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By

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About IMFG

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More Tax Sources for Canada's Largest Cities: Why, What, and How?

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Abstract

Canadian cities have long called for access to more tax revenues. This paper argues that additional taxes are appropriate for major cities, describes the advantages and disadvantages of potential new taxes, and estimates the revenue from a city income tax, a city sales tax, and a city fuel tax for eight Canadian cities – Vancouver, Calgary, Edmonton, Winnipeg, Toronto, Ottawa, Montréal, and Halifax. The authors find that the property tax is a good tax, but cities would benefit from a mix of taxes. In particular, user fees are an important source of revenue and can alter economic behaviour. Taxes on income, sales, vehicle registration, fuel, and hotel stays are also an effective way to diversify local taxes. Of the available options, a personal income tax and a municipal sales tax are likely to generate the largest revenues. Although setting up their own tax systems would grant cities the greatest fiscal autonomy, doing so would be costly. It would be more cost-effective for cities to piggyback new taxes onto provincial taxes, with the province collecting the revenue and remitting it to cities. To promote local accountability, however, it is essential that local governments set their own tax rates. In this way, taxes levied would be linked to services consumed.

Keywords: municipal finance, local taxes, fiscal autonomy

JEL codes: H71, H77

More Tax Sources for Canada's Largest Cities: Why, What, and How?

Large Canadian cities need access to more tax revenues, like their U.S. and European counterparts, if they are to meet their growing expenditure requirements. The range of services for which cities are responsible – from water, sewers, roads, and transit to social services and public health (see Table 1) – has led many to suggest that the property tax cannot meet these challenges, nor is it the most appropriate tax for funding certain services (see, for example, Slack, 2011). A growing number of cities are also looking to the federal and provincial governments to share some revenues.

Are some tax sources better than others for cities? How do we decide? This paper provides a framework for analysing taxes that are appropriate for large cities and evaluates the advantages and disadvantages of each.¹ We also estimate the revenue that could be generated in eight Canadian cities (Vancouver, Calgary, Edmonton, Winnipeg, Ottawa, Toronto, Montréal, and Halifax) from a city income tax, a city sales tax, and a city fuel tax (we cannot provide revenue estimates for the other tax possibilities because of data limitations). We conclude that Canadian cities could benefit from a mix of taxes and of these taxes, a personal income and a municipal sales tax are likely to generate the largest revenues.²

The paper focuses on big cities in Canada. Smaller, rural, and remote communities would not generate sufficient revenues from an income tax, sales tax, or fuel tax – the tax base is simply too small. These municipalities may have to rely more heavily on provincial transfers compared with their larger counterparts. Moreover, small communities close to each other would have difficulty levying a higher tax rate than their neighbours, because residents could simply cross municipal borders to live or shop. For this reason, the appropriate tax base for new taxes is at the metropolitan or regional level.

Provincial governments in Canada rely heavily on income and sales taxes, while local governments depend on the property tax as the major source of tax revenue. Any new taxes at the local level would require provincial approval and the provinces would likely want a good reason for granting this authority. One argument might be that by allowing cities to raise more taxes on their own, the provinces could shed responsibility for some provincial-municipal transfers to large cities and focus on the smaller municipalities. In the Ontario context, it has been argued that the provincial-municipal relationship is at an inflection point because of three trends – growing recognition of the important role of cities to

1. The focus of this paper is on revenue generation and not on service delivery.

2. This paper does not delve into how to pay for municipal infrastructure, but rather the services provided by the infrastructure. For a discussion of how to pay for roads and transit infrastructure, see Kitchen and Lindsey (2013).

Table 1: Major services funded by cities

<p>Protection: Police Fire Emergency planning</p> <p>Roads: Local roads Sidewalks Streetlights Parking</p> <p>Public transit</p> <p>Environment: Water supply and distribution Sewage collection and treatment Solid waste management</p> <p>Municipal government administration</p>	<p>Health: Preventive care or public health Ambulance service*</p> <p>Social Services: Welfare assistance* Day care services* Children's assistance* Homes for the aged* Social housing*</p> <p>Recreation and culture: Community parks and recreation programs Local libraries Community centres, theatres, auditoriums Convention facilities</p> <p>Planning and development: Local planning, zoning, severances, approvals Local economic development</p>
<p>* Shared funding responsibility with the province in Ontario; mainly a provincial responsibility in other provinces.</p>	

the economy, the increasing complexity of the provincial-municipal relationship, and the emergence of threats to the fiscal health of municipalities (Fenn and Côté, 2014). These factors, combined with a period of fiscal constraint at the provincial level, may serve as catalysts for reform.

I. Decisions on public spending should be linked to revenue decisions

For the public sector to operate efficiently, it is important to establish a clear link between expenditure and revenue decisions – to strengthen what Breton (1996) calls the Wicksellian connection.³ The “benefit principle” is the link between taxation and spending; it is required to achieve the goals of fiscal decentralization, charging for public services, and earmarking revenues to specific services, all of which are central to a sound local finance system (Bird and Slack, 2014). Expenditure responsibilities must be matched with revenue resources, revenue capacities matched with political accountability, and benefit areas matched with financing areas. Services provided by the public sector are then “sold” to those who receive them and the revenues yielded by such sales are sufficient to pay for the

3. For more on the Wicksellian connection in financing local public services, see Bird and Slack (2014) and Slack and Bird (2015).

cost of providing the service. In effect, this approach treats local governments as “firms” that produce and sell services to their customers.

Figure 1 illustrates the financing tools appropriate for different services.⁴ For those with “private good” characteristics (such as water, sewers, garbage collection and disposal, transit, and most recreation), user fees are efficient and fair. In general, user fees should be adopted wherever there is a clear link between the fee charged and the benefit received. When this link is in place, the taxpayer can choose the amount of the good he or she wishes to consume. Equity concerns can be addressed either by targeting lower-income individuals with existing provincial income-transfer programs or by lowering or waiving fees for low-income users.

Services with “public good” characteristics (for example, police and fire protection, neighbourhood parks, local streets, and street lighting) generate collective benefits that are enjoyed by all local residents. Benefits from these services cannot be assigned to individual beneficiaries and therefore, specific charges cannot be levied. In lieu of charges, then, some form of local benefit-based taxation such as the property tax should be adopted. This type of tax permits individuals to express a collective demand for services. In this respect, the property tax is considered to be a generalized, or non-specific, user charge (Kneebone and McKenzie, 2003). A city sales tax and personal income tax could also be used to pay for services with public good characteristics.

For other services, the benefits (or costs) may spill over municipal boundaries, but local provision is still desirable. Positive spillovers (externalities) occur if residents of neighbouring jurisdictions receive a service for free or at less than the cost of providing the service. For example, roads constructed in one jurisdiction may be used by residents of another jurisdiction without any charge to the latter. The result is an under-allocation of resources for that service, because the providing municipality bases its expenditure decisions on the benefits captured within its jurisdiction alone and does not take account of the benefits to those outside the jurisdiction. One way to provide an incentive to the municipality to allocate more resources to the service generating the externality is a transfer from the provincial government.⁵

Services that redistribute income should be funded from income tax revenues because it is the most progressive tax available. For cities, these services include social assistance and social housing.





2. The property tax is a good tax for cities, but a mix of taxes would be preferable

The property tax satisfies many characteristics of a fiscally sound local tax (see Box 1). Its base is largely immobile – the residential portion cannot be exported

4. This categorization first appeared in Slack (2009).

5. Other ways to internalize externalities would be to have the service provided at a metropolitan or regional level or by the province.

Figure 1: Different Financing Tools for Different Services

<p>Private Water Sewers Garbage Transit</p>  <p>User Fees</p>	<p>Public Police Fire Local parks Streetslights</p>  <p>Property Tax Sales Tax</p>	<p>Redistributive Social assistance Social housing</p>  <p>Income Tax</p>	<p>Spillovers Roads/transit Culture Social assistance</p>  <p>Transfers</p>
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Box 1: How do we know if a tax is a good tax for local government?

A good local tax has the following characteristics:

- **Fairness:** the tax is perceived to be fair in terms of the benefits beneficiaries receive from local public services
- **Immobile tax base:** if the tax base can't move, the tax will be borne by local residents and not passed on to people living in other jurisdictions
- **No harmful competition:** the tax does not result in harmful competition between local governments or local governments and senior levels of government
- **Sufficient, stable, and predictable revenues:** the tax generates revenues local governments can count on
- **Visible, transparent, and accountable:** taxpayers understand the tax, so they can hold governments accountable
- **Ease of administration:** the tax is easy to administer locally

(Bird and Slack, 2004; Bird and Bahl, 2008)

to taxpayers in other jurisdictions – and therefore, relatively efficient because distortions in economic behaviour are minimized.⁶ It is at least partly effective in funding services for which the collective benefits accrue to the local community; hence, it satisfies the fairness criterion based on benefits received. Revenues are relatively stable and predictable. It is highly visible, so it makes local governments accountable for the tax levied.

A potential downside of a local property tax is that it may be more expensive to administer than other local taxes (income, sales, fuel, for example) that can be piggybacked onto existing provincial taxes. This cost may be a small price to

6. The same is not true of the non-residential property tax, however, which can be exported to other jurisdictions. For a discussion of the economic impact of non-residential property taxes in Ontario, see Smart (2012).

