

**THE IMPLICATIONS OF TRENDS IN MUNICIPAL FINANCE FOR  
HOUSING AFFORDABILITY**

by

**Harry M. Kitchen  
Trent University**

and

**Enid Slack  
Enid Slack Consulting Inc.**

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## **Effets des tendances dans les finances municipales sur l'abordabilité du logement : Résumé**

*L'étude examine les tendances dans les dépenses et les recettes municipales pour sept villes canadiennes : Vancouver, Edmonton, Calgary, London, Ottawa, Sherbrooke et Halifax.*

- *L'étude conclut que les frais d'exploitation municipaux, en dollars constants par habitant, n'ont pas augmenté de façon marquée au cours des dix à vingt dernières années dans la plupart des villes. Ottawa a présenté une diminution dans les frais en dollars constants par habitant.*
  - *Les frais d'exploitation municipaux pour les services environnementaux (égouts, eau et déchets solides) et les routes, en dollars constants, ont augmenté plus rapidement que les frais totaux dans la plupart des villes (sauf London, Sherbrooke et Halifax).*
  - *Les tendances dans les recettes municipales ont montré une dépendance accrue sur les droits d'utilisateurs.*
  - *Les impôts fonciers restent la source unique la plus importante de recettes municipales dans toutes les villes. Toutefois, en pourcentage des recettes provinciales, on note une baisse dans toutes les villes au cours des années.*
  - *Les recettes des impôts fonciers et autres taxes afférentes ont légèrement augmenté dans toutes les villes. Cela indique que les municipalités ont été peu disposées à augmenter les taxes et qu'elles ont peu contribué au coût des maisons et à une diminution de l'abordabilité du logement.*
  - *Les recettes provenant d'autres «sources» (par exemple licences, permis, amendes, rendement d'investissements, etc.) ont augmenté de façon relativement importante.*
  - *La tendance montre que la plupart des municipalités comptent davantage sur les recettes d'exploitation et les réserves au lieu de l'emprunt comme solution de rechange pour financer des dépenses en immobilisations.*
  - *Les charges pour les coûts d'aménagement servent à financer les coûts d'aménagement d'une infrastructure municipale indirecte dans trois provinces (Colombie-Britannique, Alberta et Ontario). Les charges ont augmenté de façon relativement importante au cours des dernières années. Il s'avère que les charges des «prélèvements fonciers» sont passées aux acheteurs de nouvelles maisons. Cette situation réduit l'abordabilité, en particulier dans les villes à croissance rapide.*
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## **The Implications of Trends in Municipal Finance for Housing Affordability**

Local governments make operating and capital expenditures to provide services to local residents and businesses. These services include: general government, police and fire protection, roads and transit, health and social services, education, water, sewage and garbage collection and disposal, recreation and culture, and planning and development.

To pay for the operating costs associated with these services, local governments rely mainly on property taxes, transfers from the federal and provincial governments, user fees, and other miscellaneous revenues such as license fees and permits. To meet capital requirements, municipalities use property taxes, user fees, transfers from the federal and provincial governments, long term liabilities (borrowing) and charges to the private sector such as development charges.

The purpose of this paper is to determine the implications for housing affordability of trends in municipal finance. The paper summarizes trends in municipal expenditures and revenues for seven Canadian cities over the last twenty years and then addresses the degree to which housing affordability may have changed over time as a consequence of municipal financial decisions.

### **1. How Does Municipal Finance Affect Housing Affordability?**

To the extent that municipal expenditures increase over time, municipalities will be required to raise revenues to pay for them. The way in which local governments raise revenues can affect both the purchase price of housing in the municipality and the monthly

carrying costs.<sup>1</sup> For example, property taxes and development charges are directly related to properties: property taxes are levied on the assessed value of the property; development charges are levied as fixed charges per lot. Provincial transfers, on the other hand, are not property-related. The extent to which a municipality relies on property-related sources of revenue will affect housing prices, carrying costs and affordability.

To determine the impact of a tax or charge on housing affordability, it is not sufficient to look at who pays the tax or charge (the legal incidence). Rather, it is necessary to determine who bears the final burden (the economic incidence). The difference between the economic incidence and the legal incidence is the extent to which the tax can be shifted onto others. For example, development charges are levied on developers but it is unlikely that they bear the final burden of the charge. As will be discussed below, it is more likely that the burden of the charge is shifted onto new homebuyers in terms of higher prices for new housing.

## **2. Municipal Financial Trends: Data and Methodology**

Data on expenditures and revenues have been collected for seven Canadian cities: Vancouver, Edmonton, Calgary, Ottawa, London, Sherbrooke and Halifax.<sup>2</sup> The data for all of the cities, with the exception of Sherbrooke, have been taken from the annual municipal statistics compiled by the provincial ministries or departments of municipal affairs. Since this information was not available for the last twenty years for Quebec municipalities, the annual reports for

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<sup>1</sup> Although taxes and charges also affect the disposable income of households (that is, the income after taxes), this paper focuses on the impact of alternative municipal revenue sources on housing prices and carrying costs.

<sup>2</sup> The data have been collected as part of a larger study by Kitchen, Harry, M. and N. Enid Slack entitled Trends in Municipal Finance (Ottawa: Canada Mortgage and Housing Corporation, 1993).

the City of Sherbrooke were used instead.

The data are presented in constant (1986) dollars per capita. Per capita expenditures have been deflated by the implicit GNE price deflator for total government expenditures. One of the reasons why expenditures (or revenues) have increased is because of a general increase in the price level which was beyond the control of any individual municipality. To analyze trends over time, it is necessary to look at the growth in constant dollar expenditures removing the influence of inflation and population changes.

Some of the problems with the data and with comparisons of trends across municipalities and over time include the following:

- All years were not available for each municipality from provincial or municipal sources. For example, it was not possible to obtain data for Sherbrooke prior to 1982.
- Reporting styles change over time. For example, the breakdown of user fees by function was available for Ottawa and London for some years but not all. In general, a consistent time-series data set for Ottawa and London was available for the years from 1977 to 1990.
- In some municipalities, services are provided by separate boards or commissions. Utilities and transit in Vancouver, for example, are sometimes provided outside of the municipal departments and have been recorded separately.
- Some municipalities are part of a regional government structure (Ottawa, Vancouver and Halifax). This means that expenditures on some functions do not include the expenditures made at the regional level.

- The split of responsibilities between the provincial government and local governments is different in different provinces. For example, the province pays for welfare in B.C., Alberta and Quebec. This means that municipalities in these provinces do not make significant expenditures on this function.

### **3. What are the Trends in Municipal Expenditures?**

Information on operating expenditures for each of the seven cities can be found in the Appendix. The Appendix tables summarize per capita expenditures by function for the most recent year available, the distribution of expenditures by function for the most recent year and for the earliest year for which data are available, and the annual average growth<sup>3</sup> in operating expenditures in constant dollars per capita by function.

The information in the Appendix tables suggests that, in constant dollars per capita, operating expenditures have not increased all that dramatically in most cities. Some specific points can be noted:

- For **Vancouver**, municipal expenditures, in aggregate, grew by 0.4 percent per year from 1971 to 1990. Environmental services and roads grew by 6.0 and 5.6 percent per year respectively. The decline in welfare expenditures reflects the provincial takeover during this period.
- For **Edmonton**, municipal expenditures grew by 2.7 percent per year from 1980 to 1990. Environmental services (sewers, water and solid waste) grew by 6.2 percent per year. Road expenditures grew by 5.0 percent per year.

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<sup>3</sup> The annual average growth rate is the effective compound annual rate of increase over the period.



The fastest increase in expenditures was for environmental development at the annual average rate of 29.3 percent per year.

- For **Calgary**, municipal expenditures grew by 1.6 percent per year from 1980 to 1990. Expenditures on sewers, water and solid waste combined increased by 3.0 percent per year. Expenditures on roads grew by 7.2 percent per year. Environmental development grew at the annual average rate of 18.0 percent.
- In **London**, operating expenditures grew by 2.2 percent per year over the period from 1977 to 1990. Environmental expenditures grew at the rate of 0.6 percent per year, and roads grew by 0.5 percent per year. Welfare expenditures grew at an annual average rate of 6.5 percent.
- For **Ottawa**, municipal expenditures declined, on average, by 0.1 percent per year from 1977 to 1990. Expenditures on sewer and garbage combined increased by 3.7 percent per year while expenditures on streets declined by 4.1 percent per year. It is important to recall, however, that the Regional Municipality of Ottawa-Carleton is also responsible for some streets, roads and sewage.
- For **Sherbrooke**, municipal expenditures grew by an average of 2.4 percent per year from 1982 to 1991. Expenditures on environmental services (water, sewage, and garbage) grew at a slower rate of 1.3 percent per year while expenditures on roads grew at a rate of 0.8 percent per year.
- In **Halifax**, the annual average growth rate for operating expenditures was 0.9 percent per year. Transportation

expenditures fell over the period (at 0.4 percent per year) as did environmental expenditures (at 2.2 percent per year). The largest increases in expenditures were accounted for by recreation and culture, welfare and planning and development.

In summary, operating expenditures in constant dollars per capita have not increased substantially over the past ten to twenty years in most of the cities studied. Indeed, in one city (Ottawa), there has been a decline in per capita constant dollar expenditures.

The Appendix also provides figures showing the distribution of capital expenditures by function over time for six of the seven cities<sup>4</sup>. Two points can be noted about capital expenditures:

- It is difficult to analyze expenditure patterns over time because of the sporadic and lumpy nature of capital expenditures. A large expenditure on a sewage treatment plant in one year, for example, is likely to mean few expenditures in subsequent years.
- The bulk of capital expenditures in most cities are for water, sewers and roads.

#### **4. What are the Trends in Municipal Revenues?**

Information on operating revenues is summarized in the Appendix tables which show per capita revenues for the most recent year available, the distribution of revenues by function for the most recent year and the earliest year available and annual average growth rates.

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<sup>4</sup> Information on capital expenditures and sources of capital revenue were not available for Sherbrooke.

All municipalities, regardless of their fiscal environment, draw upon similar revenue sources (property taxes, user fees, provincial transfers and other revenues) although the relative importance of each differs. The following summarizes the general trends in operating revenues:

- The two largest sources of municipal revenue are property taxes and provincial transfers, especially conditional transfers. The exception is Sherbrooke where transfers are relatively small.
- Property taxes are relatively more important in municipalities in Ontario than in other provinces. Although property taxes remain a large source of revenue to all municipalities, property taxes as a percent of municipal revenues have declined in every city.
- In two cities (Edmonton and Ottawa), property taxes have declined over the period examined.
- In all but two cities (Ottawa and Sherbrooke), user fees as a percent of municipal revenues have increased.
- The pattern of provincial transfers varies across the seven cities: in Vancouver, Edmonton and Calgary, both conditional and unconditional transfers<sup>5</sup> declined in relative importance. In London and Halifax, unconditional grants declined in relative importance while conditional grants increased in relative importance. In Ottawa, the opposite occurred.

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<sup>5</sup> Conditional transfers have to be spent on specific functions which are determined by the donor. Unconditional transfers can be spent on any function or they can be used to reduce taxes.

- In every city, except for Sherbrooke, the category of 'other revenue' (licences, permits, fines, return on investment, etc.) has increased in relative importance as a revenue generator.

With respect to the sources of revenue for capital expenditures, the Appendix provides figures for each city on the distribution of capital revenues. While there are exceptions, most cities in recent years seem to be relying more heavily on operating revenues and reserves as opposed to debt. Two further points can be noted<sup>6</sup>:

- The pattern of borrowing has not been consistent across the seven cities. The use of borrowing has declined in Calgary, London and Ottawa. In the other cities, there is no consistent pattern.
- Development charges are levied by municipalities in three provinces: B.C., Alberta and Ontario. While they are fairly large per lot, they do not bring in substantial revenues for municipalities. However, they have increased in relative importance over the last few years.

