sorted in order of ascending TTI. Rankings are relative to other cities within the same country.

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
CORPORATE SERVICES										
Australia	Adelaide	29.2%	0.0%	80.5%	109.7%	1	1	1	1	136.5
	Brisbane	29.2%	0.0%	85.8%	115.0%	1	1	2	2	143.1
	Melbourne	29.2%	0.0%	86.4%	115.6%	1	1	3	3	143.8
	Sydney	29.2%	0.0%	90.2%	119.4%	1	1	4	4	148.6
Brazil	Belo Horizonte	34.2%	37.1%	59.3%	130.6%	1	1	1	1	162.5
	São Paulo	34.2%	48.4%	64.4%	147.0%	1	2	2	2	182.9
Canada	Moncton, NB	24.6%	0.0%	19.2%	43.8%	4	1	2	1	54.5
	Fredericton, NB	24.6%	0.0%	19.4%	44.0%	4	1	3	2	54.8
	Edmonton, AB	24.6%	0.0%	20.1%	44.7%	4	1	7	3	55.6
	Prince George, BC	20.3%	5.2%	19.7%	45.2%	2	13	4	4	56.3
	Vancouver, BC	20.3%	5.2%	19.9%	45.4%	2	13	6	5	56.4
	Calgary, AB	24.6%	3.5%	20.3%	48.4%	4	11	8	6	60.3
	Saskatoon, SK	26.6%	4.6%	19.8%	51.0%	12	12	5	7	63.5
	Halifax, NS	30.5%	0.0%	20.7%	51.2%	15	1	9	8	63.7
	Windsor-Essex, ON	24.8%	0.1%	27.4%	52.4%	8	6	12	9	65.2
	Toronto, ON	24.8%	0.1%	28.1%	53.0%	8	6	13	10	65.9
	St. John's, NL	28.6%	0.0%	25.5%	54.1%	14	1	10	11	67.3
	Montreal, QC	18.0%	0.2%	38.1%	56.4%	1	8	16	12	70.1
	Charlottetown, PE	30.5%	11.8%	19.1%	61.4%	15	16	1	13	76.4
	Winnipeg, MB	26.6%	8.3%	27.1%	62.0%	12	15	11	14	77.2
	Trois-Rivieres, QC	26.5%	0.2%	36.4%	63.2%	10	8	14	15	78.6
	Quebec City, QC	26.5%	0.2%	36.7%	63.4%	10	8	15	16	78.9
China	Chengdu	24.6%	22.4%	15.7%	62.7%	1	1	1	1	78.0
	Shanghai	24.6%	26.0%	28.1%	78.6%	1	2	2	2	97.9
France	Marseille	32.9%	16.5%	134.3%	183.7%	1	1	1	1	228.6
	Paris	32.9%	22.3%	153.6%	208.8%	1	2	2	2	259.8
Germany	Berlin	30.1%	0.0%	64.2%	94.3%	1	1	1	1	117.4
	Frankfurt	32.1%	0.0%	71.4%	103.5%	2	1	2	2	128.8
India	Chennai	29.7%	5.7%	2.5%	37.8%	1	1	1	1	47.1
	Mumbai	29.7%	10.0%	2.9%	42.6%	1	2	2	2	53.0
Italy	Milan	46.8%	2.7%	97.1%	146.6%	1	2	1	1	182.4
	Rome	52.2%	2.7%	97.8%	152.7%	2	1	2	2	190.0
Japan	Osaka	38.2%	3.3%	64.1%	105.6%	1	1	1	1	131.4
	Tokyo	38.4%	3.3%	69.3%	111.0%	2	2	2	2	138.1