Box 2: Is the land transfer tax a good tax?

A municipal land transfer tax (MLTT) is levied by the City of Toronto as well as some municipalities in Nova Scotia, Quebec, and Manitoba (Kitchen, 2016).⁷ Although the tax can generate substantial revenues, it is not considered to be a good local tax. In particular, it:

- bears no relationship to the benefits received from local services (Clayton, 2015)
- imposes a burden on those who buy property while placing no direct burden on those who remain in their existing property
- provides an incentive for those who remain in their homes to demand additional municipal services, knowing that homebuyers will disproportionately pay for city services
- provides a disincentive for people to move, thereby resulting in potential inflexibilities in the labour market and encouraging people to stay in properties of a size and location that they might not otherwise have chosen

Two empirical studies on housing prices and household mobility in Toronto concluded that sales of single-family homes in the city fell by 16 percent after the implementation of the MLTT with the most pronounced effect in areas with relatively low sales values. One study also concluded that homeowners chose to renovate rather than relocate because of the tax (Dachis, 2012; Dachis, Duranton, and Turner, 2008). It was also estimated that the MLTT resulted in reduced household mobility: about 3,500 families that would have moved did not do so because of the tax (Dachis, Duranton, and Turner, 2008). These reduced transactions have led one study to conclude that revenue generated by the MLTT is far less than the economic cost in terms of the billions of dollars of economic activity and thousands of jobs lost in the city since its inception (Altus Group Economic Consulting, 2014). Another study suggested, however, that the decline in housing sales in Toronto in 2008 can also be attributed to macro-economic factors and market regulations (Haider, Anwar, and Holmes, forthcoming). Other studies have recommended that the MLTT be eliminated and replaced with an equivalent increase in the municipal property tax (Clayton, 2015; Dachis, 2012).

pay, however, if local governments are to have autonomy and flexibility in setting tax policy – important ingredients of responsible, efficient, and accountable local governments (Bird, 2011).

Recent evidence suggests that the property tax may be enough to fund municipal services. In particular, a study of Alberta municipalities found that the property tax is the only tax that municipalities need (McMillan and Dahlby, 2014). Furthermore, if the education portion of the property tax were eliminated, cities would have more than enough tax room to finance their services now and well into the future. A study of the City of Toronto's finances noted that property tax revenues have grown more slowly than inflation since 2000 and that

7. Toronto's municipal land transfer tax rate is 0.5 per cent on homes valued from \$0 to \$55,000; 1.0 per cent on homes valued from \$55,000 to \$400,000; and 2.0 per cent on homes in excess of \$400,000. Although municipalities in Manitoba are permitted to levy a land transfer tax, none actually do.

the tax burden per household has fallen over this time (Slack and Côté, 2014). Furthermore, a study of the Greater Toronto Area concluded that there is room to increase residential property taxes in most municipalities in the region (Tassonyi, Bird, and Slack, 2015). The real question, however, is not whether the property tax is *adequate*, but whether it is the *best* tax for funding all city services.

Although the property tax is a good tax for local governments, it is relatively inelastic (it does not grow automatically as the economy grows), highly visible, and politically contentious. It may therefore be insufficient to fund the complex and increasing demands on local governments. Moreover, policymakers are concerned about the impact of the property tax on taxpayers who are asset-rich but income-poor, such as the elderly on fixed incomes. Although many jurisdictions have tax deferral programs to address this problem to some extent, an income tax as part of the municipal tax mix could reduce the overall tax burden on low-income taxpayers by taking pressure off the property tax.

A mix of taxes would give cities more flexibility to respond to local conditions such as changes in the economy, evolving demographics and expenditure needs, changes in the political climate, and other factors.⁸ For example, elected local politicians might choose to levy sales taxes for local services that are enjoyed by commuters and visitors.⁹ An employee-based personal income tax (often referred to as a payroll tax) would tax commuters. Property taxes might be chosen where there is a need for a more stable revenue source. A portfolio of taxes would also allow cities to increase or stabilize revenue while maintaining equity (Bahl, 2010; Kitchen, 2016; Slack, 2011).

Finally, a single tax such as the property tax almost always creates local distortions, some of which may be offset by other taxes. For example, the property tax may discourage investment in housing.¹⁰ An income tax, on the other hand, may encourage investment in owner-occupied housing, because the imputed income of owner-occupied housing is not taxed in Canada. With a range of tax sources, distortions in one tax may be counteracted by distortions in other taxes.

Access to a portfolio of taxes would provide cities with stability (through the property tax) and elasticity (through income, sales, or business taxes). Moreover, relying on many sources means that a city can set lower tax rates for any single tax to levy a given amount of revenue. Since the burden of a tax increases with the tax

8. New taxes at the local level in Canada would require provincial approval and possibly new legislation.

9. U.S. evidence suggests that the cost of inner-city services used by people who live in the suburbs and commute to work exceeds, sometimes substantially, what they pay for inner-city services. Local income and consumption-based taxes could be used to alleviate this disparity. See Chernick (2002) and Chernick and Tkacheva (2002).

10. The property tax will also have an impact on decisions about where to live or work, where to locate a business, and other economic decisions.

rate (that is, the distortions increase as the tax rate increases),¹¹ a more diversified system should yield a given amount of revenue more efficiently with a smaller negative impact on the overall tax base (Chernick, Langley, and Reschovsky, 2010).¹²

Box 3: Tax sharing is not the same as local taxation

When city officials in Canada ask for access to more revenues (such as sales taxes), they are generally after a share of federal or provincial government tax revenues. This request amounts to a form of tax sharing; similar to what exists in Manitoba and Saskatchewan.¹³

Tax sharing is popular with municipal politicians, but it is not the same as local taxation. Tax sharing, whereby the federal or provincial government collects revenue from a tax and shares it with local governments, leads to little or no local autonomy, because the local government has no control over the tax rate or tax base. Tax sharing is virtually synonymous with intergovernmental transfers (Bird, 2011). It does not meet the criteria of autonomy, accountability, and transparency.

The most important element of fiscal autonomy is the ability of local governments to set their own tax rates. International experience tells us that the most responsible and accountable local governments are those that raise their own revenues from locally set tax rates (Bird, 2011). If local governments do not set the local tax rate, they will not have local autonomy or the accountability that comes with it.

Tax autonomy also leads to greater efficiency in providing public services, because voters who have the opportunity to affect decisions on tax levels are more aware of public service outcomes. Limited empirical research on the impact of tax autonomy suggests that it does increase the efficiency of municipal spending (Blöchliger and Pinero-Campos, 2011). Local tax rate setting also provides predictability for local governments and gives them the flexibility to change rates in response to changing circumstances.

Cities in many countries around the world rely on a mix of taxes to finance local expenditures. Table 2 shows the distribution of local tax revenues for 2013 in eight federal, one regional, and 25 unitary countries in the Organisation for Economic Co-operation and Development (OECD). Income taxes accounted for

11. For example, a residential property tax may discourage investment in housing improvements; a retail sales tax may discourage consumption of goods, etc. A mix of taxes can reduce the distortion of any one tax by keeping each tax rate low.

12. The authors also argue that greater revenue diversity means a more complex tax system that most people do not understand and thus results in less resistance to tax increases. Furthermore, greater revenue diversity may be associated with higher expenditure needs.

13. Through the Building Manitoba Fund, the province shares one-seventh of provincial sales tax revenues or 4.15 percent of provincial income tax plus 2 cents per litre of gasoline and 1 cent per litre of diesel fuel tax (whichever is greater) for infrastructure and transit costs. Most of this funding is conditional, provided through various grant programs targeting infrastructure such as roads and bridges, water and sewer infrastructure, recreation facilities, etc. In Saskatchewan, the province shares the equivalent of one percentage point of provincial sales tax revenue with municipalities. Other examples include the sharing of provincial fuel tax revenue in a few Canadian cities and regions and federal gas tax revenue with Canadian municipalities.

more than 50 percent of local tax revenue in 13 countries.¹⁴ Sales taxes are the most important local tax source in three countries and they provided 10 percent or more of local taxes in 12 countries. Although local governments in all the countries levy property taxes to some extent, these are the most important local revenue source in only 12 countries. They accounted for more than 10 per cent of local taxes in 30 countries, but more than 90 per cent of local taxes in only six countries (Australia, Canada, Greece, Israel, New Zealand, and the United Kingdom). The only countries with a balanced local revenue structure – in the sense that it is not dominated by one tax (that is, no tax accounts for 50 percent or more of total taxes) – are Italy, Korea, Portugal, and Spain.

No definitive conclusions can be drawn about patterns of local taxation across countries, but a few observations may be made. Local government access to a specific tax depends on factors such as the local government's capacity to administer the tax; the types of expenditures that local government must fund; the willingness of a senior level of government to assign taxes to local government; and constitutional and legislative requirements.