##### **5. What are the Implications of Municipal Financial Trends for Housing Affordability?**

The trends in municipal expenditures indicate that these expenditures have not grown dramatically over the last ten to twenty years in the seven cities studied. This finding suggests that total expenditures on municipal services (to improve the quality and quantity of these services) have not, in themselves, resulted in a worsening in housing affordability over the last twenty years. However, the choice of revenue sources to finance

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<sup>6</sup> The following information was taken from Kitchen and Slack (1993b).

these expenditures may have had an impact on housing affordability. The impact of different sources of revenue on housing prices and monthly carrying costs is outlined below.

### **5.1 Property Taxes**

Traditionally, the major source of revenue to municipal governments in Canada has been the property tax. While it has not grown rapidly in any of the seven cities<sup>7</sup> in the last twenty years, and it has even declined in Edmonton and Ottawa, the property tax remains the mainstay of local public finance. Its impact on housing affordability is, therefore, an important issue.

The impact of the residential property tax on the purchase price and the carrying costs of owner-occupied dwellings depends on various assumptions about who bears the burden of the tax (the incidence of the tax). While there has been much written on the incidence of residential property taxes (see, for example, Bird and Slack, 1983 and Kitchen, 1992), there is no definitive conclusion on who bears the burden.

A residential property tax on an existing owner-occupied dwelling is generally assumed to be borne by the owner-occupier for there is no one that (s)he can pass it on to. This means that, if property taxes are increased, the tax will be borne by the homeowner in terms of higher monthly carrying costs.

#### **5.1.1 Property Tax Capitalization**

A prospective purchaser, however, may not bear the burden of the property tax if (s)he can pass the tax onto the existing property owner. In other words, a prospective buyer considering buying

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<sup>7</sup> The fastest growth in property taxes was in London at 1.8 percent per year.

property is also buying the future tax liabilities associated with that property. For this reason, (s)he will offer less for the property and the burden of the tax will be borne by the vendor at the time the tax is imposed. Future owners will pay future taxes but these taxes are not a burden because they were offset by the lower price paid for the property originally.

The tax is said to be capitalized into the value of the property to the extent that buyers are aware of the amount of the tax and to the extent that a number of other assumptions about market conditions are met (see Bird and Slack, 1983).

The evidence on capitalization of residential property taxes in Canada is inconclusive (see Kitchen and Slack, 1993) ranging from 0 percent capitalization to 100 percent capitalization. A review of these studies leads one to conclude that there is probably some capitalization of residential property taxes but not full capitalization.

What does all this mean for housing affordability? If the tax is capitalized into property values at the time it is imposed, then a prospective buyer would not bear the burden of the tax because (s)he would pay less for the property. If the property tax is not fully capitalized, the new homebuyer will bear some of the tax. Further, any unanticipated increases in the property tax in the future will be borne by the owner-occupier.

It is most likely, given the evidence on property tax capitalization, that at least some part of the tax will be borne by the homeowner in terms of higher monthly carrying costs, thus reducing housing affordability. Over the last twenty years, however, the evidence on revenue trends suggests that property taxes have not increased at a rapid rate and thus it is unlikely that housing affordability has worsened over time because of property tax increases. It may even have improved, at the margin,

in Ottawa where property taxes have declined in constant dollars per capita over the period.

### **5.1.2 Residential versus Non-Residential Property Taxes**

While it is anticipated that a considerable portion of the residential property tax will be borne by the homeowner, it is important to note that residential property taxes are lower overall because of the differential treatment of residential and non-residential properties in most municipalities. There are three ways in which residential property is favoured relative to non-residential property for the purpose of taxation:

- non-residential properties are generally assessed at a higher percentage of market value than are residential properties;
- the rate of tax on non-residential properties is legislated by most provinces to be higher than the rate on residential properties;
- non-residential properties in most provinces pay an additional business tax (which is levied on the occupants of business property).

All of these factors serve to keep residential property taxes lower than non-residential property taxes. This implicit subsidy from non-residential to residential properties indirectly increases housing affordability relative to what it would be in the absence of this differential treatment.

## 5.2 Provincial-Municipal Transfers<sup>8</sup>

Provincial transfers are also an important source of revenue to municipalities in most provinces. However, they have declined in constant dollars per capita in Vancouver, Edmonton and Calgary over the last ten to twenty years. These grants are financed out of general provincial revenues which are primarily comprised of personal and corporate income taxes and sales taxes.

While the taxes used to finance provincial grants do not directly affect the purchase price of housing or the carrying costs, they do affect how much the municipality raises in property taxes. Municipalities look at their expenditure needs, find out how much they are likely to receive in provincial grants and other revenue sources, and then determine a tax rate. The more they receive in grants, the less they need to raise in property taxes.

The type of grant may also affect the extent to which municipalities raise property taxes. For example, Slack (1980) showed that conditional grants stimulate spending and increase property taxes; unconditional grants stimulate less spending and can result in a reduction in property taxes.

Municipalities in Canada generally receive more conditional transfers than unconditional transfers and this trend is continuing. Unconditional transfers have been declining over time in Vancouver, Edmonton, Calgary, London and Halifax. Property taxes have increased somewhat over the same time period in those cities.

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<sup>8</sup> The words "grant" and "transfer" are used interchangeably in this study.



### 5.3 User Fees

User fees are charged by municipalities for a number of services such as water, sewers, transit, recreational facilities, homes for the aged and other services. User fees are considered desirable on a number of grounds<sup>9</sup>:

- They are fair to the extent that the fee charged is directly related to the benefits received from services.
- They are efficient as long as the fee per unit of service reflects the marginal costs of providing that service.
- They are accountable because the beneficiaries of the service know how much they are paying for the services they consume.

User fees are the fastest growing source of revenue for municipalities in Canada. They have increased in magnitude in all of the cities with the exceptions of Ottawa and Sherbrooke. Given the pressure to keep property taxes down and given the interest in efficiency in the delivery of local government service provision,<sup>10</sup> it is likely that user fees will increase in importance even more in the future.

In terms of the impact of user fees on housing affordability, it is important to differentiate among the different types of fees. For example, fees for water and sewage are compulsory for homeowners. Paying for water and sewers is an essential cost of homeownership whether these charges are levied directly as fees or if they are paid for out of property tax revenues. Thus, to the extent that

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<sup>9</sup> For a thorough discussion of the advantages and disadvantages of charging for public services, see Bird (1976).

<sup>10</sup> See Kitchen (1992).

municipalities charge fees for water and sewers (or for utilities), the monthly carrying costs of homeowners will be directly affected.

On the other hand, user fees for the use of recreational facilities, homes for the aged etc. will not affect monthly carrying costs for homeowners. These services are not related to the use of housing.

To the extent that user fees have to be paid for basic housing-related services, they will affect carrying costs. Since user fees are increasing fairly rapidly in many Canadian municipalities (especially Vancouver and Halifax), it is anticipated that housing affordability may have been reduced. However, to the extent that user fees are being substituted for property taxes, it is less clear what the future impact will be on housing affordability.

#### **5.4 Borrowing**

Municipalities are not permitted to borrow funds to meet current operating expenditures. They can, however, borrow funds to make capital expenditures. The main advantage of borrowing is that those who enjoy the benefits of capital expenditures (for example, the use of a road over the next twenty-five years) are the ones who pay for the costs of the expenditures (through debt charges over the next twenty-five years).

When municipalities borrow funds to pay for capital expenditures, these funds have to be paid back in future years. Depending on the revenues used to pay back these funds, there may or may not be an impact on housing affordability.

For example, if municipalities have a debt charge component in user fees, then there will not be an effect on the purchase price of housing but there may be an effect on carrying costs for housing-related services such as water and sewer fees. This was noted above

for user fees.

If municipalities use future property tax revenues to cover debt charges, then borrowing may affect the price of housing and/or the carrying costs. The degree to which debt charges (as a component of property taxes) will be capitalized is probably smaller than the capitalization of the property taxes themselves. The reason for this conclusion is that a prospective homebuyer is likely to be less knowledgeable about the debt burden of the municipality (and the implication for future property taxes) than about current property taxes.

The use of debt financing is very significant in some municipalities (for example, Edmonton, Calgary and Sherbrooke) but less significant and declining in others (for example, in Ottawa, London and Halifax).<sup>11</sup> Those municipalities that borrow funds and pay them back with future property taxes and user fees will, at the margin, reduce housing affordability for future homeowners.

### **5.5 Private Sector Financing**

Municipalities are increasingly turning to the private sector to pay for needed infrastructure, especially in new developments. In three provinces -- British Columbia, Alberta, and Ontario -- municipalities are permitted to levy development charges on developers of new developments (or, in some cases, redevelopments).<sup>12</sup> While only the data for Alberta identify the

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<sup>11</sup> See Kitchen, Harry M. and N. Enid Slack (1993) Trends in Municipal Finance. (Ottawa: CMHC).

<sup>12</sup> In addition to development charges, municipalities in these and other provinces are permitted to place other charges on developers. For example, parkland dedication provisions require developers to set aside 5 or 10% of their development for parkland or make cash-in-lieu payments to the municipality. In other cases, developers are granted increased densities in return for making payments to the municipality (density bonusing).

revenues collected from development charges for each municipality, we know that Ontario municipalities collected \$378 million in development charges in total in 1992; Alberta municipalities collected \$159 million in total in 1990.

Development charges (also known as lot levies, impact fees and development cost charges) are charges per lot or per acre imposed on developers to finance the off-site costs of development. While they have been around for a long time, they increased in magnitude significantly during the 1980's (see Slack, 1990 for a detailed analysis of development charges). Historically, they have been used to finance the "hard" services such as trunk mains, sewage treatment plants, and roads. They have recently been extended to include the capital costs of city halls, recreation centres, libraries and even schools (in Ontario only).

Development charges are paid initially by the developer/builder but can be borne by new homebuyers, the pre-development landowner, the developer or builder or some combination of them. As with the incidence of other forms of taxation, the incidence of development charges depends on a number of factors such as whether the charge is uniform within housing markets, the supply and demand conditions in the market for new housing, and the timing of the charge in the development process.

A review of the literature on the incidence of development charges leads one to conclude that it is most likely that development charges in Canadian municipalities are passed on, for the most part, to new homebuyers (see Slack and Bird, 1991). This means that the purchase price of new housing is directly affected by development charges.

The development charge is somewhat like a pre-paid property tax. In the case of property taxes, the municipality borrows funds to pay for infrastructure and then passes the costs of the services

(including the costs of borrowing) on to residents in their property taxes. With development charges, the developer pays the development charge up front using borrowed funds (or equity) to finance the cost of services, and then passes the charge onto the homeowners. In the absence of interest-rate differentials, a new homebuyer should be indifferent between a development charge financed over the mortgage period and annual property taxes. However, since new homebuyers face borrowing constraints, an addition to the purchase price of the house up front may mean that (s)he is forced to offer less for the house or buy a more affordable house.

Another major difference between borrowing and development charges is that development charges are only levied on new homebuyers. If funds are borrowed to pay for infrastructure and paid back out of future property taxes, all taxpayers in the municipality bear the burden. This means that carrying costs will rise by a smaller amount for more people.

While development charges are only used by municipalities in three provinces, the magnitude on a particular house can be very large.<sup>13</sup> It is also likely that these charges directly affect the price of new housing and housing affordability.

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<sup>13</sup> In the Greater Toronto Area, for example, development charges of \$20,000 per lot on properties in the \$400,000 range are not uncommon.

## **6. Summary and Conclusions**

The following is a summary of the findings of this paper:

### **6.1 Municipal Financial Trends**

The trends in expenditures indicate that municipal spending to improve the quantity and quality of local services has not increased significantly in constant dollars per capita over the last twenty years. However, the sources of revenues that municipalities use to finance expenditures have changed somewhat over time and this change may have affected housing affordability.