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
CORPORATE SERVICES										
Mexico	Monterrey	28.4%	2.2%	16.2%	46.8%	1	1	1	1	58.3
	Mexico City	28.5%	3.2%	16.8%	48.5%	2	2	2	2	60.3
Netherlands	Amsterdam	25.0%	0.6%	47.4%	73.0%	1	1	1	1	90.8
	Rotterdam	25.0%	0.7%	47.4%	73.1%	1	2	1	2	90.9
Russia	Saint Petersburg	19.6%	1.3%	21.1%	41.9%	1	1	1	1	52.2
	Moscow	19.6%	1.3%	27.3%	48.1%	1	1	2	2	59.9
UK	Manchester	23.1%	0.0%	29.3%	52.5%	1	1	1	1	65.3
	London	23.1%	0.0%	36.4%	59.5%	1	1	2	2	74.0
US	Omaha, NE	31.8%	8.0%	28.4%	68.2%	1	45	16	1	84.9
	Sioux Falls, SD	34.6%	7.4%	26.4%	68.4%	4	32	1	2	85.1
	Cheyenne, WY	34.6%	6.1%	28.2%	69.0%	4	12	14	3	85.8
	Bangor, ME	35.5%	4.3%	29.3%	69.1%	10	7	28	4	85.9
	Youngstown, OH	35.9%	6.1%	27.2%	69.3%	18	14	4	5	86.2
	Atlanta, GA	32.8%	6.8%	30.2%	69.7%	2	23	38	6	86.8
	Cincinnati, OH	35.8%	6.2%	28.9%	70.9%	16	15	22	7	88.2
	Madison, WI	35.4%	5.0%	30.7%	71.1%	9	8	44	8	88.5
	Saginaw, MI	35.7%	6.4%	29.0%	71.2%	15	19	23	9	88.6
	Indianapolis, IN	35.6%	7.6%	28.5%	71.7%	14	38	17	10	89.2
	Fargo, ND	37.9%	6.4%	27.5%	71.8%	35	16	6	11	89.3
	Orlando, FL	36.6%	6.9%	28.3%	71.8%	23	24	15	11	89.3
	Tampa, FL	36.6%	7.3%	28.1%	72.0%	23	30	11	13	89.6
	Billings, MT	38.9%	0.9%	32.5%	72.3%	48	1	55	14	90.0
	Cleveland, OH	35.9%	7.3%	29.4%	72.6%	17	31	31	15	90.4
	Detroit, MI	35.6%	6.7%	30.4%	72.7%	11	22	42	16	90.5
	Cedar Rapids, IA	35.6%	7.7%	29.6%	72.9%	11	39	33	17	90.7
	Lexington, KY	40.2%	5.2%	27.7%	73.1%	60	9	8	18	90.9
	Albuquerque, NM	34.0%	9.7%	29.6%	73.3%	3	63	33	19	91.2
	Miami, FL	36.6%	7.4%	29.4%	73.4%	23	33	30	20	91.4
	Wichita, KS	39.1%	6.6%	28.1%	73.8%	51	21	13	21	91.9
	Oklahoma City, OK	37.4%	8.0%	28.7%	74.1%	27	44	20	22	92.2
	Gulfport-Biloxi, MS	37.9%	9.6%	26.9%	74.3%	33	60	3	23	92.5
	Austin, TX	36.4%	9.1%	29.3%	74.8%	20	56	26	25	93.1
	Beaumont, TX	36.4%	9.3%	29.1%	74.8%	19	58	25	26	93.1
	Mobile, AL	37.6%	9.6%	27.7%	74.9%	29	61	9	27	93.2
	Little Rock, AR	38.1%	8.1%	28.8%	75.0%	36	46	21	28	93.3
	Spokane, WA	34.6%	9.1%	31.2%	75.0%	4	56	47	28	93.3
	Wilmington, DE	40.2%	2.8%	32.0%	75.0%	59	5	51	30	93.3
	Manchester, NH	40.1%	2.8%	32.2%	75.1%	58	6	53	31	93.4
	Salt Lake City, UT	37.8%	7.1%	30.3%	75.2%	32	27	39	32	93.6
	Montgomery, AL	37.6%	9.6%	28.1%	75.3%	29	61	11	33	93.7