With a few exceptions, wherever local taxes are a comparatively high percentage of total tax revenue and GDP, local governments tend to rely more heavily on local income taxes. For example, the Nordic countries, where local taxes are generally more than 10 percent of GDP, rely heavily on income taxes, whereas property taxes are more important in countries that, in the past, were part of the British Commonwealth or significantly influenced by the British Empire and where local taxes are less than 3 percent of GDP. Local sales taxes are usually less important in federal countries than they are in unitary countries. This difference reflects the fact that in federal countries (as compared with unitary countries), the state/provincial/canton/regional level of government collects considerable sales tax revenue, making it less likely that this source of revenue is available to local governments.

The relative importance of local taxes in a country's overall tax system and as a percent of GDP is generally less in federal countries than in unitary countries – in federal countries, state, provincial, or regional governments collect some taxes that are the domain of local government in unitary countries.

3. User fees are an important source of revenue and can alter economic behaviour

Local governments should, wherever possible, charge directly for services. Appropriately designed user fees allow residents and businesses to know how much they are paying for the services they receive from local governments. When appropriate fees or prices are charged, governments make efficient decisions about how much of the service to provide and citizens can make efficient decisions about how much to consume.

¹⁴ Countries that have the highest degree of fiscal decentralization tend to rely more heavily on personal income taxes followed by property taxes (Brühlhart, Bucovetsky, and Schmidheiny, 2014).

Table 2: Relative importance of local taxes in selected OECD countries, 2013

Countries	Tax sources as a % of total local tax revenues				Local taxes as a % of GDP	Local taxes as a % of all taxes ⁵
	Income ¹	Sales ²	Property ³	Other ⁴		
Federal:						
Australia	0.0	0.0	100.0	0.0	0.9	3.4
Austria	63.9	9.1	14.8	12.2	1.3	3.2
Belgium	34.5	7.3	58.9	0.3	2.0	4.7
Canada	0.0	2.1	97.4	0.5	2.9	9.3
Germany	79.4	5.8	14.6	0.2	2.9	8.2
Mexico	0.0	3.2	75.3	21.5	0.3	1.2
Switzerland	84.9	1.5	13.6	0.0	4.2	15.2
United States	6.0	22.4	71.6	0.0	3.6	14.5
Regional country:						
Spain	18.4	34.4	42.0	5.1	3.3	9.9
Unitary:						
Chile	0.0	58.8	41.2	0.0	1.4	7.3
Czech Republic	0.0	44.1	55.9	0.0	0.4	1.3
Denmark	88.8	0.0	11.2	0.0	12.5	26.3
Estonia	91.4	1.4	7.2	0.0	4.2	13.3
Finland	93.3	0.0	6.6	0.1	10.2	23.4
France	0.1	24.0	51.9	24.2	5.8	12.9
Greece	0.0	3.7	96.4	0.0	2.0	5.6
Hungary	0.0	79.9	20.0	0.0	9.5	5.9
Iceland	81.9	1.1	17.0	0.0	0.9	26.6
Ireland	0.0	0.0	87.9	12.1	2.6	3.1
Israel	0.0	5.7	94.3	0.0	2.2	7.3
Italy	25.3	21.0	16.4	37.2	7.2	16.2
Japan	50.8	19.2	28.9	1.1	7.5	24.2
Korea	17.7	25.4	44.6	12.3	3.9	15.5
Luxembourg	90.9	1.5	7.5	0.2	1.3	3.5
Netherlands	0.0	46.9	53.1	0.0	0.8	3.7
New Zealand	0.0	9.5	90.5	0.0	2.1	6.7
Norway	87.7	1.3	10.9	0.0	5.4	13.1
Poland	57.0	4.7	33.8	4.5	4.1	12.9
Portugal	30.2	24.2	42.4	3.3	3.0	7.0
Slovak Republic	0.0	25.8	51.4	22.8	0.8	2.9
Slovenia	79.7	5.2	15.1	0.0	4.0	10.8
Sweden	97.4	0.0	2.6	0.0	15.8	36.9
Turkey	23.9	51.5	13.8	10.9	3.0	8.8
United Kingdom	0.0	0.0	99.3	0.7	1.6	4.9

1. Includes individual, corporate and payroll tax.

2. Includes general consumption taxes, value-added taxes, specific taxes on goods and services (fuel taxes, hotel and motel occupancy), and taxes on use of goods or on permission to use goods or perform activities.

3. Taxes on property, including recurring taxes on net wealth.

4. Includes a miscellaneous collection of local taxes.

5. Total includes central government, state government, local government, and social security funds.

Source: OECD, *Revenue Statistics 1965-2014* (Paris: OECD, 2015), from tables 77, 78, 84, 86, 87 and 88.

Under-pricing a service results in over-consumption. When users do not pay for a service or do not pay its full cost, they consume more than they would otherwise. The resulting demand signals that more of the under-priced service should be provided, often leading to more expensive infrastructure investment than is economically efficient or justified. For example, if water rates are not efficiently structured and do not encourage conservation, they may lead to over-use and over-investment in water infrastructure (Fenn and Kitchen, 2016).

Properly structured user fees send appropriate capital investment signals, while inefficiently structured fees or prices can induce over-investment where the service is under-priced – or under-investment where it is over-priced (Bazel and Mintz, 2014; Kitchen and Lindsey, 2013). Thus, proper pricing not only brings in revenues for cities, but also reduces pressure on municipal finances by reducing the apparent need to invest in under-priced infrastructure.

Economic efficiency dictates that prices or fees should equal the marginal cost of providing the goods or services; that is, where the price per unit of output equals the cost of the last unit consumed. Current practice in setting user fees, however, almost always deviates from the fair, efficient, and accountable (Fenn and Kitchen, 2016; Kitchen and Tassonyi, 2012). The tendency is to set fees to generate revenue rather than to allocate resources to their most efficient use.

Box 4: Are user fees regressive?

Municipal efforts to increase reliance on user fees are often criticized on the grounds that user fees are regressive. In reality, the opposite is often true – those who benefit most from under-priced services are often those who use them the most, and these beneficiaries are often in higher-income groups. By not charging the marginal cost of water, for example, those who are heavy consumers of water – for watering lawns, washing cars, filling swimming pools, and so on – are frequently in the higher-income groups. Relatively simple pricing systems, such as low initial “life-line” charges often deal with any perceived inequity from introducing more efficient pricing systems.

Transportation is an example of the need for more efficient pricing in Canadian cities. Motor vehicles occupy valuable space while moving and while parked. Yet neither road usage nor parking spaces are currently rationed with effective pricing structures. Without efficient prices, users cannot tell how much it actually costs to use an automobile and lack incentives to make efficient decisions about how often to use it, where to live and work, and so on. This lack of efficient pricing has been a primary cause of highway congestion, environmental degradation, lost productivity, and reduced economic activity in many large cities and urban areas in Canada (Kitchen and Lindsey, 2013). The following sections highlight important issues in pricing the use of roads and parking.

3.1 Road pricing

The fiscal and economic case for road pricing is solid, yet road pricing is often rejected by politicians and the public at large (LeBlanc and Perreux, 2014).¹⁵ Efficient road prices offer a number of advantages. They are widely recognized as an effective travel demand management tool for reducing congestion, pollution, and other external costs of driving. They can influence all dimensions of travel choice: trip frequency, destination, travel mode, time of day or week, route, and so on. To the extent that traffic demand is managed, cost pressures on city budgets are lowered, because traffic-related costs are reduced and infrastructure demands lowered. Furthermore, if revenues are dedicated to public transit and roads, there is almost certain to be more public acceptance of the tax than if the funds come from general revenues.

Many road pricing schemes are in place around the world, but only two are likely to be serious candidates for implementation in Canadian cities, and generally only in larger cities or metropolitan areas. Road pricing charges tend to be most effective if they are applied at a metropolitan or regional level where there is a greater likelihood of managing intermunicipal traffic and a greater opportunity to minimize distortions that often arise when taxes or charges are restricted to smaller geographic areas.

One pricing option is a network of High Occupancy Toll (HOT) lanes, used in some metropolitan areas in the U.S. and candidates for larger cities and metropolitan areas in Canada.¹⁶ A HOT lane is a variant of a High Occupancy Vehicle lane (HOV). Here, tolling is applied only to vehicles that are below a minimum occupancy requirement – typically two people (HOV2) or three people (HOV3). Tolls can be varied by time of day to maintain high speeds on the HOT lanes. The tolled infrastructure would be new, and it would offer drivers a choice of paying for a quicker trip or using existing toll-free lanes. HOT lanes could replace all or part of a province's HOV or planned HOV lanes. HOT lanes could also be constructed on some major municipal and arterial roads and highways that enter into or pass through large cities.

A second, larger-scale possibility is to toll major highways and even major arterial roads and highways that run into or through cities. Tolling is more common than HOT lanes in most countries where road pricing is used. Tolls may be set as a flat charge or may vary by time of day, as on Highway 407 in the Greater Toronto Area or the Autoroute 25 expressway in Montréal. Tolling all lanes at different rates is more efficient than tolling only some lanes, because it is easier to control the total number of vehicles using the road as well as the distribution of traffic across lanes on the road.

15. See Kitchen and Lindsey (2013) for more a more detailed discussion of road pricing. See also Althaus, Tedds, and McAvoy (2011) for a discussion of implementation issues.