The most important sources of revenue to municipalities in Canada are property taxes and provincial transfers. While property taxes are a large revenue source in all of the cities studied, they have not been increasing much over the last twenty years. Provincial transfers, on the other hand, have declined in three of the seven cities and not increased much in the other four.

In terms of other revenue sources, user fees are still relatively small in comparison to taxes and transfers but they have been growing rapidly, especially in Vancouver and Halifax. The use of borrowing to finance capital expenditures is different in municipalities in different provinces. Only municipalities in three provinces use development charges to finance growth-related capital costs of new development but municipalities in other provinces use other charges on developers as well.

### **6.2 Municipal Finance and Housing Affordability**

Property taxes are likely to reduce housing affordability, at the margin. To the extent that they are not capitalized into property values, property taxes affect monthly carrying costs. However, it is likely that they have worsened affordability only slightly over

the last twenty years because they have shown only a modest increase over the period in five of the seven cities. In Ottawa and Edmonton, property taxes fell over the period.

Development charges can affect the purchase price of the house. While development charges (and other charges on developers) do not represent a substantial source of revenues to municipalities, they have been increasing over the last twenty years. It is anticipated that, at the margin, development charges have worsened housing affordability especially in rapidly growing cities such as Vancouver and Calgary.

To the extent that user fees are charged for housing-related services such as water and sewers, for example, they will also affect monthly carrying costs. User fees have been growing relatively faster than other revenue sources especially in Vancouver and Halifax. However, it has been difficult to isolate the services to which these fees have applied. This means that the impact on housing affordability is uncertain.

### **6.3 Implications of Financial Trends for Housing Affordability**

If we put together the changes in municipal revenues over the last twenty years with the expected impact of alternative revenue sources, we can conclude that, at the margin, housing affordability may have been slightly worsened by recent trends. This finding would be especially true in London and Sherbrooke where property taxes have increased relatively more than in the other cities and in Vancouver and Calgary where development charges are significant.

Increased demands on municipalities to make expenditures coupled with the continuing decline in provincial grants is likely to lead to higher property taxes, user fees and charges on developers in the future. This change in emphasis could, at the margin, worsen housing affordability in the future.

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**APPENDIX: .**  
**TABLES AND FIGURES**

Table A.1: Comparison of Local Government Operating Expenditures  
by Function for Vancouver, 1971-90

Expenditure Function (1)	Per Capita Expend. 1990 (2)	Distrib. 1971 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1971-90 (5)
	(\$)	(%)	(%)	(%)
General Government	81	3.6	6.7	3.8
Protective Services				
Admin of Justice	173	12.8	14.2	1.0
Fire Protection	102	8.2	8.4	0.6
Other	21	1.4	1.7	1.3
Total	296	22.4	24.3	0.9
Transportation Services	176	5.6	14.5	5.6
Environ. Health Serv.				
Solid Waste	56	3.3	4.6	2.2
Other	54	0.0	4.4	--
Total	110	3.3	9.0	6.0
Social Welfare	3	30.6	0.2	-22.8
Public health	73	2.6	6.0	4.9
Environ. Dev. Serv.	28	0.5	2.3	8.7
Recreation & Culture	204	6.8	16.8	5.3
Fiscal Services				
Debt Charges				
Int.-temp. borrow	0	0.2	0.0	-9.4
Int.-debent/LT debt	72	5.7	5.9	0.6
Principle require.	48	5.0	3.9	-0.9
Other	18	0.3	1.4	8.7
Total	138	11.3	11.3	0.4
Tran-Own Accts/Funds				
Reserve Accounts	34	3.7	2.8	-1.1
Gen. Capital Fund	31	6.6	2.6	-4.4
Cond. tran-other govts	40	3.0	3.3	1.1
<b>TOTAL MUNICIPAL EXP.</b>	<b>1217</b>	<b>100.0</b>	<b>100.0</b>	<b>0.4</b>

-- indicates that the expenditure category did not exist over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs,  
Municipal Statistics (various years).

Table A.2: Comparison of Local Government Operating Revenues  
by Source for Vancouver, 1971-90

Revenue Source (1)	Per Capita Revenue 1990 (2)	Distrib. 1971 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1971-90 (5)
	(\$)	(%)	(%)	(%)
Property Tax				
Real Property	548	39.7	44.2	1.5
Special Assessment	0	1.7	0.0	--
Business Tax	0	7.2	0.0	--
Other	25	0.0	2.0	--
Total	573	48.6	46.3	0.6
Payments-in-Lieu	35	2.9	2.9	0.6
User Fees	152	1.8	12.3	12.0
Grants				
Unconditional	50	11.4	4.0	-4.7
Conditional	64	27.1	5.2	-8.0
Total	114	38.4	9.2	-6.9
Transfers from other Funds	173	1.7	14.0	16.8
Other Revenue	190	6.5	15.3	5.8
<b>TOTAL REVENUE</b>	<b>1239</b>	<b>100.0</b>	<b>100.0</b>	<b>0.9</b>

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs, Municipal Statistics (various years).

Table A.3: Comparison of Local Government Operating Expenditures  
by Function for Edmonton, 1980-90

Expenditure Function (1)	Per Capita Expend. 1990 (2)	Distrib. 1980 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1980-90 (5)
	(\$)	(%)	(%)	(%)
General Government	125	16.6	4.9	-9.1
Protection				
Fire	105	5.0	4.1	0.8
Police	151	7.4	5.9	0.4
Other	30	0.9	1.2	5.1
Total	286	13.4	11.2	0.9
Transportation				
Com. Ser./equip pool	164	0.0	6.4	--
Streets, walks, light	174	5.4	6.8	5.0
Public Transit	196	9.7	7.7	0.3
Airport	13	1.0	0.5	-4.2
Total	546	16.1	21.4	5.6
Environmental health				
Sewers	122	0.7	4.8	25.3
Water	129	5.3	5.0	2.3
Solid Waste	38	2.1	1.5	-0.9
Total	289	8.0	11.3	6.2
Social Services	29	2.1	1.1	-3.2
Public health	0	0.0	0.0	0.0
Environmental Dev.				
Mun. Plan, zoning dev	26	0.0	1.0	--
Subdiv. land & dev	60	0.0	2.4	--
Public Housing	8	0.4	0.3	0.3
Other	34	0.1	1.3	32.2
Total	128	0.5	5.0	29.3
Recreation and Culture	166	9.0	6.5	-0.6
Electricity	592	17.4	23.1	5.7
Telephone	397	16.9	15.5	1.8
<b>GRAND TOTAL</b>	<b>2558</b>	<b>100.0</b>	<b>100.0</b>	<b>2.7</b>

-- indicates that the expenditure category did not exist over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs,  
Municipal Statistics (various years).

Table A.4: Comparison of Local Government Operating Revenues  
by Source for Edmonton, 1980-90

Revenue Source (1)	Per Capita Revenue 1990 (2)	Distrib. 1980 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1980-90 (5)
	(\$)	(%)	(%)	(%)
Net Municipal Taxes*	486	24.9	18.7	-0.1
Grants				
Unconditional	81	7.6	3.1	-3.5
Conditional	60	5.7	2.3	-3.5
Total	141	13.4	5.4	-3.5
User Fees				
General Govt.	11	3.7	0.4	-9.7
Protection	12	0.0	0.5	--
Public Transit	66	4.0	2.5	1.2
Airport	18	0.0	0.7	--
Roads	3	0.0	0.1	--
Sewers	61	2.8	2.3	0.4
Water	137	5.5	5.3	1.2
Solid Waste	6	0.0	0.2	--
Social Services	0	0.0	0.0	--
Environ. Dev.	72	0.0	2.8	--
Rec. & Cult.	34	0.0	1.3	--
Electricity	584	19.1	22.4	2.4
Telephone	430	17.8	16.5	1.1
Total	1434	54.0	55.1	1.6
Other Revenues	539	7.8	20.0	7.1
<b>TOTAL REVENUES</b>	<b>2600</b>	<b>100.0</b>	<b>100.0</b>	<b>1.5</b>

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

\* property taxes and payments-in-lieu of property taxes requisitioned for school and other purposes are subtracted from total property taxes and payments-in-lieu to yield net municipal taxes.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs, Municipal Statistics (various years).

Table A.5: Comparison of Local Government Operating Expenditures  
by Function for Calgary, 1980-90

Expenditure Function (1)	Per Capita Expend. 1990 (2)	Distrib. 1980 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1980-90 (5)
	(\$)	(%)	(%)	(%)
General Government	202	20.9	10.2	-5.4
Protection				
-Fire	102	5.5	5.2	0.9
-Police	145	7.6	7.4	1.2
-Other	17	1.8	0.8	-6.0
Total	263	15.0	13.4	0.4
Transportation				
-Com. Ser./equip pool	71	5.9	3.6	-3.3
-Streets, walks, light	183	5.4	9.3	7.2
-Public Transit	183	8.8	9.3	2.2
Total	438	20.1	22.2	2.6
Environmental health				
-Sewers	91	3.1	4.6	5.9
-Water	113	5.3	5.7	2.4
-Solid Waste	31	2.1	1.6	-1.3
Total	235	10.5	12.0	3.0
Social Services	44	2.8	2.2	-0.7
Public health	0	0.2	0.0	--
Environmental Dev.				
-Mun. Plan, zone dev	26	0.0	1.3	--
-Subdiv. land & dev	40	0.0	2.0	--
-Public Housing	27	0.2	1.4	22.1
-Other	12	1.0	0.6	-2.7
Total	105	1.2	5.3	18.0
Rec. and Culture	163	6.2	8.3	4.6
Electricity	481	23.2	24.4	2.1
Other	35	0.0	1.8	--
GRAND TOTAL	1967	100.0	100.0	1.6

-- indicates that the expenditure category did not exist over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs,  
Municipal Statistics (various years).

Table A.6: Comparison of Local Government Operating Revenues  
by Source for Calgary, 1980-90

Revenue Source (1)	Per Capita Revenues 1990 (2)	Distrib. 1980 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1980-90 (5)
	(\$)	(%)	(%)	(%)
Net Municipal Taxes*	559	30.3	28.2	0.4
Grants				
Unconditional	79	7.3	4.0	-2.5
Conditional	79	7.5	4.0	-2.6
Total	158	14.8	8.0	-2.6
User Fees				
General Govt.	3	1.6	0.2	-10.7
Protection	8	0.0	0.4	--
Public Transit	57	3.9	2.9	-0.7
Roads	14	0.0	0.7	--
Sewers	84	3.1	4.2	2.6
Water	117	5.5	5.9	1.2
Solid Waste	8	0.8	0.4	-2.5
Social Services	2	0.0	0.1	--
Environ. Dev.	46	0.0	2.3	--
Rec. & Cult.	22	0.8	1.1	2.6
Electricity	505	23.7	25.5	1.3
Total	867	39.3	43.8	1.4
Other Revenues	396	15.5	20.0	2.3
<b>TOTAL REVENUES</b>	<b>1980</b>	<b>100.0</b>	<b>100.0</b>	<b>0.8</b>

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

\* property taxes and payments-in-lieu of property taxes requisitioned for school and other purposes are subtracted from total property taxes and payments-in-lieu to yield net municipal taxes.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs, Municipal Statistics (various years).