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
CORPORATE SERVICES										
US	Dallas-Fort Worth, TX	36.4%	9.4%	29.7%	75.5%	21	59	36	34	94.0
	Baltimore, MD	37.7%	7.5%	30.4%	75.6%	31	36	42	35	94.0
	Burlington, VT	38.3%	6.9%	30.4%	75.6%	38	25	41	36	94.1
	Phoenix, AZ	38.4%	8.6%	28.5%	75.6%	46	53	19	37	94.1
	Raleigh, NC	38.8%	6.9%	30.0%	75.7%	47	25	37	38	94.2
	Jackson, MS	37.9%	10.0%	27.9%	75.8%	33	64	10	39	94.3
	Houston, TX	36.5%	9.1%	30.3%	75.9%	22	55	39	40	94.4
	Shreveport, LA	38.3%	11.1%	26.6%	76.0%	42	69	2	41	94.5
	Baton Rouge, LA	38.3%	10.5%	27.3%	76.1%	42	67	5	42	94.7
	Denver, CO	37.6%	7.9%	30.7%	76.2%	28	42	44	43	94.8
	Salem, OR	39.5%	1.1%	35.6%	76.2%	54	3	67	44	94.8
	Buffalo, NY	39.2%	8.1%	29.0%	76.3%	52	46	24	45	95.0
	Pittsburgh, PA	41.1%	6.1%	29.4%	76.6%	68	12	31	46	95.3
	Minneapolis, MN	35.6%	6.0%	35.2%	76.7%	13	11	65	47	95.4
	Champaign-Urbana, IL	39.9%	7.6%	29.6%	77.1%	56	37	35	48	95.9
	Nashville, TN	38.3%	10.3%	28.5%	77.1%	38	65	18	49	96.0
	Boise, ID	38.3%	6.4%	32.7%	77.3%	37	16	57	50	96.2
	New Orleans, LA	38.3%	10.4%	29.3%	78.0%	42	66	26	51	97.1
	North Virginia, Metro DC, VA	38.3%	8.2%	31.5%	78.0%	38	49	49	52	97.1
	St. Louis, MO	38.4%	9.0%	30.9%	78.3%	45	54	46	53	97.4
	Riverside-San Bernardino, CA	40.4%	7.4%	31.3%	79.2%	61	33	48	54	98.5
	Portland, OR	41.2%	1.3%	36.8%	79.3%	69	4	69	55	98.7
	Anchorage, AK	40.7%	1.0%	37.8%	79.5%	67	2	71	56	99.0
	Providence, RI	39.3%	7.9%	32.6%	79.7%	53	42	56	57	99.2
	Sacramento, CA	40.4%	7.4%	32.0%	79.8%	61	33	50	58	99.3
	Las Vegas, NV	34.6%	11.6%	33.7%	79.9%	4	70	62	59	99.4
	Seattle, WA	34.6%	10.7%	34.7%	80.0%	4	68	64	60	99.5
	Boston, MA	39.8%	7.3%	33.0%	80.0%	55	29	58	61	99.5
	San Diego, CA	40.4%	7.7%	32.2%	80.3%	61	39	53	62	99.9
	Chicago, IL	39.9%	7.2%	33.2%	80.3%	56	28	60	63	100.0
	Spartanburg, SC	37.3%	7.8%	29.3%	74.4%	26	41	29	24	100.0
	Charleston, WV	38.9%	14.0%	27.6%	80.5%	48	71	7	64	100.2
	Hartford, CT	39.0%	8.3%	33.7%	81.1%	50	50	63	65	100.9
	Honolulu, HI	38.3%	5.7%	37.6%	81.6%	38	10	70	66	101.5
	Los Angeles, CA	40.4%	8.4%	33.0%	81.8%	61	52	58	67	101.8
	Philadelphia, PA	43.5%	6.4%	32.0%	81.9%	71	18	51	68	102.0
	Trenton, NJ	40.4%	6.5%	36.6%	83.5%	61	20	68	69	103.9
	New York City, NY	42.3%	8.1%	33.5%	83.9%	70	46	61	70	104.4
	San Francisco, CA	40.4%	8.3%	35.2%	83.9%	61	50	65	70	104.4

Detailed results by city – Manufacturing

The following table details the overall results for all 113 cities. Within each country, cities are sorted in order of ascending TTI. Rankings are relative to other cities within the same country.