16. The province of Ontario announced in December 2015 that it will be building 16.5 km of new HOT lanes in the western Greater Toronto Area in 2016.

Box 5: Road tolls can generate significant revenue

Several estimates have been made of the potential revenues from road tolls in the Greater Toronto and Hamilton Area (GTHA):

- In 2011, 407 International (the owners of Highway 407) earned gross revenues of \$675 million (net income \$128.3 million) from tolls on Highway 407, with an average revenue per trip of \$5.89 (reported in Kitchen and Lindsey, 2013).
- Dachis (2011) estimated the revenues from two potential toll-lane schemes in the GTHA. Estimates for the scheme included construction of HOT lanes on the western part of the Gardiner Expressway as well as express toll lanes on the eastern part of the Gardiner and the inside express lanes on Highway 401. The annual gross toll revenues were estimated at \$294 million. The second scheme – converting existing HOV lanes on 400-series highways in the GTHA to HOT and building out the remainder of Ontario's 450-kilometre HOV plan as HOT rather than HOV lanes – was estimated to yield gross toll revenues of \$632 million (reported in Kitchen and Lindsey, 2013).
- Hemson Consulting (2007) estimated revenues from tolling the Don Valley Parkway and Gardiner Expressway. It assumed weekday tolls of \$0.10/km during peak periods, and \$0.05/km during non-peak periods. Estimated annual revenues were \$120 million if there was no traffic diversion, and \$74 million with a diversion rate of 40 percent.
- A study by Irwin and Bevan (2010) for the Toronto City Summit Alliance considered a toll of \$0.07/km on all 400-series highways in the GTHA. This plan yielded estimated revenues of \$700 million per year.

3.2 Parking charges

Parking in large cities includes a mix of residential and non-residential spaces on private land, the street (curbside), surface lots, and parking garages. Not only do parking policies encourage more people to drive, parking is inefficiently priced.

On-street parking in high-demand areas is often priced well below its scarcity value. As a consequence, drivers spend considerable time looking for a vacant spot. Excessive cruising leads to traffic congestion, pollution, as well as inefficiencies and lost productivity (Grush, 2013). In the United States, for example, it has been estimated that cruising for parking accounts for roughly 30 percent of traffic in some cities at certain times of day (Shoup, 2006).

Meanwhile, privately owned garage parking is over-priced, because operators benefit from a degree of monopoly power due to their unique locations. Over-pricing of garage parking contributes further to the stock of cars cruising for parking (Arnott and Rowse, 2009), thus increasing traffic-related costs.

Efficient parking levies or taxes could help reduce the volume of traffic, leading to less congestion, faster trips, fewer policing and traffic enforcement costs, and reduced demand for new and expanded roads and highways (Kitchen and Lindsey, 2013). It could also generate much-needed revenue for improving and expanding public transit. Indeed, it has been argued that “underpriced parking does more to promote automobile use than good transit does to discourage it” (Grush, 2013: 132).

“Working tirelessly to build and promote transit that too few elect to use, struggling to find ways to have people pay for roads in ways they don’t wish to pay for, and then subsidizing parking ... is self defeating,” according to a leading expert (Grush, 2013). To overcome these concerns, three policies could be considered. These include:

- a *commercial parking sales tax*, which is a special tax imposed on parking transactions;
- a *parking levy*, which is a special property tax applied to non-residential parking spaces;
- changes to on-street and off-street parking practices.¹⁷

4. Taxes on income, sales, vehicle registration, fuel, and hotel stays are common in other cities around the world and are an effective and efficient way to diversify taxes at the local level, but cities need to set their own tax rates

4.1 Personal income tax

Some cities in Canada deliver social services, which are most appropriately funded from personal income taxes.¹⁸ An income tax is more progressive than the property tax, although not as closely related as the property tax to the benefits received from municipal services. There are two ways in which cities could levy a personal income tax – they could set up and administer their own income tax system or piggyback onto the existing provincial system. Box 6 explains the difference.

An income tax can be residence-based or payroll-based. For a residence-based income tax, an additional line could be added to the provincial personal income tax form after the line on which taxpayers report their provincial income tax liability. All taxpayers with postal codes that are part of the taxing city would be required to complete this line by multiplying their provincial income tax liability by a certain percentage (as determined by city council) and reporting the dollar value. The province could collect the revenue and remit it to the city.

For a tax on payrolls or earnings, each employer within the city would be required to apply a surtax (at a rate set by the city) to provincial income taxes deducted from all employees. This payroll tax would not be on all income received

17. See Kitchen (2014) for a more detailed discussion of parking practices and changes that could be made to improve them.

18. A municipal corporate income tax is not considered for the following reasons. First, corporate income taxes have fallen in major trading countries so there does not appear to be any justification for making it more costly for Canadian corporations to compete. Second, taxing mobile corporate capital and corporate profits encourages firms to shift their investments and profits to lower-taxed jurisdictions (Dahlby, 2012). Furthermore, taxes based on a mobile tax base are not good candidates for local taxation. Third, property taxes on the commercial/industrial sector already overtax business and thus there is no reason for an additional tax burden that bears no relationship to the cost of municipal services consumed.

Box 6: Should cities levy their own personal income tax or piggyback onto the existing provincial tax?

The first way for cities to levy a personal income tax would be by applying a local tax rate to the income tax base of a senior level of government. In Canada, the taxing city could apply a fixed tax rate within a specified range to either the taxpayers' assessed provincial income tax base or as a surtax on provincial income taxes payable. Piggybacking of this sort would be relatively inexpensive to administer, because the province would collect the revenue and periodically remit the local share to the city. The downside is that the city has no control over the tax base and may have to wait for tax remittances, which might be infrequent.

The second option is for cities to set up their own income tax structure and administration. A major problem with this approach, however, is that there would be little coordination across local jurisdictions and it would be expensive to administer and collect the taxes. Offsetting these drawbacks is the increased autonomy, control, and flexibility that cities would have over both the tax base and the tax rate. As well, cities would not have to wait for periodic remittances from the province.

by taxpayers, only on wage and salary income (hence its name). The tax would be paid by employees who live in the city as well as those who live outside the city but work in it. The revenue would be collected along with provincial income taxes and remitted to the city.

One important advantage of a payroll tax is that it captures revenue from commuters who work in the city and use city services but live outside the city and might not otherwise contribute to the cost of the services. In neither case is the tax applied to visitors.

A personal income tax that is levied in a city and not in the surrounding area may result in economic inefficiencies or distortions. If it is residence-based, it provides an incentive for people to move to areas that do not levy a similar tax. If it is levied on payrolls, it provides an incentive for employers to locate in areas that do not levy the tax or that levy it at a lower rate. The extent to which these kinds of distortions are important will depend on how responsive taxpayers are to municipal tax differentials.

Two empirical studies have suggested that a personal income tax may distort location decisions, but it is likely to be location-specific and it is not possible to make any reliable general statements about its impact (Mikesell, 2010). One study examined the income tax effects on employment and growth in the counties of the District of Columbia area from 1960 to 1994 (Mark, McGuire, and Papke, 2000). The analysis found that a one percentage point increase in the residence-based personal income tax rate reduced annual population growth by 0.81 percentage points. A second study (Haughwout et. al., 2004) found the elasticity of the New York City residence-based income tax to be about -0.5 (a one percent increase in the tax rate reduced annual population growth by 0.5 percent) and by even less in Philadelphia.

The impact on location and employment decisions is likely to be reduced if the tax is levied on a metropolitan or region-wide basis. Some cities in the United States that levy a payroll tax set a lower income tax rate on commuters than on residents. The rationale for this split tax rate is that non-residents who commute for work use city services (streets, sidewalks, fire and police protection, perhaps neighbourhood parks and so on) and therefore, should contribute to the funding of these services, although less than local residents. If the tax were completely residence-based, non-residents would escape any income tax contribution to funding municipal services.

4.2 *Municipal sales tax*

As with a municipal income tax, a municipal sales tax permits cities to tax non-residents who use local services. It would also give cities greater flexibility and breadth in determining their own tax structure and allow them to benefit from growth in the economy.

To the extent that differential tax rates across neighbouring municipalities create an incentive for shoppers to shop in lower-tax jurisdictions, some tax avoidance could ensue. Although there is no experience in Canada with municipal sales taxes, studies in the United States suggest that local sales taxes have an impact on the local economy when they are adopted or when rate increases create a differential. A 1 percent differential in the local sales tax reduces the local sales tax base by between 3 percent and 7 percent (see Mikesell, 2010, for a summary of these studies).¹⁹

Evidence from the United States also suggests that distortions of this type are minimized if all municipalities within the state or region impose similar taxes (Mikesell, 2010). One study that examined the employment impact in municipalities in the metropolitan Washington, D.C., area concluded that a one percentage point increase in the local sales tax rate reduced annual employment growth by 2.17 percent (Mark, McGuire, and Papke, 2000). Finally, cross-border shopping effects tend to be greater when a sales tax is first introduced or immediately following a rate increase when compared with the impact over the longer-term duration of the tax (Mikesell, 2010).