Table A.7: Comparison of Local Government Operating Expenditures  
by Function for London, 1977-90

Expenditure Function (1)	Per Capita Expend. 1990 (2)	Distrib. 1977 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1977-90 (5)
	(\$)	(%)	(%)	(%)
General Government	100	8.5	8.8	2.4
Protection				
- fire	74	7.3	6.5	1.2
- police	112	11.4	9.9	1.0
- other	18	1.2	1.6	4.6
- total	205	20.0	18.0	1.4
Transportation				
- roads	108	11.8	9.5	0.5
- transit	101	8.1	8.9	2.9
- other	13	1.7	1.2	-0.6
- total	222	21.5	19.6	1.4
Environment				
- sewer	77	6.1	6.8	3.0
- water	89	7.9	7.8	2.1
- garbage	43	8.5	3.7	-4.0
- total	209	22.5	18.4	0.6
Health	36	3.5	3.2	1.4
Social Services	226	11.7	19.9	6.5
Recreation and Culture				
- parks and recreation	56	6.2	4.9	0.4
- libraries	45	4.1	4.0	2.0
- total	101	10.3	8.9	1.1
Planning and Development	38	2.1	3.3	6.0
<b>TOTAL OPERATING EXP.</b>	<b>1137</b>	<b>100.0</b>	<b>100.0</b>	<b>2.2</b>

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs,  
Municipal Financial Information (various years).

Table A.8: Comparison of Local Government Operating Revenues  
by Source for London, 1977-90

Revenue Source (1)	Per Capita Revenue 1990 (2)	Distrib. 1977 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1977-90 (5)
	(\$)	(%)	(%)	(%)
<b>Taxation</b>				
Property Taxes	485	46.4	43.2	1.6
Water/Sewer Billings	83	6.2	7.4	3.6
Total	568	52.7	50.6	1.8
Payments-in-Lieu	29	5.0	2.6	-2.8
<b>Grants</b>				
Unconditional	90	13.2	8.0	-1.7
Conditional	234	14.9	20.9	4.9
Total	324	28.1	28.9	2.3
<b>User Fees</b>				
Transportation	58	5.9	5.2	1.2
Social Services	14	1.5	1.2	0.7
Rec. & Cult.	0	1.9	0.0	--
Other	62	0.6	5.5	22.0
Total	134	10.0	11.9	3.6
Other Revenues	68	4.2	6.0	5.4
<b>TOTAL REVENUES</b>	<b>1123</b>	<b>100.0</b>	<b>100.0</b>	<b>2.2</b>

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs, Municipal Financial Information (various years).

Table A.9: Comparison of Local Government Operating Expenditures  
by Function for Ottawa, 1977-90

Expenditure Function (1)	Per Capita Expend. 1990 (2)	Distrib. 1977 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1977-90 (5)
	(\$)	(%)	(%)	(%)
General Government	163	19.7	15.7	-1.8
Protection				
- fire	144	11.0	13.9	1.7
- police	192	15.7	18.4	1.1
- other	33	2.0	3.2	3.6
- total	369	28.7	35.5	1.5
Transportation				
- roads	97	15.8	9.3	-4.1
- other	40	2.5	3.8	3.3
- total	137	18.3	13.1	-2.6
Environment				
- sewer	78	4.4	7.5	4.0
- water	0	0.1	0.0	--
- garbage	32	2.0	3.1	3.3
- total	111	6.6	10.7	3.7
Health	0	1.0	0.0	--
Social Services	6	2.9	0.6	-11.7
Recreation and Culture				
- parks and recreation	128	13.1	12.3	-0.6
- libraries	52	3.9	5.0	1.8
- total	179	17.0	17.2	-0.0
Planning and Development	75	5.9	7.2	1.4
<b>TOTAL OPERATING EXP.</b>	<b>1040</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.1</b>

-- indicates that the expenditure category did not exist over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs,  
Municipal Financial Information (various years).

Table A.10: Comparison of Local Government Operating Revenues  
by Source for Ottawa, 1977-90

Revenue Source (1)	Per Capita Revenues 1990 (2)	Distrib. 1977 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1977-90 (5)
	(\$)	(%)	(%)	(%)
<b>Taxation</b>				
Property Taxes	324	35.7	31.0	-1.1
Water/Sewer Billings	46	1.1	4.5	11.3
Total	370	36.8	35.5	-0.3
Payments-in-Lieu	338	30.6	32.4	0.4
<b>Grants</b>				
Unconditional	65	4.6	6.2	2.4
Conditional	28	4.2	2.7	-3.3
Total	93	8.7	8.9	0.0
Other Specific Grants	0	7.2	0.0	--
<b>User Fees</b>				
Protection	n.a.	0.4	n.a.	n.a.
Transportation	n.a.	2.5	n.a.	n.a.
Social Services	n.a.	0.0	n.a.	n.a.
Rec. & Cult.	n.a.	1.3	n.a.	n.a.
Other	69	0.0	6.6	--
Total	69	8.6	6.6	-2.0
Other Revenues	158	8.0	15.4	5.0
<b>TOTAL REVENUES</b>	<b>1044</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.1</b>

n.a. not available

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Ministry of Municipal Affairs, Municipal Financial Information (various years).

Table A.11: Comparison of Local Government Operating Expenditures  
by Function for Sherbrooke, 1982-91

Expenditure Function (1)	Per Capita Expend. 1991 (2)	Distrib. 1982 (3)	Distrib. 1991 (4)	Av. Annual Growth in Constant \$ Per Capita 1982-91 (5)
	(\$)	(%)	(%)	(%)
General Government	192	14.9	14.4	2.8
Protection				
-Police	145	12.4	10.9	1.3
-Fire	105	10.0	7.8	0.5
Total	250	22.4	18.7	1.0
Transportation				
-Municipal Roads	170	14.7	12.8	0.8
-Public Transportation	21	0.7	1.6	10.3
Total	192	15.4	14.4	1.4
Environmental Health Serv.				
-Water & Sewer	75	3.4	5.6	2.4
-Garbage Removal & Disposal	27	3.1	2.1	0.1
Total	102	6.5	7.6	1.3
Health & Welfare	3	0.3	0.2	-1.5
Urban Planning & Reg. Dev.				
-Housing (Urban Planning & Zoning)	27	1.2	2.0	10.3
-Economic Promotion & Dev.	34	1.0	2.6	12.5
-Municipal Housing Office	5	0.5	0.4	-0.0
-Airport	1	0.1	0.1	2.9
Total	67	2.8	5.1	9.6
Recreation & Cultural Serv.	113	7.6	8.5	4.1
Financing Costs Borne by:				
-City (debt service)	322	18.8	24.1	4.9
-Quebec Govt. (debt service)	14	0.0	1.1	--
-Other	80	11.3	6.0	-5.0
Total	336	30.1	25.2	0.2
TOTAL	1335	100.0	100.0	2.4

-- indicates that the expenditure category did not exist over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Annual Reports for the City of Sherbrooke (various years).

Table A.12: Comparison of Local Government Operating Revenues  
by Source for Sherbrooke, 1982-91

Revenue Source (1)	Per Capita Revenues 1991 (2)	Distrib. 1982 (3)	Distrib. 1991 (4)	Av. Annual Growth in Constant \$ Per Capita 1982-91 (5)
	(\$)	(%)	(%)	(%)
<b>Taxation</b>				
General	474	41.0	40.0	0.3
Local Apportionment	44	3.5	3.7	0.7
Water	67	5.1	5.6	1.1
Sewers	54	0.0	4.6	--
Garbage	29	3.8	2.5	-2.0
Business Tax	111	5.2	9.3	3.8
Other	1	0.0	0.1	--
<b>Total</b>	<b>780</b>	<b>58.6</b>	<b>65.9</b>	<b>1.0</b>
<b>Payments-in-Lieu</b>	<b>168</b>	<b>16.3</b>	<b>14.2</b>	<b>-0.5</b>
<b>User Fees</b>				
Recreation	10	0.9	0.8	0.7
Parking & Meters	6	0.4	0.5	0.0
Recoveries	23	5.3	1.9	-6.8
<b>Total</b>	<b>39</b>	<b>6.6</b>	<b>3.3</b>	<b>-4.5</b>
<b>Grants</b>				
Unconditional	0	0.0	0.0	0.0
Conditional	19	1.0	1.6	4.2
<b>Total</b>	<b>19</b>	<b>1.0</b>	<b>1.6</b>	<b>4.2</b>
<b>Rev. from Services Provided to other Municipalities</b>	<b>38</b>	<b>1.2</b>	<b>3.2</b>	<b>5.7</b>
<b>Other Revenues</b>	<b>140</b>	<b>16.4</b>	<b>11.8</b>	<b>-3.5</b>
<b>TOTAL REVENUE</b>	<b>1184</b>	<b>100.0</b>	<b>100.0</b>	<b>0.1</b>

-- indicates that the revenue source was not used over the entire period; hence, average annual growth rates are not calculated.

SOURCE: Derived or calculated from data in Annual Reports for the City of Sherbrooke (various years).

Table A.13: Comparison of Local Government Operating Expenditures  
by Function for Halifax, 1972-90

Expenditure Function (1)	Per Capita Expend. 1990 (2) (\$)	Distrib. 1972 (3) (%)	Distrib. 1990 (4) (%)	Av. Annual Growth in Constant \$ Per Capita 1972-90 (5) (%)
General Government	127	6.3	7.5	1.9
Protection				
-Fire	136	8.0	8.0	0.9
-Police	166	6.6	9.8	3.1
-Other	15	0.9	0.9	0.7
Total	317	15.4	18.7	1.9
Transportation				
-Common Services	56	3.2	3.3	1.0
-Road	64	5.7	3.8	-1.4
Total	120	8.9	7.1	-0.4
Environmental Health Serv.				
-Sewage Collect & Disposal	16	0.8	1.0	2.2
-Solid waste coll & Disp.	9	1.9	0.6	-5.8
Total	26	2.7	1.5	-2.2
Health	5	0.5	0.3	-2.0
Social Welfare	324	11.3	19.1	3.9
Environment Dev. Serv.	35	1.2	2.0	3.7
Rec. & Culture	80	2.5	4.7	4.4
Fiscal Services				
-Debt Charges	98	12.5	5.8	-3.4
-Transfers-own reserves	74	33.7	4.3	-10.0
-Uncond. trans-other govt.	3	0.1	0.2	2.8
-Cond. trans-other govt.	490	4.8	28.9	11.5
Total	665	51.1	39.2	-0.6
<b>TOTAL</b>	<b>1699</b>	<b>100.0</b>	<b>100.0</b>	<b>0.9</b>

SOURCE: Derived or calculated from data in Department of Municipal Affairs,  
Annual Report of Municipal Statistics (various years).