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
MANUFACTURING										
Australia	Brisbane	24.4%	5.1%	40.6%	70.1%	3	1	2	1	115.9
	Melbourne	24.4%	5.9%	41.2%	71.5%	2	3	3	2	118.1
	Adelaide	24.6%	9.5%	38.4%	72.4%	4	4	1	3	119.7
	Sydney	24.4%	5.8%	42.8%	73.0%	1	2	4	4	120.6
Brazil	Belo Horizonte	34.1%	6.4%	27.0%	67.5%	1	1	1	1	111.5
	São Paulo	34.2%	6.6%	30.9%	71.7%	2	2	2	2	118.5
Canada	Edmonton, AB	12.5%	4.1%	12.4%	29.0%	12	1	2	1	47.9
	St. John's, NL	2.3%	11.1%	16.2%	29.6%	1	9	11	2	48.9
	Charlottetown, PE	10.7%	7.0%	12.6%	30.3%	9	2	6	3	50.1
	Saskatoon, SK	7.5%	10.4%	12.5%	30.4%	6	7	5	4	50.2
	Vancouver, BC	12.5%	7.1%	12.5%	32.1%	11	3	4	5	53.0
	Calgary, AB	12.4%	8.4%	12.5%	33.2%	10	4	3	6	54.9
	Moncton, NB	7.0%	13.0%	13.2%	33.2%	5	14	8	7	54.9
	Fredericton, NB	6.9%	13.4%	13.4%	33.7%	4	15	9	8	55.7
	Trois-Rivieres, QC	4.1%	10.1%	22.2%	36.3%	2	5	14	9	60.1
	Prince George, BC	12.5%	11.5%	12.4%	36.4%	13	10	1	10	60.2
	Winnipeg, MB	4.6%	16.5%	15.8%	37.0%	3	16	10	11	61.1
	Halifax, NS	12.8%	12.4%	12.8%	38.0%	14	13	7	12	62.8
	Toronto, ON	13.2%	10.1%	16.9%	40.2%	15	6	13	13	66.5
	Windsor-Essex, ON	13.3%	11.0%	16.7%	40.9%	16	8	12	14	67.6
	Quebec City, QC	9.6%	12.3%	22.2%	44.2%	8	12	15	15	73.0
	Montreal, QC	9.5%	12.0%	22.7%	44.3%	7	11	16	16	73.1
China	Chengdu	16.1%	3.6%	6.7%	26.4%	2	1	1	1	43.6
	Shanghai	15.9%	5.7%	13.9%	35.5%	1	2	2	2	58.7
France	Marseille	21.2%	11.9%	67.0%	100.1%	2	2	1	1	165.3
	Paris	20.5%	11.0%	74.8%	106.3%	1	1	2	2	175.7
Germany	Berlin	27.6%	8.9%	34.2%	70.8%	1	2	1	1	117.0
	Frankfurt	29.4%	6.8%	38.0%	74.3%	2	1	2	2	122.7
India	Chennai	25.3%	0.8%	1.5%	27.5%	2	1	1	1	45.5
	Mumbai	25.2%	5.3%	1.7%	32.2%	1	2	2	2	53.2
Italy	Milan	33.7%	1.2%	44.4%	79.2%	1	1	2	1	130.9
	Rome	36.4%	1.3%	43.7%	81.4%	2	2	1	2	134.4
Japan	Osaka	30.0%	24.9%	32.5%	87.4%	2	1	1	1	144.3
	Tokyo	30.0%	38.8%	35.2%	104.0%	1	2	2	2	171.9
Mexico	Monterrey	26.8%	1.3%	7.8%	36.0%	1	1	1	1	59.4
	Mexico City	26.9%	1.7%	8.1%	36.7%	2	2	2	2	60.6