A piggybacked city sales tax similar to those levied in the United States might not be possible in Canadian provinces that have the harmonized sales tax (HST) or the goods and services tax (GST) (see Box 7), but it is a possibility in provinces that have their own provincial retail sales tax (Manitoba, Saskatchewan, and British Columbia).²⁰

19. The cross-border impact means that the tax base in neighbouring municipalities expands, although there is no evidence on the amount by which it could expand.

20. Jim Flaherty, former Federal Finance Minister, rejected this option in 2013 when it was proposed as one way of raising revenue to fund some of Metrolinx's (GTHA) capital expansion program.

Box 7: Why can't cities piggyback a municipal sales tax onto the HST or GST?

Cities cannot piggyback municipal sales tax onto the HST or GST because of the way in which these taxes are administered in Canada. GST and HST revenues collected in each province are not tracked by the federal government and remitted to that province. Rather, all GST/HST revenues are collected annually by the federal government and the entitlement for each province is calculated by a formula that estimates the consumption expenditure base in that province and then applies the tax rate for that province to its calculated share of the base. Revenues allocated to each HST/GST province are thus driven by the estimated taxable consumption base in that province. "With very minor exceptions, how the revenue is allocated is completely unrelated to how the HST actually functions" (Bird, 2012). If a city were to "piggyback" a municipal sales tax onto the HST, estimates of the taxable consumption base would be required for that city, a task that the Canada Revenue Agency or any other statistical agency is not currently equipped to handle.

One way to levy a city sales tax in HST/GST provinces would be for the provincial government to increase its tax rate and share the revenues with all municipalities. As noted in Box 3, however, this practice is akin to a provincial transfer and not a local tax. For HST provinces and Alberta (which does not have a provincial sales tax), an alternative would be for cities to set up their own sales tax structure as is done in a few cities in the United States, but this arrangement would be more costly to operate.

More recently, it has been argued that large cities and metropolitan areas in Canada could benefit from the substitution of a "business value tax" for the relatively high and discriminatory effective property tax rates currently levied on business properties (Bird, Slack, and Tassonyi, 2012). Moreover, it would complement the existing GST/HST and not compete with it. A tax of this sort is currently used by local governments in France, Japan, and Italy and could be introduced in Canada, but it could lead to additional administrative costs, at least at first (Bird, 2014).

4.3 Fuel tax

Although many U.S. cities levy fuel taxes, cities in Canada do not. The federal government in Canada, however, provides grants to municipalities (distributed according to population and public transit ridership) that were originally based on 5 cents per litre of federal gas tax revenue. In recent years, the grant has been increased by the inflation rate. As well, in a few Canadian cities and regions, provincial fuel tax revenues are shared between the province and the city or region (see Table 3).

A municipal gas and diesel fuel tax has a number of advantages. It is a benefit-based tax as long as revenues are earmarked for funding local roads and public transit. It can be an appropriate tool for internalizing the costs of greenhouse gas emissions, because emissions increase as the amount of fuel burned increases. It can reduce the cumulative or total distance driven, thus also reducing unnecessary driving or engine idling. It provides an incentive for switching to more fuel-efficient cars and public transit. It contributes to reducing urban sprawl – one

Table 3: Sharing of provincial fuel tax revenues in Canadian cities

Metro Vancouver	Province remits 17 cents per litre of provincial fuel tax revenues to the Greater Vancouver Transit Authority (TransLink) for the capital and operating costs of public transit.
Capital Region (Victoria)	Province remits 3.5 cents per litre of the provincial fuel tax revenue to the transit system in the Capital Region (around Victoria) for operating expenses and capital projects.
Calgary, Edmonton	City receives 4.5 cents per litre of the 9 cent provincial gas tax
Montréal	Agence Métropolitaine de Transport receives 3 cents per litre of all provincial fuel taxes collected on motor fuel sold in the Greater Montréal Area.
Toronto (and other Ontario municipalities)	Province shares 2 cents per litre from gas tax revenues with municipalities for public transit and the funds are distributed to municipalities on the basis of population and ridership.

Canadian study found that a 1 percent increase at the pump in the 12 largest Canadian metropolitan areas between 1986 and 2006 resulted in a 0.32 percent increase in population living in inner cities and a 1.28 percent reduction in low-density housing units (Tanguay and Gingras, 2011). As with other potential municipal taxes, cross-border distortions will be minimized if the tax is levied at a metropolitan or regional level rather than at the city level.

Although a municipal fuel tax could have significant benefits in the short run, it is unlikely to be effective in the long run. Fuel tax revenues are projected to decline because of a growing trend towards more fuel-efficient and hybrid vehicles as well as an increasing reliance on non-fossil-fuel vehicles such as electric cars; younger adults, especially those living in highly urbanized areas, are driving less; and retiring baby boomers are driving less than they did when they were younger. These factors suggest that other means of financing urban transit and roads will be required in the not-too-distant future (Kitchen, 2014).

For accountability, the fuel tax rate should be set by the city. Fuel taxes should be piggybacked onto the provincial rate, with the province collecting the tax and remitting the municipal portion to the city.

4.4 Motor vehicle registration fee

Vehicle levies are fixed charges on vehicle ownership that do not vary with usage. Vehicle levies include registration fees that are levied annually in every province. The City of Toronto introduced a \$60 levy on passenger and light commercial vehicles on September 1, 2008, but terminated the levy on January 1, 2011.

Vehicle fees could be based on features such as age and engine size – older and larger vehicles generally contribute more to pollution – or emissions, with low-

Box 8: Are dedicated (earmarked) taxes a good idea?

The case for earmarking is largely based on benefit grounds. When there is a close link between the tax and the use of revenues to finance additional expenditures, earmarking reveals taxpayer preferences for the public services and sends a clear signal to the public sector about how much of the service to provide (Bird and Jun, 2007). Earmarking also facilitates long-term planning and can prevent the political abuse of funds.

Politicians like earmarking because it reduces taxpayer resistance to higher taxes and taxpayers like the greater accountability that they perceive with how the funds will be spent. Public acceptability, as it turns out, is often the remaining barrier to the implementation of new taxes in most jurisdictions; therefore dedication of revenues is advisable if new taxes are to be considered.

The most-cited argument against earmarking is that it leads to inefficient budgeting by creating rigidities in the expenditure allocation process and preventing the authorities from reallocating funds when priorities change (Bird and Jun, 2007). One way to avoid this problem is by tying the funds to financing infrastructure. If done properly, earmarking will end when the project is completed.

emission vehicles charged less than high-emission vehicles. Location could also be a factor (cars in cities add more to pollution and to congestion) or axle weight (heavier vehicles do more damage to roads and require more costly roads to be built) (Slack, 2011). The fees are relatively easy to administer if piggybacked onto the provincial tax and are generally perceived to be fair on the basis of benefits received.

There is little research on the impact of vehicle levies on vehicle ownership or usage.²¹ A modest levy (such as the former \$60 Personal Vehicle Tax in Toronto) has little if any effect on ownership, and virtually none on usage. A fee based on fuel efficiency might have some influence on choice of vehicle type as would an *ad valorem* fee based on vehicle purchase cost. Nevertheless, small, fixed levies do not modify travel behaviour because they are unrelated to usage. A levy could be limited to residents living in areas that are well served by public transit. Such a levy might increase the incentive to use transit, but it would have a narrower base.

Vehicle levies are transparent because of the clear link between payment and the right to drive. They are accountable if the revenues are dedicated to transportation. A vehicle tax is a crude instrument for handling traffic congestion, however, because it does not vary with time of use, traffic volume, distance travelled, or the area in which vehicles travel (central-city versus inter-city trips). On the other hand, it is a charge on those who use roads, at least in some capacity. It is also likely to have a greater impact on the rich than the poor, because the latter have a lower rate of car ownership. To minimize tax avoidance, provincial requirements could prevent owners from registering their vehicles in a jurisdiction (such as cottage country) other than their principal place of residence.

21. Litman (2012) briefly reviews studies that examined the effects on vehicle ownership of fuel taxes, income, population density, and access to other transport modes.

Vehicle registration fees are a fairly stable and predictable source of funding. In 2011, the estimated budget impact of cancelling the personal vehicle tax in Toronto was approximately \$64 million (City of Toronto, 2011), while the cost of administering this tax amounted to about 1.5 percent of gross revenues (estimated from data in City of Toronto, 2010). The revenues were not dedicated to transportation infrastructure, however. Furthermore, it was estimated that if higher rates had been imposed, the yield would have risen nearly in proportion to the average fee paid per vehicle. However, to the extent that the fee has any effect on vehicle ownership and usage, it would reduce revenues from usage charges, including fuel taxes, parking fees, and tolls. If a levy were based on fuel efficiency or emissions, revenue would decline as the efficiency of the vehicle fleet improved.

4.5 Hotel and motel occupancy tax

An occupancy or room tax is an additional levy imposed on hotels and motels. This tax, it can be argued, compensates cities for services provided to tourists and visitors (for example, additional police and fire protection, and highway and public transit capacity needed to meet weekend or peak convention and tourist demands). The advantage of a hotel and motel occupancy tax over income and sales taxes is that it falls primarily on visitors.