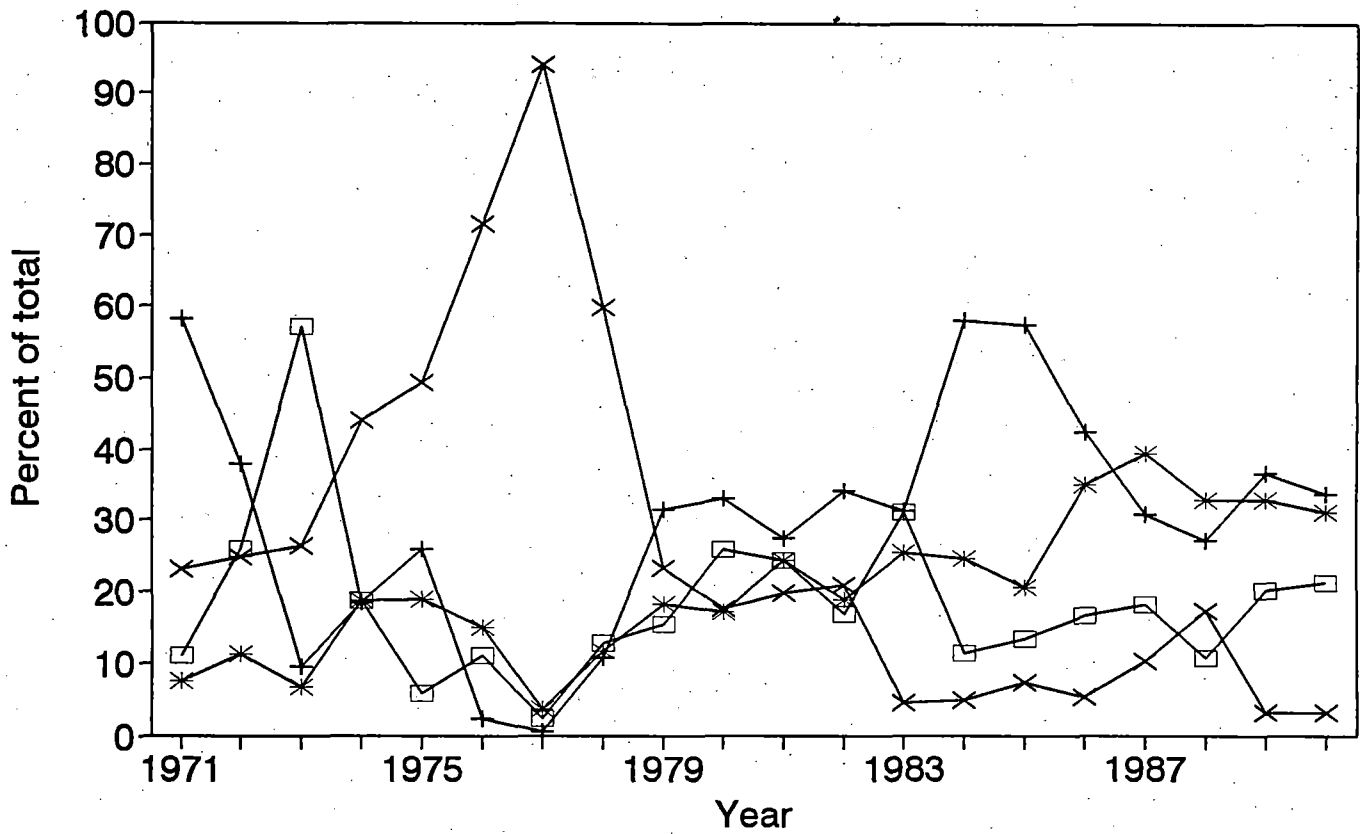
Table A.14: Comparison of Local Government Operating Revenues  
by Source for Halifax, 1972-90

Revenue Source (1)	Per Capita Revenues 1990 (2)	Distrib. 1972 (3)	Distrib. 1990 (4)	Av. Annual Growth in Constant \$ Per Capita 1972-90 (5)
	(\$)	(%)	(%)	(%)
<b>Property Tax</b>				
Real Property	893	54.6	52.9	0.5
Business Tax	173	8.9	10.3	1.4
Other	39	2.2	2.2	0.7
Total	1105	65.7	65.4	0.6
Payments-in-Lieu	149	9.1	8.8	0.5
<b>User Fees</b>				
Transportation	17	0.8	1.0	1.9
Other	23	0.1	1.4	13.6
Total	40	0.9	2.4	6.0
<b>Grants</b>				
Unconditional	1	6.5	0.1	-21.8
Conditional	250	9.6	14.8	3.1
Total	251	16.1	14.9	0.2
<b>Other Revenue</b>				
Collected for other Local Govts.	17	2.9	1.0	-5.3
Other Revenues	127	5.2	7.5	2.7
<b>TOTAL REVENUE</b>	<b>1689</b>	<b>100.0</b>	<b>100.0</b>	<b>0.6</b>

SOURCE: Derived or calculated from data in Department of Municipal Affairs,  
Annual Report of Municipal Statistics (various years).

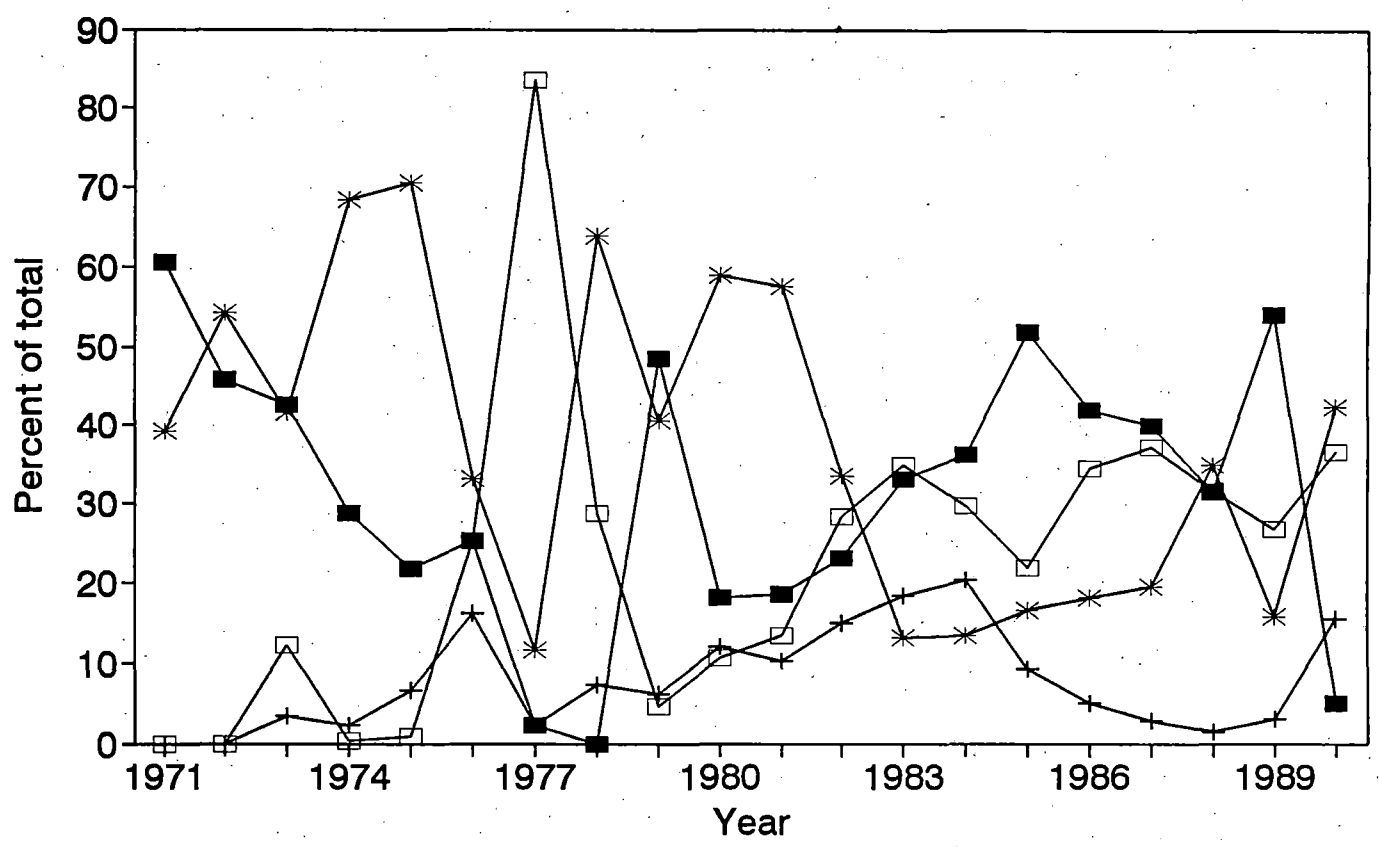


Fig. A.1: Distribution of Capital Expenditures for Vancouver, 1971-90



—+— Transportation    —\*— Environment    —□— Rec. & Cult.    —x— Other

Fig. A.2: Distribution of Capital Rev. by Source for Vancouver, 1971-90



L.T. Debt     
  + Prov/Fed Tran     
  \* Operat. Rev. &     
  Other

Fig. A.3: Distribution of Capital Expenditures for Edmonton, 1980-90

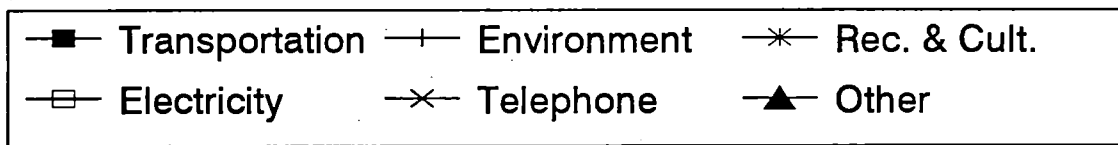
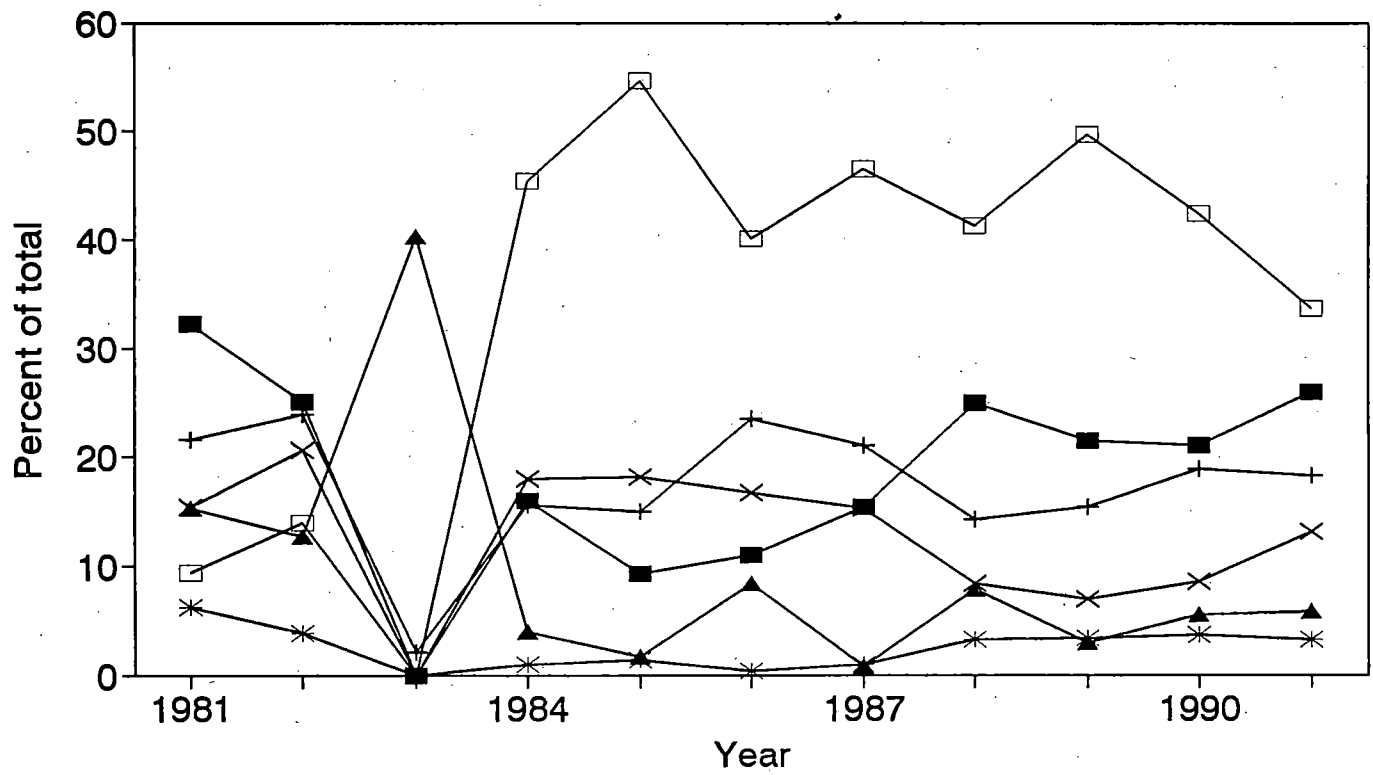
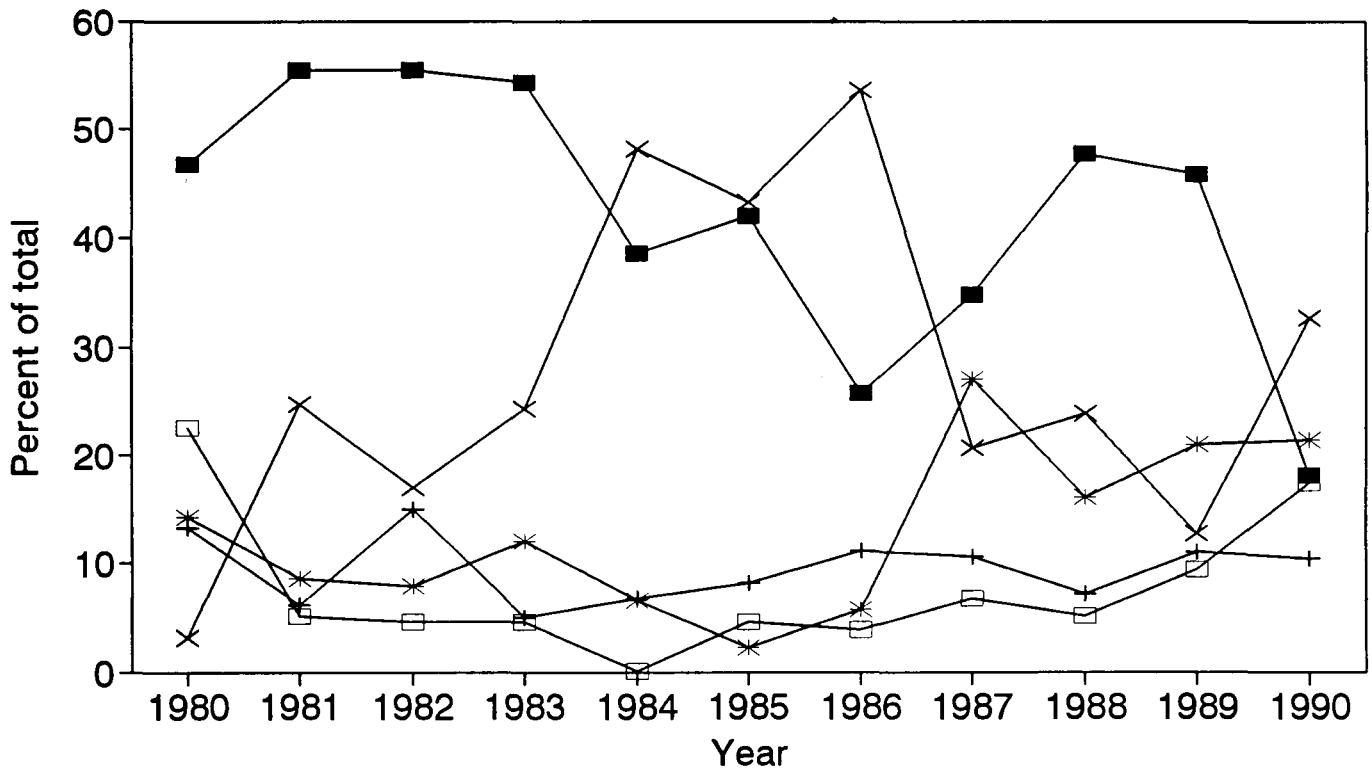