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					MANUFACTURING					
Netherlands	Amsterdam	20.2%	1.4%	24.6%	46.3%	1	1	1	1	76.4
	Rotterdam	20.2%	1.9%	24.6%	46.7%	1	2	1	2	77.1
Russia	Saint Petersburg	16.3%	15.1%	13.4%	44.7%	1	1	1	1	73.9
	Moscow	17.6%	15.3%	16.3%	49.2%	2	2	2	2	81.2
UK	Manchester	17.2%	9.6%	13.6%	40.3%	2	1	1	1	66.7
	London	16.6%	16.5%	16.6%	49.7%	1	2	2	2	82.2
US	Omaha, NE	18.8%	6.2%	16.7%	41.7%	4	9	33	1	69.0
	Baton Rouge, LA	18.7%	7.8%	15.2%	41.8%	3	13	14	2	69.0
	New Orleans, LA	18.2%	8.4%	16.5%	43.1%	2	19	25	3	71.2
	Shreveport, LA	17.8%	12.6%	14.6%	45.0%	1	36	3	4	74.3
	Youngstown, OH	25.0%	5.0%	15.1%	45.1%	33	3	12	5	74.5
	Cincinnati, OH	25.2%	5.6%	15.5%	46.4%	35	6	16	6	76.6
	Baltimore, MD	24.4%	5.2%	17.7%	47.3%	12	4	46	7	78.1
	Lexington, KY	26.7%	5.5%	15.2%	47.5%	55	5	13	8	78.4
	Bangor, ME	26.9%	4.9%	16.5%	48.3%	57	2	26	9	79.7
	Wilmington, DE	25.8%	4.3%	18.2%	48.3%	50	1	54	10	79.8
	Montgomery, AL	24.5%	8.3%	15.6%	48.4%	22	15	17	11	80.0
	Raleigh, NC	25.5%	6.8%	16.5%	48.9%	42	10	28	12	80.7
	Cleveland, OH	25.5%	8.4%	15.9%	49.7%	41	17	21	13	82.2
	Cedar Rapids, IA	24.0%	9.6%	16.6%	50.2%	8	28	29	14	82.9
	Wichita, KS	27.9%	6.2%	16.3%	50.4%	61	8	22	15	83.2
	Pittsburgh, PA	25.0%	9.2%	16.9%	51.0%	32	25	36	16	84.2
	Providence, RI	25.1%	7.1%	18.8%	51.0%	34	11	59	17	84.3
	Philadelphia, PA	24.9%	8.4%	18.2%	51.5%	31	18	55	18	85.1
	Indianapolis, IN	25.6%	11.3%	14.7%	51.6%	46	29	4	19	85.2
	Buffalo, NY	24.5%	11.5%	15.9%	51.9%	20	31	20	20	85.8
	Champaign-Urbana, IL	27.6%	7.3%	17.5%	52.4%	59	12	44	21	86.6
	Madison, WI	28.5%	6.1%	17.9%	52.5%	63	7	50	22	86.8
	Cheyenne, WY	24.6%	12.7%	15.7%	53.0%	26	38	19	23	87.5
	Mobile, AL	24.5%	12.9%	15.7%	53.1%	20	40	18	24	87.7
	Nashville, TN	25.6%	9.1%	18.5%	53.1%	44	23	58	25	87.8
	Little Rock, AR	25.8%	12.3%	15.1%	53.2%	49	35	11	26	87.9
	Hartford, CT	24.4%	8.8%	20.2%	53.3%	11	20	66	27	88.0
	Trenton, NJ	24.4%	8.4%	20.6%	53.4%	14	16	67	28	88.2
	Saginaw, MI	24.4%	12.0%	17.2%	53.6%	16	34	41	29	88.5
	Boston, MA	26.8%	9.3%	17.5%	53.6%	56	27	43	30	88.6
	Sioux Falls, SD	24.6%	14.5%	14.6%	53.7%	23	44	2	31	88.7
	Spokane, WA	24.5%	11.6%	17.8%	53.8%	18	32	49	32	88.9
	North Virginia, Metro DC, VA	24.4%	12.8%	16.7%	53.9%	17	39	31	33	89.0
	Minneapolis, MN	23.7%	9.2%	21.0%	53.9%	7	26	68	34	89.0