Several cities in Canada levy hotel or motel occupancy taxes (see Table 4). In some cities, the tax is mandatory but, in other cities, a voluntary destination marketing fee is levied by those hotels that wish to participate. As with other taxes, cities could piggyback onto the existing sales tax on hotel and motel rooms through the addition of a few percentage points (the most common method used in Canadian cities) or set up their own administrative structure.

Jurisdiction	Tax or Fee
British Columbia municipalities	Municipalities can levy a hotel tax to a maximum of 2%
British Columbia resort municipalities	The province shares between 1 and 4 percentage points (amount determined by the province depending on the type of development) of the 8% provincial hotel room tax in 13 resort municipalities
Winnipeg	City levies a 5% hotel tax
Montréal	City levies a 3.5% hotel tax
Charlottetown	City levies a 3% tax
Banff, Calgary, Edmonton, Regina, Saskatoon	Voluntary destination marketing fee
Select municipalities in the Greater Toronto and Hamilton Area	Voluntary destination marketing fee

A tax on hotel and motel rooms in selected cities and not in competing communities provides an incentive for individuals to stay in hotels and motels in those cities without the tax. The extent to which differential tax rates would actually deter visitors from renting rooms is uncertain, however. If the demand for hotel and motel rooms is sensitive to price, then noticeable losses may occur. Since convention arrangements are often highly cost-sensitive, the impact on the convention business might be significant.

5. Personal income taxes and sales taxes could bring in considerable revenue for cities

Table 5 estimates revenue that could be generated in eight cities in Canada – Toronto, Ottawa, Calgary, Edmonton, Vancouver, Halifax, Winnipeg, and Montréal – from a city surtax on the provincial personal income tax paid by residents.²² Depending on the rate of surtax, the revenue yield could be quite large.

A 1 percent municipal surtax, for example, could have generated a high of about \$57 million in 2012 in Toronto and a low of slightly more than \$10 million in the city of Vancouver (column 2). As a percent of property taxes (column 3), revenue from a 1 percent surtax would equal about 2.9 percent of property taxes in Winnipeg (the highest) and 1.2 percent of property taxes in Ottawa (the lowest). A 1 percent surtax has a modest impact on taxpayers; for example, a person with a provincial tax liability of \$5,000 would see an increase of \$50 and a person with a

Table 5: Revenue estimates for a city income surtax, 2012

Cities	1% municipal surtax on provincial personal income tax		Income surtax necessary to raise 20% of property taxes	
	Estimated revenue (\$000,000)	Percent of property tax	20% of property taxes (\$000,000)	Surtax rate (%)
Toronto	57.3	1.5	753.8	13.1
Ottawa	16.4	1.2	265.0	16.2
Calgary	28.6	2.4	234.3	8.2
Edmonton	17.8	1.7	206.2	11.6
Vancouver	10.3	1.6	128.5	12.4
Halifax	11.8	2.3	100.8	8.5
Winnipeg	16.4	2.9	113.5	6.9
Montréal	41.0	1.5	549.9	13.4

Estimated by authors using personal income tax data from Canada Revenue Agency; property tax revenue data from provincial summaries of municipal statistics; and demographic data from Statistics Canada's Census Metropolitan Areas.

22. Data did not permit estimates of a surtax on payrolls.

tax liability of \$10,000 would face an increase of \$100. Some of this increase could be offset by lower residential property taxes.

Another way in which the impact of the city personal income tax could be examined is to estimate the surtax required to generate the equivalent of 20 percent of property tax revenue. This estimate is recorded in columns 4 and 5. The surtax could range from a low of 6.9 percent in Winnipeg to a high of 16.2 percent in Ottawa.

Table 6 estimates potential revenue from the implementation of a 1 percent municipal sales tax. These revenues are significant. They range from a low of \$90 to \$94 million in Halifax to a high of \$524 to \$546 million in Toronto (column 2). As a percent of property taxes, they range from a high of 24.9 to 26 percent in Winnipeg to a low of 9.2 to 9.6 percent in Ottawa (column 3).

As with the personal income tax comparison above, another way in which the impact of a city sales tax could be viewed is through the tax rate that would be required to generate the equivalent of 20 percent of property tax revenue. This estimate is recorded in column 4. The tax could range from a low of 0.8 percent in Winnipeg to a high of 2.15 percent in Ottawa.

Table 7 provides an estimate of revenue that might be generated in each city from a city fuel tax of 10 cents per litre. Like the previous estimates, these revenues are not inconsequential. They range from a low of \$52 to \$57 million in Halifax to a high of \$311 to \$330 million in Toronto (column 2). As a percent of property taxes, the estimates range from a high of 19 to 20 percent in Calgary to a low of 5.9 to 6.5 percent in Montréal (column 3).

Table 6: Revenue estimates for a city sales tax

Cities	1% municipal sales tax		
	Estimated revenue (\$000,000)	Percent of property tax	Municipal sales tax needed to raise 20% of property tax (%)
Toronto	524 to 546	13.9 to 14.5	1.4
Ottawa	122 to 127	9.2 to 9.6	2.15
Calgary	192 to 200	16.4 to 17.1	1.2
Edmonton	120 to 125	11.6 to 12.1	1.65
Vancouver	134 to 140	20.8 to 21.7	0.95
Halifax	90 to 94	17.9 to 18.6	1.1
Winnipeg	142 to 148	24.9 to 26.0	0.8
Montréal	321 to 335	11.7 to 12.2	1.65

Estimates by authors. Provincial sales tax revenues were used as a basis for making city estimates except for Alberta where GST revenue was used. Other data sources were the same as in Table 5.

Table 7: Revenue estimates for a city fuel tax, 2014

Cities	10 cents per litre on motor and diesel fuel ¹	
	Estimated revenue (\$000,000)	Percent of property tax
Toronto	311 to 330	8.2 to 8.7
Ottawa	104 to 110	7.5 to 7.9
Calgary	258 to 272	18.9 to 19.9
Edmonton	188 to 198	15.8 to 16.7
Vancouver	68 to 71	10.1 to 10.6
Halifax	52 to 57	9.9 to 11.0
Winnipeg	86 to 88	14.5 to 15.0
Montréal	162 to 179	5.9 to 6.5

1. Estimates based on an average price of \$1.15 per litre for 2014; the 2014 federal tax on motor and diesel fuel; the 2014 provincial tax on motor and diesel fuel; and the applicable HST/GST rate. Estimates based on methodology used in Kitchen (2014).

How were the estimates done? To calculate the potential revenues from a city income, city sales, and city fuel tax, one must consider the impact of a tax rate increase on the size of the tax base. For example, if the personal income tax rate rises, people may choose to work less or to move to a city that does not levy a surcharge, thereby reducing the size of the income tax base. The impact on the revenues will not simply be the increased rate multiplied by the existing tax base. The responsiveness of the tax base to a change in the effective tax rate is known as the “tax price elasticity.”

U.S. evidence suggests that the tax price elasticity for a municipal income tax is about -0.5 : this means that a 1 percent increase in the tax rate will result in a 0.5 percent reduction in the size of the tax base (Mikesell, 2010). This elasticity coefficient was used to estimate the change in the tax base applicable for the calculations in Table 5.

Similarly, a city sales tax may affect spending behaviour by providing an incentive for buyers to shop in neighbouring communities or to reduce their total spending. Tax price elasticity estimates in the U.S. (Mikesell, 2010) range from a low of -3.0 to a high of -7.0 . In other words, a 1 percent increase in the sales tax rate is likely to lead to a reduction in the tax base of 3 to 7 percent. These elasticity coefficients were used to estimate the change in the tax base for the calculations in Table 6.

The impact of increased fuel taxes on fuel tax revenue depends on how the tax affects driving behaviour. The effects of fuel prices on fuel consumption, vehicle

ownership, total vehicle kilometres travelled, and emissions of local pollutants and greenhouse gases have been studied extensively since the 1970s. Three recent North American studies present evidence that fuel prices may have larger impacts on fuel consumption and travel behaviour than older studies suggest. Using U.S. household data and a sophisticated model of household vehicle purchase and usage decisions, it has been estimated that the average household short-run price elasticity is -0.67 ; that is, a 10 percent increase in price leads to a 6.7 percent reduction in demand for fuel. A related study by the same author found that household gasoline price elasticities are higher for households with better access to public transit (Spiller and Stephens, 2012). It was estimated that the average household short-run price elasticity for households that had good access to public transit was -1.23 . These two tax price elasticities were used for the revenue estimates shown in Table 7.

In cities with new taxes, provincial and federal governments would likely experience a reduction in tax revenue if existing federal and provincial tax rates were retained. At the same time, the elasticity estimates suggest that the tax base in neighbouring municipalities would increase because of cross-border effects; hence, federal and provincial revenues would rise in these municipalities. In other words, a loss in one municipality will be partially offset by an increase in neighbouring municipalities; the overall impact would be hard to determine.