Fig. A.4: Distribution of Capital Rev. by Source for Edmonton, 1980-90



- L.T. Debt
- +— Capital Grants
- \*— Operat. Rev. & Res.
- Development Charge
- x— Other

Fig. A.5: Distribution of Capital Expenditures for Calgary, 1980-90

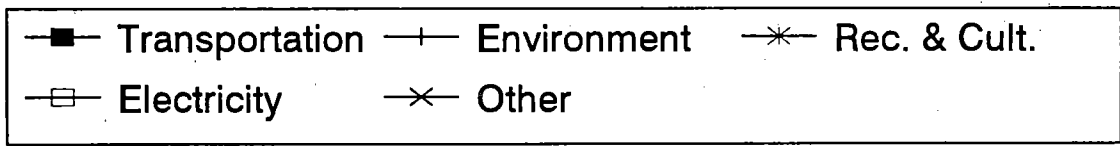
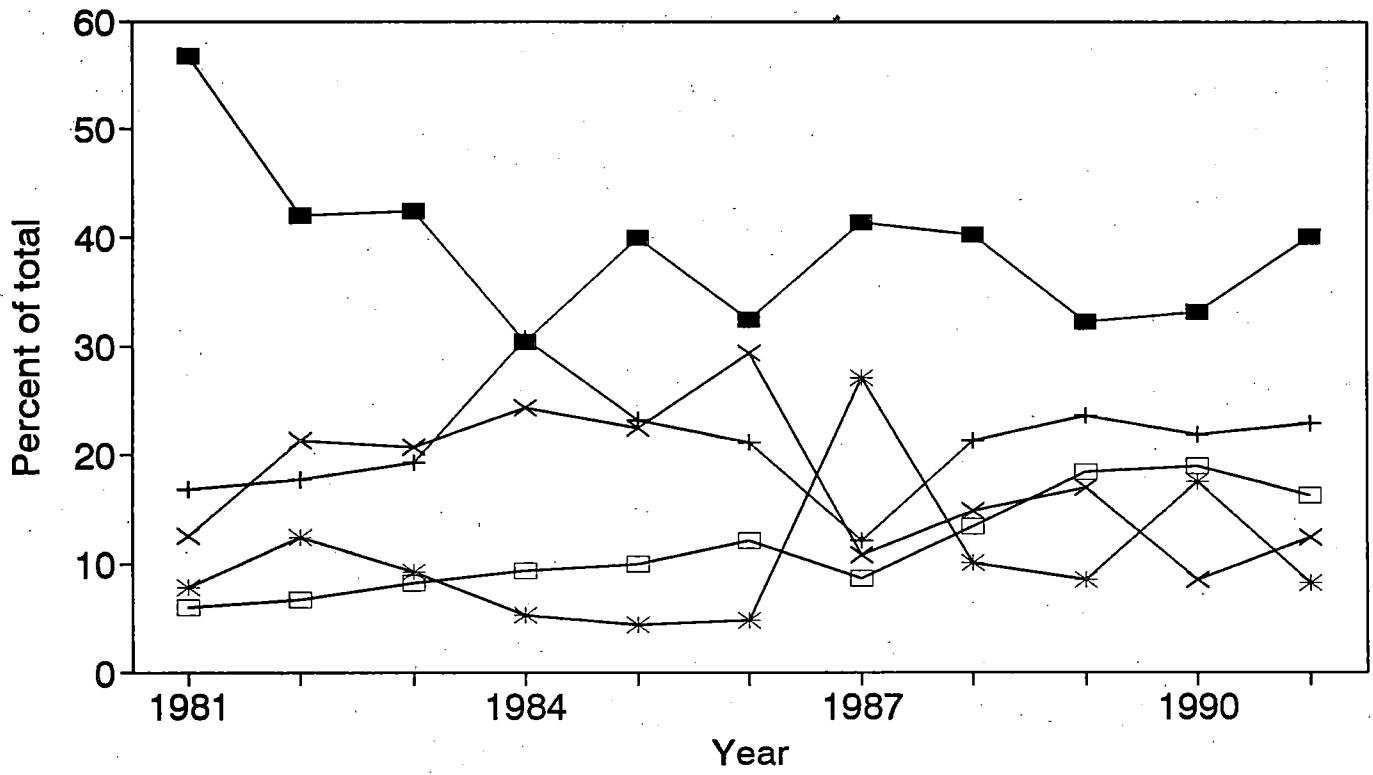


Fig. A.6: Distribution of Capital Rev. by Source for Calgary, 1980-90

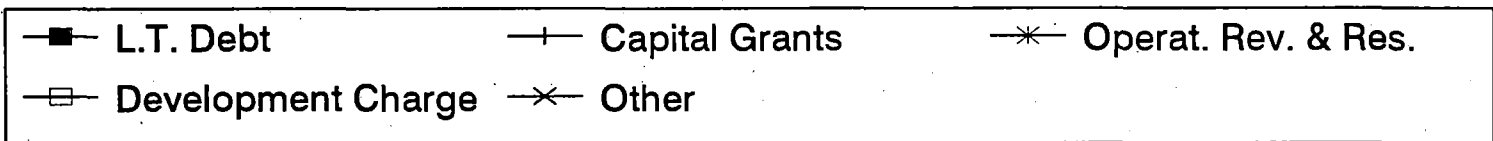
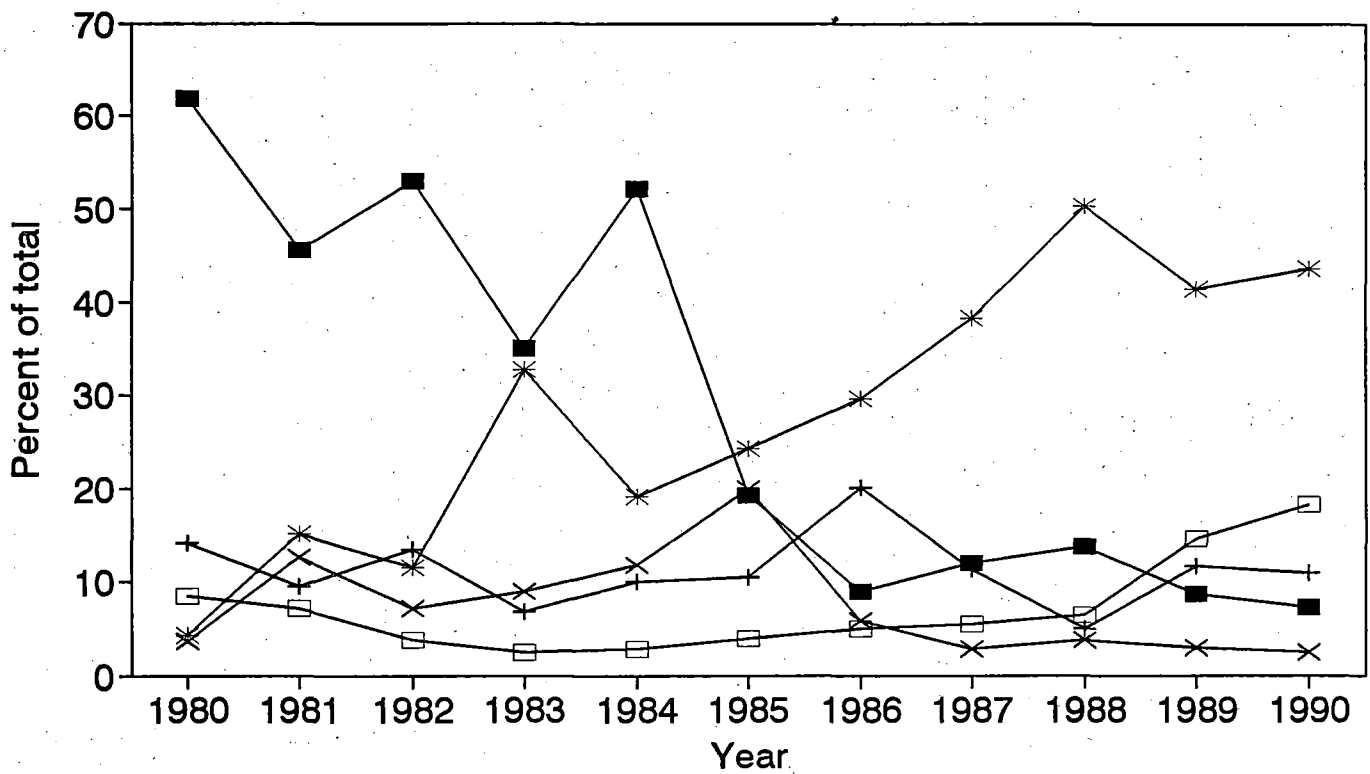