Country	City	Effective Tax Rates				Ranks				TTI
		CIT	OCT	SLC	TETR	CIT	OCT	SLC	TETR	
					MANUFACTURING					
US	Atlanta, GA	22.7%	14.6%	17.0%	54.3%	5	45	38	35	89.7
	Seattle, WA	24.3%	11.4%	19.1%	54.9%	9	30	60	36	90.7
	Manchester, NH	28.8%	8.2%	18.3%	55.3%	68	14	57	37	91.4
	Orlando, FL	25.4%	15.3%	15.1%	55.9%	39	49	10	38	92.3
	Chicago, IL	27.5%	9.0%	19.5%	55.9%	58	22	63	39	92.4
	Burlington, VT	25.4%	12.6%	18.0%	56.0%	37	37	52	40	92.5
	Fargo, ND	26.3%	14.9%	15.1%	56.2%	53	47	8	41	92.9
	Billings, MT	27.8%	8.9%	19.9%	56.6%	60	21	64	42	93.5
	Boise, ID	26.2%	13.0%	17.7%	56.9%	52	41	47	43	94.1
	Austin, TX	24.7%	15.8%	16.4%	56.9%	30	52	24	44	94.1
	Tampa, FL	25.4%	16.5%	15.0%	57.0%	40	54	7	45	94.1
	Oklahoma City, OK	25.3%	13.6%	18.3%	57.2%	36	42	56	46	94.5
	Denver, CO	26.7%	13.7%	16.9%	57.3%	54	43	37	47	94.6
	Salem, OR	28.3%	9.1%	20.1%	57.4%	62	24	65	48	94.9
	Salt Lake City, UT	25.6%	16.0%	16.5%	58.1%	43	53	27	49	96.0
	Miami, FL	25.4%	17.4%	15.5%	58.3%	38	57	15	50	96.4
	Gulfport-Biloxi, MS	25.7%	18.2%	14.4%	58.3%	48	61	1	51	96.4
	Beaumont, TX	24.7%	17.2%	16.7%	58.6%	29	56	32	52	96.8
	Detroit, MI	24.4%	16.7%	17.9%	59.0%	13	55	51	53	97.6
	Houston, TX	24.7%	18.3%	17.1%	60.1%	27	62	39	54	99.3
	Dallas-Fort Worth, TX	24.7%	18.9%	16.8%	60.4%	28	65	35	55	99.7
	Charleston, WV	24.6%	20.9%	15.0%	60.5%	25	66	6	56	99.9
	Spartanburg, SC	24.5%	23.2%	16.6%	64.3%	18	69	30	65	100.0
	Phoenix, AZ	24.6%	21.4%	14.8%	60.8%	24	68	5	57	100.4
	Sacramento, CA	28.8%	14.9%	17.3%	61.0%	66	48	42	58	100.8
	New York City, NY	24.4%	18.6%	18.1%	61.0%	10	64	53	59	100.8
	Las Vegas, NV	24.4%	17.6%	19.3%	61.3%	15	58	62	60	101.3
	Riverside-San Bernardino, CA	28.9%	15.7%	16.8%	61.4%	69	51	34	61	101.4
	San Diego, CA	28.8%	15.6%	17.2%	61.6%	67	50	40	62	101.8
	Portland, OR	29.0%	11.8%	21.0%	61.8%	71	33	69	63	102.2
	Albuquerque, NM	23.3%	24.5%	16.3%	64.1%	6	71	23	64	106.0
	Jackson, MS	25.7%	23.9%	15.1%	64.6%	47	70	9	66	106.8
	Los Angeles, CA	28.8%	18.4%	17.6%	64.8%	65	63	45	67	107.0
	St. Louis, MO	25.9%	21.1%	17.7%	64.8%	51	67	48	68	107.0
	Anchorage, AK	29.0%	14.8%	21.0%	64.9%	70	46	70	69	107.2
	Honolulu, HI	25.6%	18.2%	21.1%	65.0%	45	60	71	70	107.4
	San Francisco, CA	28.6%	17.9%	19.2%	65.6%	64	59	61	71	108.4

Appendix B – 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 labor costs (that is, statutory plan costs and other wage-based taxes).

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 further in Chapter 3). Other taxes are also calculated according to specific local rules. Labor 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 *Competitive Alternatives 2012* comparison of international business costs.