Table 8 estimates the potential impact on provincial and federal income tax revenues in these cities if they were to raise 20 percent of their property tax revenue from a surtax on the provincial income tax. Column 2 records this

<i>Table 8: Impact of raising an equivalent of 20% of city property tax revenue by a surtax on the provincial personal income tax, 2012</i>				
Cities	City income tax revenue (\$ millions)	Loss in tax revenue in each city		Percentage reduction
		Provincial (\$ millions)	Federal (\$ millions)	
Toronto	754	88	157	1.5
Ottawa	265	31	55	1.9
Calgary	234	28	67	1.0
Edmonton	206	24	58	1.4
Vancouver	129	15	36	1.5
Halifax	101	12	15	1.0
Winnipeg	114	14	18	0.8
Montréal	550	64	77	1.6

Estimated by the authors from data cited in Table 5.

personal income tax revenue for each city. Columns 3 and 4 record potential losses in provincial and federal income tax dollars if their tax base is shared with cities. Column 5 lists the reduction in personal income tax revenue as a percent of total provincial and federal income taxes collected. The loss in provincial and federal income tax revenue would be the largest in Toronto – \$88 and \$157 million, respectively or 1.5 percent of personal income taxes collected in 2012. The lowest dollar impact on federal and provincial personal income tax revenues would be in Halifax, where revenues could decline by \$27 million or 1.0 percent of existing revenue. As noted above, these losses would be partly offset by gains elsewhere.

As with the income tax, a municipal sales tax could reduce provincial tax revenues in these cities. Table 9 shows the potential decrease in provincial sales tax revenue if provinces continue with their existing sales tax rate (column 3). This revenue is estimated to fall by something between \$135 and \$315 million in Toronto (highest) and by \$23 to \$54 million in Halifax (lowest). There would be no decrease in Alberta, because there is no provincial sales tax. Column 4 records the expected percentage loss in provincial sales tax revenue.

The provincial revenue loss would be partially, if not totally, offset by increases in other jurisdictions. A city fuel tax will also affect the amount of revenue collected by provincial and federal governments, if the latter retain their current fuel tax rates. Table 10 illustrates the potential impact of a 10-cent city fuel tax. In every city, both provincial and federal fuel tax revenues would decline, but by considerably less (columns 3 and 4) than the revenue that could be generated

Table 9: Impact of a 1% city sales tax on provincial sales tax revenue, 2012

Cities	City sales tax revenue (\$ millions)	Loss in provincial revenue in each city (\$ millions)	Percent loss in provincial sales tax revenue (\$ millions)
Toronto	524 to 546	135 to 315	3.0 to 7.0
Ottawa	122 to 127	32 to 74	1.8 to 4.3
Calgary	192 to 200	N.A.	0.0
Edmonton	120 to 125	N.A.	0.0
Vancouver	134 to 140	34 to 80	3.4 to 8.0
Halifax	90 to 94	23 to 54	2.4 to 5.6
Winnipeg	142 to 148	37 to 85	3.4 to 8.0
Montréal	321 to 335	83 to 193	2.5 to 5.9

for each city (column 2). In addition, there is likely to be an impact on HST/GST revenues.²³

Depending on the way in which motorists respond to the additional 10-cent tax, HST/GST revenues could go up or down (column 5). At the same time, provincial and federal revenues would increase in neighbouring municipalities, so the net impact on the revenue of the senior levels of government would be uncertain.

Table 10: Impact of a 10-cent-per-litre motor and diesel fuel tax on provincial and federal tax revenues, 2014

Cities	City fuel tax revenue (\$ millions)	Loss in provincial and federal fuel tax revenue		Impact on HST/GST revenue (\$ millions)
		Provincial (\$ millions)	Federal (\$ millions)	
Toronto	311 to 330	32 to 58	22 to 40	from +15 to -12
Ottawa	104 to 110	11 to 20	7 to 13	from +5 to -4
Calgary	258 to 272	22 to 40	17 to 31	from +5 to -3
Edmonton	188 to 198	16 to 29	12 to 23	from +4 to -4
Vancouver	68 to 71	10 to 17	5 to 8	from +1 to -1
Halifax	52 to 57	10 to 19	7 to 12	from -2 to -11
Winnipeg	86 to 88	4 to 8	3 to 6	from +5 to +3
Montréal	162 to 179	42 to 76	21 to 38	from -4 to -33

Estimates based on methodology used in Kitchen (2014).

6. Summary and conclusions

Large cities in Canada face many challenges – changing demographics, increased income inequality, increasingly complex expenditure demands, and deteriorating infrastructure, among others. Although the challenges have increased over the last few decades, the revenues available to cities to meet those challenges have remained largely the same – property taxes, user fees, and transfers from the federal and provincial governments. Other cities around the world use a wider range of tax choices, including income, sales, fuel, and other vehicle taxes. It is time for Canadian cities to have access to some of those choices as well.

For governments to operate efficiently, it is important that there be a clear link between expenditure and revenue decisions – those who make the expenditure decisions should also make the revenue decisions and the type of revenue (user fees, property taxes, income taxes) should match the type of expenditure being funded (transit, policing, social assistance). A direct link should result in more accountable government and in less opposition from taxpayers to paying the taxes when they know where their tax dollars are going.

23. The HST/GST is applied to the price of motor and diesel fuel, whereas the provincial sales tax is not applied to the price.

Table 11: Summary of potential new taxes and fees for cities

Potential Revenue	Strengths	Weaknesses
Surtax on personal income tax (residence based or payroll based)	<ul style="list-style-type: none"> • satisfies some criteria for a good local tax • if payroll-based, taxes commuters • broadly based; large revenue potential 	<ul style="list-style-type: none"> • residence-based tax does not tax commuters and visitors • payroll-based tax does not tax visitors • incentive to locate outside taxing area, but this will be less noticeable the larger the geographic size of the taxing jurisdiction
Municipal sales tax	<ul style="list-style-type: none"> • satisfies most criteria for a good local tax • taxes commuters and visitors • broadly based; large revenue potential 	<ul style="list-style-type: none"> • incentive to purchase outside taxing area, but this will be less noticeable the larger the geographic size of the taxing jurisdiction • at the moment, not permissible as a piggybacked tax in HST/GST provinces
Dedicated fuel tax	<ul style="list-style-type: none"> • satisfies most criteria for a good local tax • broadly considered a benefit-based tax if revenues are earmarked for funding local roads, highways, and public transit • relatively inexpensive and simple to implement and administer • tax rates could be set locally and piggybacked onto the provincial tax rate 	<ul style="list-style-type: none"> • blunt instrument for targeting congestion • incentive to purchase fuel outside taxing area, but effect will be less noticeable the larger the geographic size of the taxing jurisdiction • revenues will be difficult to sustain with the increase in fuel efficient and non-fossil-fuel vehicles
Parking sales tax or levy	<ul style="list-style-type: none"> • satisfies the minimum criteria for a good local tax for helping fund roads and transit • ideally suited to handling problems created by parking congestion • relatively inexpensive to implement and administer • more likely to be accepted if funds are dedicated to roads and transit 	<ul style="list-style-type: none"> • may divert business away from taxed areas
High occupancy toll (HOT) lanes	<ul style="list-style-type: none"> • drivers choose whether to pay or not • not likely to divert traffic to other roads • more likely to be accepted if funds are dedicated to roads and transit 	<ul style="list-style-type: none"> • may not reduce congestion, only switch the lanes travelled
Highway tolls	<ul style="list-style-type: none"> • large potential to reduce congestion and hence, future infrastructure • large revenue generator • more likely to be accepted if funds are dedicated to roads and transit 	<ul style="list-style-type: none"> • traffic diversion to untolled substitutes
Vehicle Registration Levy	<ul style="list-style-type: none"> • satisfies the minimum criteria for a good local tax for roads and transit • inexpensive to implement and administer • more likely to be accepted if funds are dedicated to roads and transit 	<ul style="list-style-type: none"> • does not tax commuters and visitors • not effective for handling congestion
Hotel and motel tax	<ul style="list-style-type: none"> • taxes visitors 	<ul style="list-style-type: none"> • may be a disincentive to visit or host conventions in taxing jurisdiction • small revenue

Although setting up their own tax systems would grant cities the most fiscal autonomy, this option would be costly. For this reason, it is advisable that cities piggyback new taxes onto provincial taxes, with the province collecting the revenue and remitting it to cities. To promote local accountability, however, it is essential that local governments set their own tax rates. In this way, taxes levied could be linked to services consumed.

Table 11 summarizes the strengths and weaknesses of each of the taxes and fees described in this paper.

Finally, new revenue sources may not be appropriate for small and medium-sized municipalities. Because residents and businesses can easily cross municipal borders to do their shopping or buy their gas, many of these new taxes would have to be levied on a metropolitan or region-wide basis. Moreover, giving a small town access to income or sales tax revenues would not generate sufficient revenues to justify the cost of collecting the tax. The tax base would be too small; hence, smaller municipalities may have to rely more heavily on transfers from provincial governments.