Fig. A.7: Distribution of Capital Expenditures for London, 1978-90

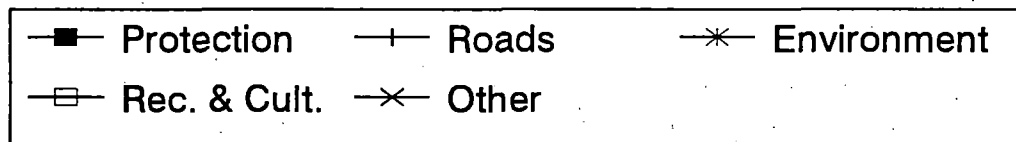
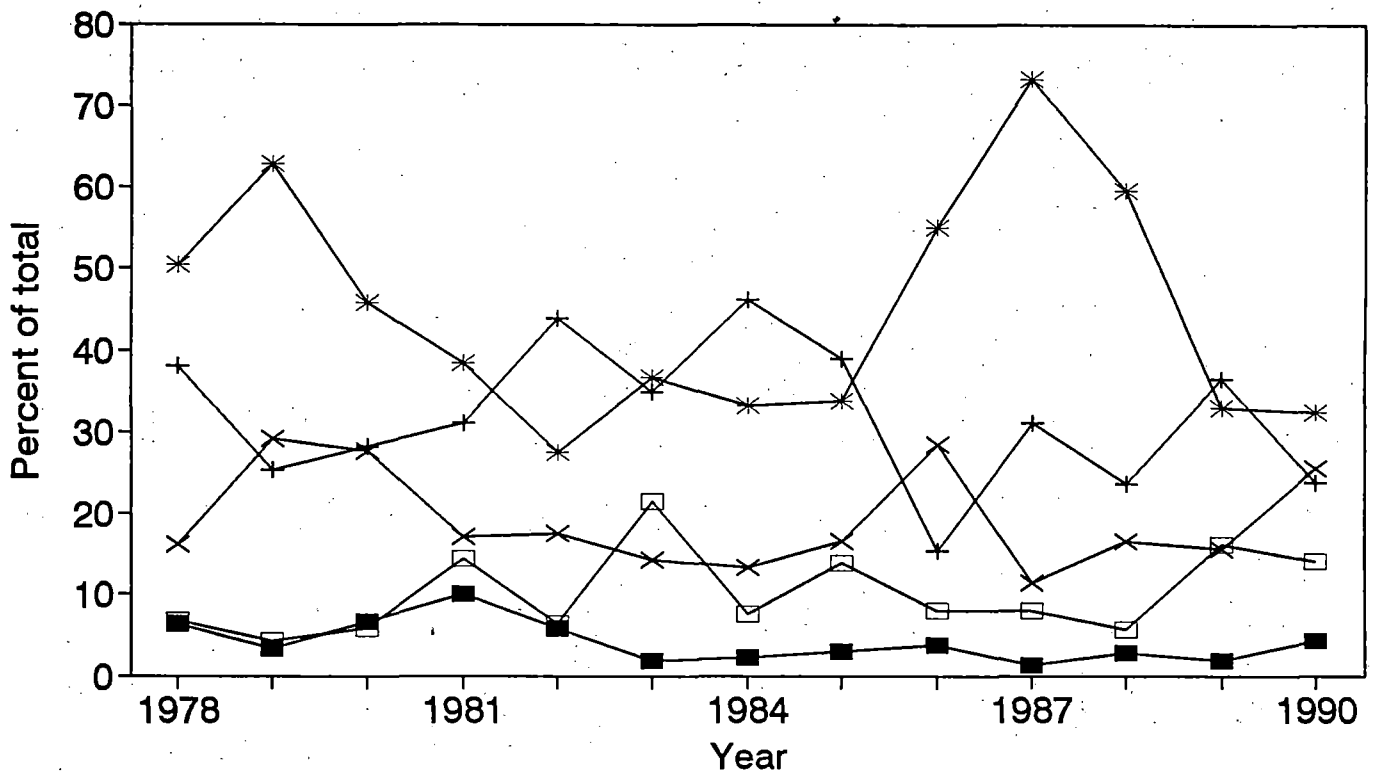
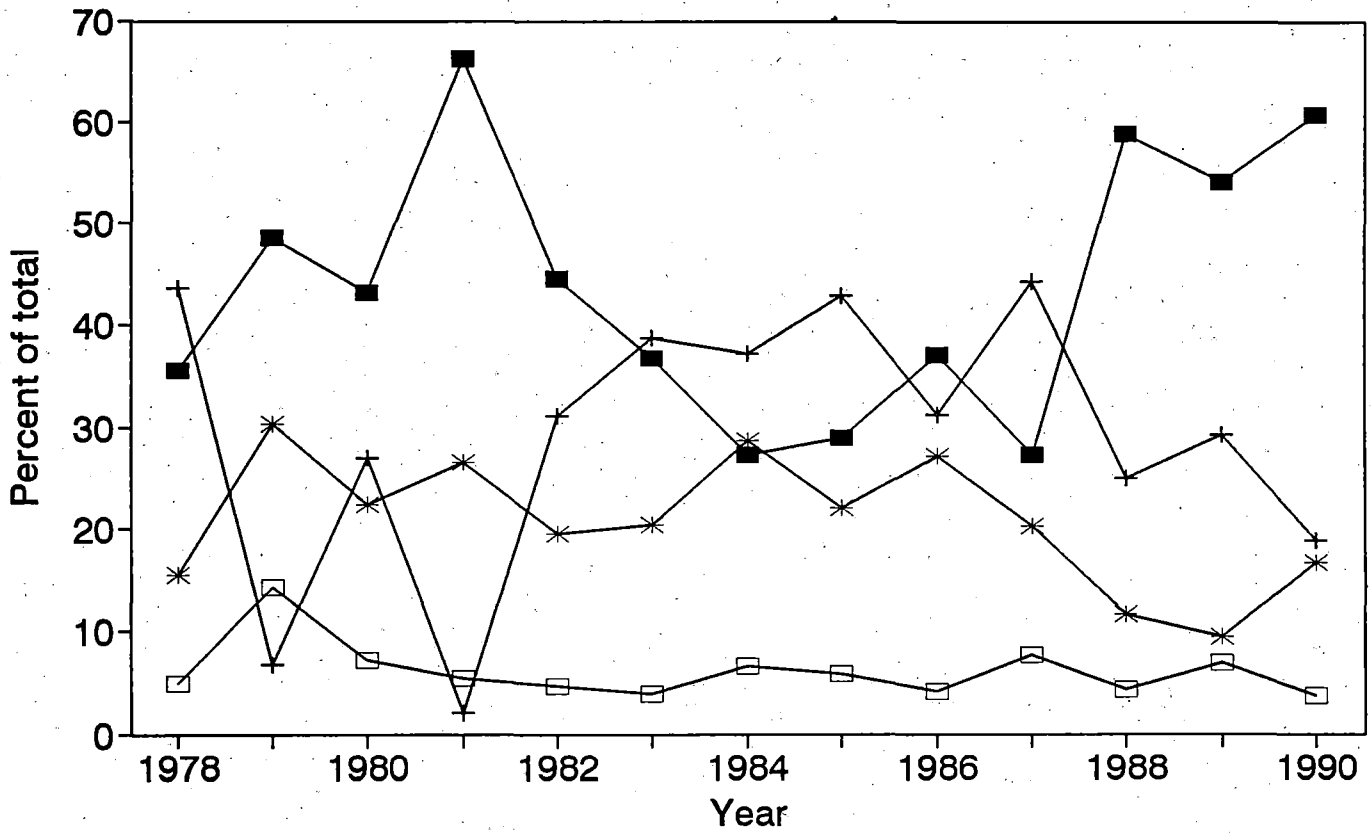