The calculated total tax costs are compared between countries and cities using a Total Tax Index (TTI) for each location. The TTI is a measure of the total taxes paid by corporations in a particular location, calculated as a percentage of total taxes paid by corporations in the US using the following formula:

$$\frac{\textit{Total taxes paid by corporations in this location and industry}}{\textit{Total taxes paid by similar corporations in the US}}$$

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 an index of taxes actually paid. This measure is the Total Effective Tax Rate (TETR), which is calculated as follows.

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

In the TETR formula, the denominator is a fixed dollar amount for each business operation in all locations—standardized net income before income taxes. This allows income taxes paid to be compared in absolute dollar terms using the TTI. As explained in Chapter 3, 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 statutory labor costs. This formula produces the TETR, which allows other corporate taxes and statutory labor costs (which are not calculated based on income) to be compared in percentage terms. Rankings obtained using the TETR are the same as those obtained using the TTI.

Using the formula for TETR, it is possible for it to exceed 100 percent—sometimes by a wide margin. As the table on the following page 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 France, total tax costs are US$2.90 million per year as compared to net income before income tax of US$2.64 million, for a TETR of 109.9 percent. However, the company's net profit after tax is still US$2.25M. This table also illustrates the calculation of the TTI, with total tax costs in the United States ($1.62 million) being indexed to 100.0, and total tax costs in France (US$2.90 million) being 79.7 percent higher, resulting in a TTI of 179.7.

Interpretation of results

Our analysis is based on cost information collected primarily between July 2011 and January 2012. Taxes reflect tax rates in effect on January 1, 2012, and also incorporate any announced changes at that time to take effect at specified later dates. Tax rates and other tax-related information are also subject to further change as a result of new legislation, judicial decisions, and administrative pronouncements. Of course, exchange rates and other cost factors will change over time.

Additional background

Competitive Alternatives represents KPMG's guide to comparing business locations in mature and high growth markets. With a primary focus on international business costs, the *Competitive Alternatives* report measures the combined impact of 26 significant cost components that are most likely to vary by location, as applied to specific industries and business operations. The *Competitive Alternatives* report also includes secondary comparisons of other factors that influence the competitiveness of international business locations.

The 6-month research program for *Competitive Alternatives* (July 2011 to January 2012) covered 133 cities in the same 14 countries as this report. More than 2,500 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 startup and operation for representative business operations in 19 industries over a 10-year planning

horizon. National results are based on the combined results for two major business centers in each country (or, for the United States, the four largest business centers).

This Focus On Tax study complements the main *Competitive Alternatives* report and expands on the coverage of taxation issues in that study. This study shares much of the same methodology, modeling assumptions, and data sources developed for *Competitive Alternatives 2012*. Further information on study methodology and scope, including key modeling assumptions, can be found in Chapter 1 of the *Competitive Alternatives 2012* study report.

Full details of the specific tax rates applied for corporate income tax and other corporate taxes in each jurisdiction can be found in Appendix B of the *Competitive Alternatives 2012* Volume II study report. 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 D of the *Competitive Alternatives 2012* Volume II study report, available from the study web site: www.CompetitiveAlternatives.com.

Example Calculation of Total Tax Index and Total Effective Tax Rate Based on Overall Average results[1]		**USD$'000 per annum**	
		France	**United States**
Total revenue[2]		14,906	15,827
All non-tax operating expenses		9,749	12,309
Statutory labour costs	SLC	2,184	534
Other corporate taxes	OCT	330	341
Net income before income tax (stadardized)[3]	NIBT	2,643	2,643
Corporate income taxes	CIT	389	741
Net profit after tax		2,254	1,902
Total tax cost	TTC=SLC+OCT+CIT	2,904	1,616
Total Tax Index	**$TTI=TTC_X/TTC_{US}$ x 100**	**179.7**	**100.0**
Effective rates for:			
Corporate income taxes (net of incentives)	=CIT/NIBT	14.7%	28.1%
Other corporate taxes	=OCT/NIBT	12.5%	12.9%
Statutory labor costs	=SLC/NIBT	82.6%	20.2%
Total Effective Tax Rate	**TETR=TTC/NIBT**	**109.9%**	**61.1%**

1. Average of 19 business operations (manufacturing and non-manufacturing).
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.

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These documents are available from www.CompetitiveAlternatives.com/download