Works Cited

- Althaus, Catherine, Lindsay M. Tedds, and Allen McAvoy (2011). "The feasibility of implementing a congestion charge on the Halifax Peninsula: Filling the 'missing link' of implementation." *Canadian Public Policy* 37(4), 541–61.
- Altus Group Economic Consulting (2014). *Economic Implications of the Municipal Land-Transfer Tax in Toronto* (prepared for the Ontario Real Estate Board).
- Arnott, Richard and John Rowse (2009). "Downtown parking in auto city." *Regional Science and Urban Economics* 39(1), 1–14.
- Bahl, Roy (2010). Financing metropolitan cities. In *United Cities and Local Governments, Local Government Finance: The Challenges of the 21st Century*, Second Global Report on Decentralization and Democracy, Barcelona: UCLG.
- Bazel, Philip and Jack Mintz (2014). "The free ride is over: why citizens must start paying for much needed infrastructure." University of Calgary, School of Public Policy, SSP Research Papers, 7(14).
- Bird, Richard M. (2011). "Subnational taxation in developing countries: A review of the literature." *Journal of International Commerce, Economics, and Policy* 2(1), 139–161.
- Bird, Richard M. (2012). "The GST/HST: Creating an integrated sales tax in a federal country." University of Calgary, School of Public Policy, SSP Research Papers, 5(12).
- Bird, Richard M. (2014). *A Better Local Business Tax: The BVT*. University of Toronto, IMFG Papers on Municipal Finance and Governance, No. 18.
- Bird, Richard M., and Roy Bahl (2008). "Subnational taxes in developing countries: The way forward." University of Toronto: Joseph L. Rotman School of Management, Institute for International Business Paper, No. 16.
- Bird, Richard, M., and J. Jun (2007). "Earmarking in theory and Korean practice." In S. Phua (ed.), *Excise Taxation in Asia*, pp. 49–86. Singapore: National University of Singapore.

- Bird, Richard M., and Enid Slack, eds. (2004). *International Handbook of Land and Property Taxation*. Northampton, Mass.: Edward, Elgar Publishing Limited.
- Bird, Richard M., and Enid Slack (2014). "Local Taxes and Local Expenditures in Developing Countries: Strengthening the Wicksellian Connection." *Public Administration and Development* 34(5), 359–369.
- Bird, Richard M., Enid Slack, and Almos Tassonyi (2012). *A Tale of Two Property Taxes: Property Tax Reform in Ontario*. Cambridge, Mass.: Lincoln Institute of Land Policy.
- Blöchliger, Hansjörg, and José Pinero-Campos (2011). *Tax Competition Between Sub-Central Governments*. Paris: OECD.
- Breton, Albert (1996). *Competitive Governments*. Cambridge: Cambridge University Press.
- Brühlhart, Marius, Sam Bucovetsky, and Kurt Schmidheiny (2014). *Taxes in Cities*. Munich: CESifo Working Paper Series, No. 4951.
- Chernick, Howard (2002). "The Effect of Commuters on the Fiscal Costs of the District of Columbia." Mimeograph, 36 pages.
- Chernick, Howard and Olesya Tkacheva (2002). "The Commuter Tax and the Fiscal Cost of Commuters in New York City." *State Tax Notes* 25(6), 451–456.
- Chernick, Howard, Adam Langley, and Andrew Reschovsky (2010). *Revenue Diversification and the Financing of Large American Central Cities*. University of Toronto, IMFG Paper on Municipal Finance and Governance, No. 5.
- City of Toronto (2011). "Personal Vehicle Tax (PVT)." Fact Sheet, February 18. Available at www.toronto.ca
- City of Toronto (2010). Corporate Revenues: Property Tax, Municipal Land Transfer Tax, Personal Vehicle Tax, and Development Charges. Council Briefing, Section 2.3. Available at http://www1.toronto.ca/city_of_toronto/city_managers_office/civic_engagement/council_briefings/files/pdf/1-2-03.pdf
- Clayton, Frank, A. (2015). *City of Toronto's Land Transfer Tax — Good, Bad or Merely Tolerable?* Toronto: Ryerson University, Centre for Urban Research and Land Development.
- Côté, André and Michael Fenn (2014). *Provincial-Municipal Relations in Ontario: Approaching and Inflection Point*. University of Toronto, IMFG Paper on Municipal Finance and Governance, No. 17.
- Dachis, Benjamin (2011). *Congestive Traffic Failure: The Case for High-Occupancy and Express Toll Lanes in Canadian Cities*, C.D. Howe Institute, e-brief, August 31. Available at http://www.cdhowe.org/pdf/ebrief_122.pdf
- Dachis, Benjamin (2012). *Stuck in Place: The Effect of Land Transfer Taxes on Housing Transactions*. Toronto: C.D. Howe Institute.
- Dachis, Benjamin, Gilles Duranton, and Matthew Turner (2008). *Sand in the Gears: Evaluating the Effects of Toronto's Land Transfer Tax*. Toronto: C.D. Howe Institute.
- Dahlby, Bev (2012). "Reforming the Tax Mix in Canada." University of Calgary, School of Public Policy Research Papers 5(14), April.

Fenn, Michael, and Harry Kitchen (2016). *Bringing Sustainability to Ontario's Water System: A Quarter Century of Progress, with Much Left To Do*. Report prepared for the Ontario Sewer and Watermain Construction Association.

Grush, Bern (2013). "Reduce, rethink, reform." *Thinking Cities*, 132–137. Available at <http://paybysky.com/wp-content/uploads/2013/04/Reduce-Rethink-Reform-from-Thinking-Cities.pdf>

Haider, Murtaza, Amar Anwar, and Cynthia Holmes (forthcoming). *Did the Land Transfer Tax Reduce Housing Sales in Toronto?* University of Toronto, IMFG Paper on Municipal Finance and Governance, No. 28.

Haughwout, Andrew, Robert Inman, Stephen Craig, and Thomas Luce (2004). "Local revenue hills: Evidence from four US cities." *Review of Economics and Statistics* 86(2), 570–585.

Hemson Consulting (2007). *New Taxation Measures: City of Toronto Act*. Report prepared for the City of Toronto.

Irwin, Neal, and Andrew Bevan (2010). *Time to Get Serious: Reliable Funding for GTA Transit/Transportation Infrastructure*. Toronto: Toronto City Summit Alliance.

Kitchen, Harry (2014). *Taxing Motor Gas and Diesel Fuel in the GTHA. Will This Generate Sufficient Revenue?* Report for the Residential and Civil Construction Alliance of Ontario. Available at www.rccao.com

Kitchen, Harry (2016). "Is 'Charter-City Status' A Solution for Financing City Services in Canada or Is That A Myth?" University of Calgary, School of Public Policy, SSP Research Papers, 9(2).

Kitchen, Harry, and Robin Lindsey (2013). "Financing Roads and Public Transit in the Greater Toronto and Hamilton Area." Report for the Residential and Civil Construction Alliance of Ontario. Available at www.rccao.com

Kitchen, Harry, and Almos Tassonyi (2012). "Municipal taxes and user fees." In H. Kerr, K. McKenzie, and J. Mintz (eds.), *Tax Policy in Canada*, ch. 9. Toronto: Canadian Tax Foundation

Kneebone, Ron, and Ken McKenzie (2003). "Removing the shackles: Some modest and immodest proposals to pay for cities." In P. Boothe (ed.), *Paying for Cities*, pp. 43–77. Edmonton: University of Alberta, Institute of Public Economics.

LeBlanc, Daniel, and Les Perreux (2014). "Quebeckers pan Champlain toll." *Globe and Mail*, May 9, p. A12.

Litman, Todd (2012). Road pricing: Congestion pricing, value pricing, toll roads and HOT lanes. Available at <http://www.vtpi.org/tadm/tadm35.htm>

Mark, Stephen T., Therese J. McGuire, and Leslie E. Papke (2000). "The influence of taxes on employment and population growth: Evidence from the metropolitan Washington D.C. area." *National Tax Journal* 53(March).

McMillan, Mel, and Bev Dahlby (2014). "Do local governments need alternative sources of tax revenue? An assessment of the options for Alberta cities." University of Calgary, School of Policy Studies, SSP Research Papers, 7(26).

- Mikesell, John L. (2010). "The contribution of local sales and income taxes to fiscal autonomy." In G.K. Ingram and Y-H Yang (eds.), *Municipal Revenues and Land Policies*, ch. 6. Cambridge, Mass.: Lincoln Institute of Land Policy.
- OECD (2015). *Revenue Statistics 1965–2014*. Paris: OECD.
- Shoup, Donald C. (2006). "Cruising for parking." *Transport Policy* 13, 479–486.
- Slack, Enid (2009). *Guide to Municipal Finance*. Nairobi, Kenya: UN Habitat.
- Slack, Enid (2011). *Financing Large Cities and Metropolitan Areas*. University of Toronto, IMFG Paper on Municipal Finance and Governance, No. 3.
- Slack, Enid, and Richard Bird (2015). "Financing regional public transit in Ontario: The Case for strengthening the Wicksellian connection." Paper presented to the 2015 State of the Federation Conference, Queen's University, Kingston.
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- Spiller, Elisheba, and Heather M. Stephens (2012). "The heterogeneous effects of gasoline taxes: Why where we live matters." Resources for the Future Discussion Paper, No. 12-30. Available at <http://ssrn.com/abstract=2113594>
- Tanguay, Georges A., and Ian Gingras (2011). "Gas prices variations and urban sprawl: An empirical analysis of the 12 largest Canadian metropolitan areas." CIRANO – Scientific Publication No. 2011s-3. Available at <http://ssrn.com/abstract=1919003>
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