Fig. A.8: Distribution of Capital Rev. by Source for London, 1978-90



Operat. Rev. &
  L. T. Debt
  Fed/Prov Tran
  Other



Fig A.9: Distribution of Capital Expenditures for Ottawa, 1977-90

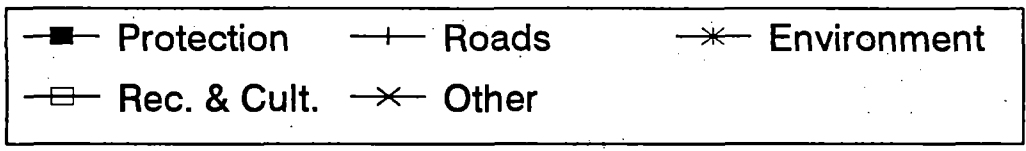
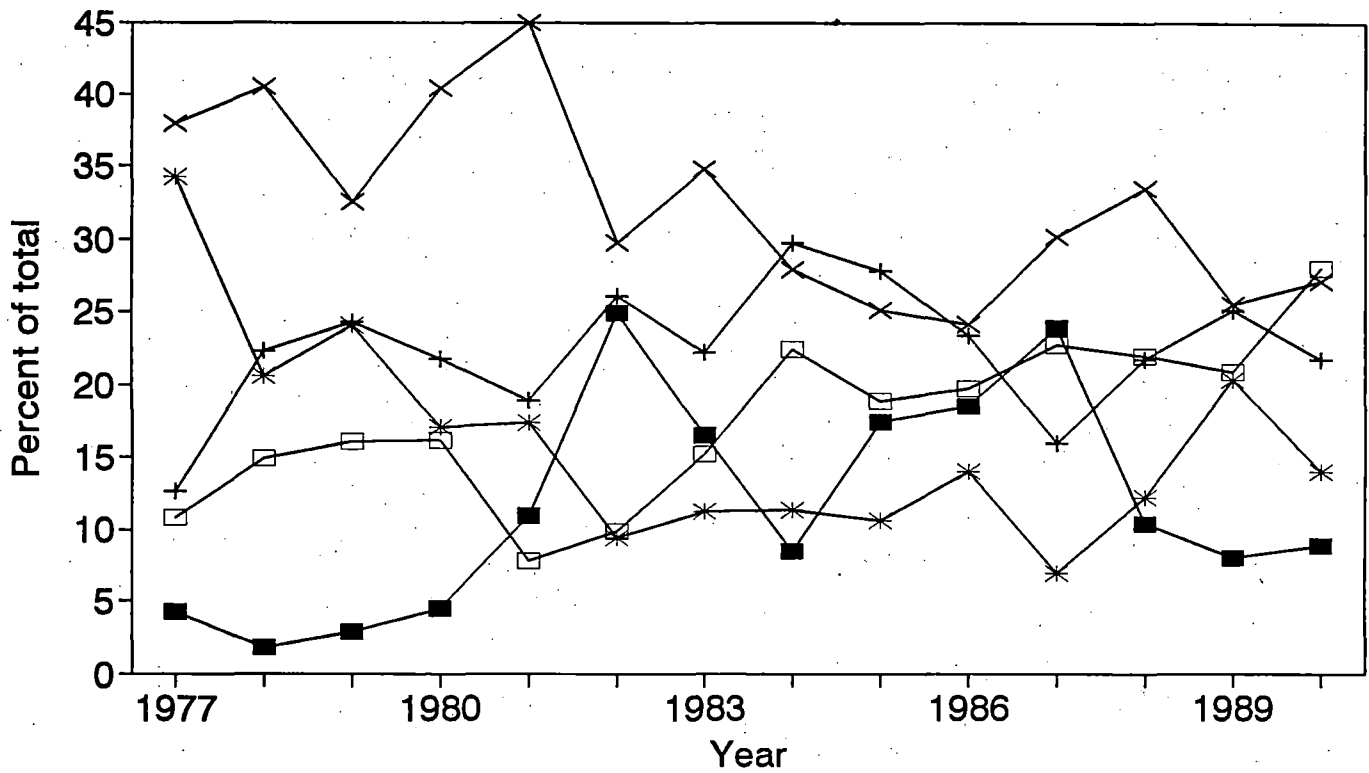
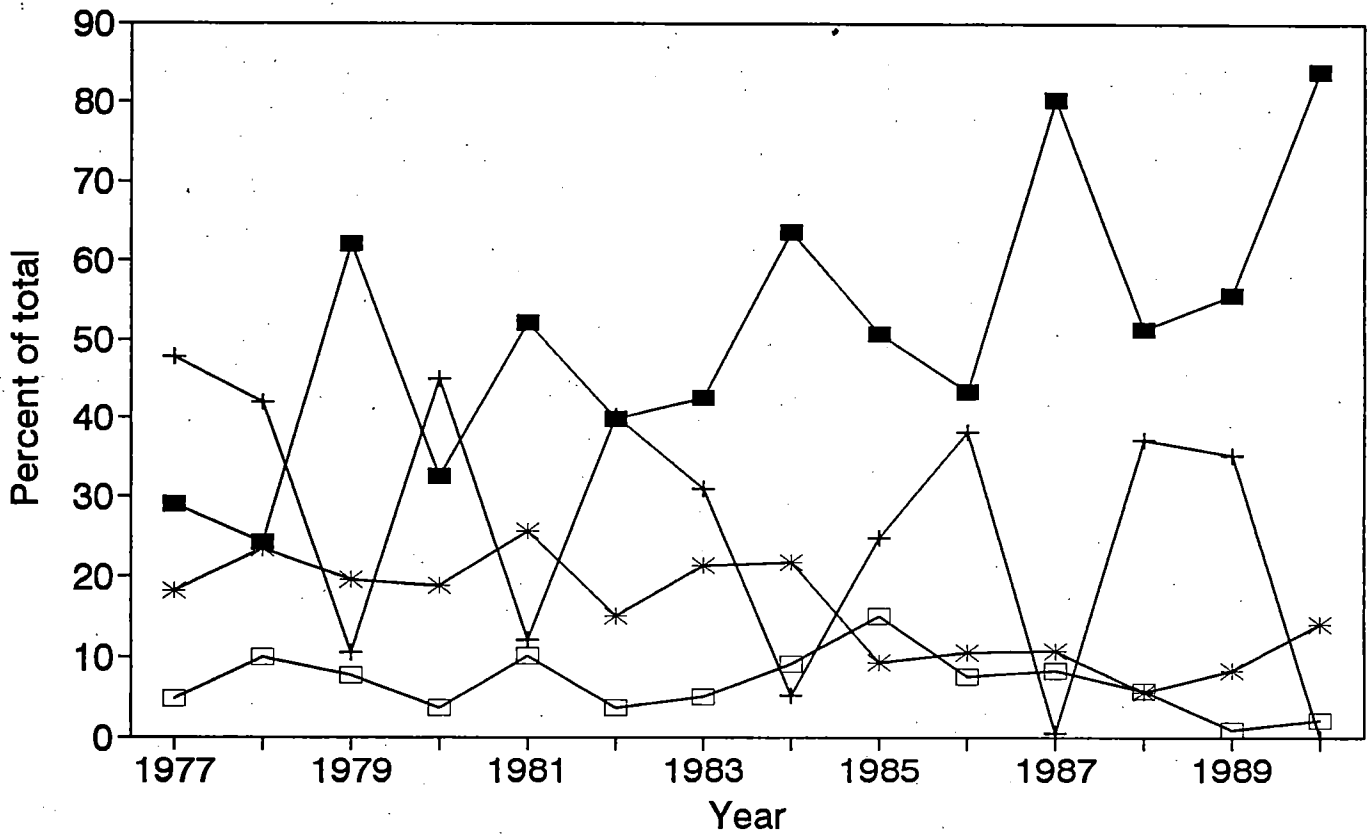


Fig. A.10: Distribution of Capital Rev. by Source for Ottawa, 1977-90



Operat. Rev. &
  L. T. Debt
  Fed/Prov Tran
  Other

Fig A.11: Distribution of Capital Expenditures for Halifax, 1972-90

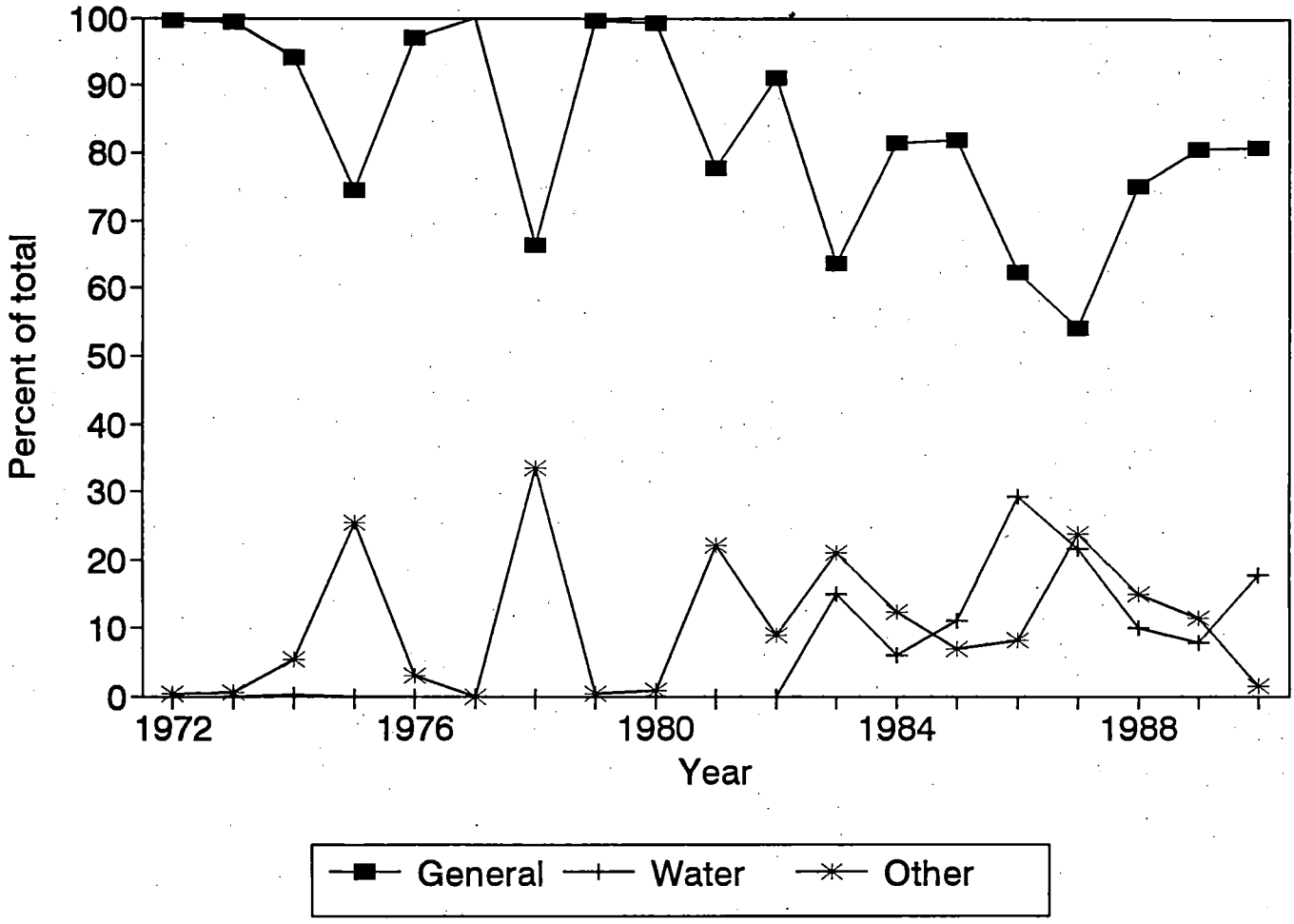
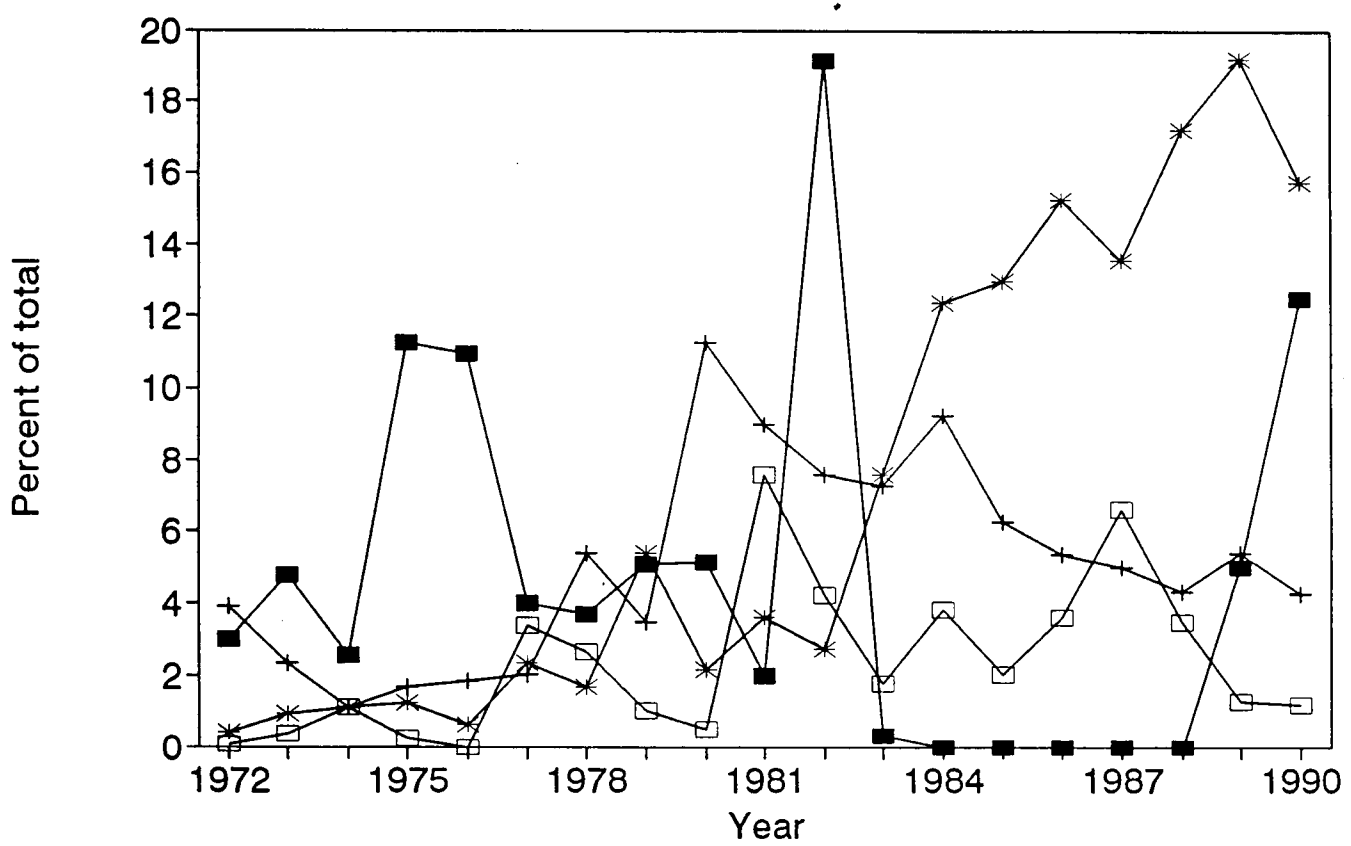


Fig. A.12: Distribution of Capital Rev. by Source for Halifax, 1971-90



L. T. Debt     
  + Fed/prov trans     
  \* Operat. Rev.     
  Other