

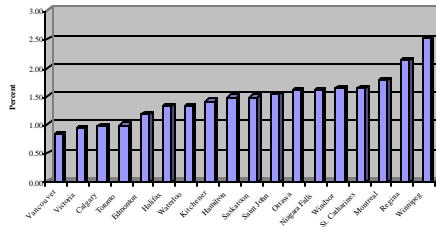


No. 9

# WINNIPEG'S NUMBER ONE

## A COMPARISON OF EFFECTIVE RESIDENTIAL PROPERTY TAX LEVELS IN NORTH AMERICA

Effective Property Tax Rates, Two-Storey House,  
Selected Cities, 2000



JULY 2001

By Peter Holle

ISSN 1491-7874

**Policy Series** - Frontier Centre studies and reports exploring topics on the frontier of public policy.

WINNIEG'S NUMBER ONE- A COMPARISON OF EFFECTIVE RESIDENTIAL PROPERTY TAX LEVELS IN NORTH AMERICA

Copyright © 2001 by the Frontier Centre for Public Policy

Date of Issue: July 2001

ISSN 1491-7874



The Frontier Centre for Public Policy is an independent, non-profit organization that undertakes research and education in support of economic growth and social outcomes that will enhance the quality of life in our communities. Through a variety of publications and public forums, the Centre explores policy innovations required to make the eastern prairies region a winner in the new economy. It also provides new insights into solving important issues facing our cities, towns and provinces. These include improving the performance of public expenditures in important areas like local government, education, health and social policy. It is located at 63 Albert Street, Suite 201, Winnipeg, Manitoba, Canada R3B 1G4. For more information visit [www.fcpp.org](http://www.fcpp.org).

#### **About the Author**

Peter Holle is the President of the Frontier Centre for Public Policy. He has been closely involved with public sector reform over his career and has provided advisory services to various governments across Canada and the United States. As a senior policy advisor during the 1980s he was closely involved with regulatory reform and the privatization of government services and assets in Saskatchewan. He was executive director of the Manitoba Taxpayers Association from 1993 to 1995. He has a Masters of Business Administration from the University of Wisconsin at Madison.

He wishes to acknowledge the assistance advice of Professor Harry Kitchen of Trent University in Peterborough, Ontario.

# Winnipeg's Number One

A Comparison of Effective Residential Property Tax Levels in North America

EXECUTIVE SUMMARY	1
1. INTRODUCTION	2
Effective Property Tax Rates	2
2. MEASURING THE BURDEN OF RESIDENTIAL PROPERTY TAXES	3
Winnipeg's effective residential property tax rates highest	3
Effective property tax rates rose between 1996 and 2000	4
Effective property tax rate substantially higher than U.S. cities	4
Property taxes on standard house higher than most Canadian cities	5
Property taxes per square foot relatively high	8
Highest property taxes relative to income	9
Winnipeg's shelter costs slightly less than the Canadian average	10
3. PROPERTY TAXES RELATIVE TO OTHER REVENUE SOURCES	10
Property taxes falling relative to other revenue sources in Manitoba.	10
No strong relationship between U.S. property taxes and other taxes	12
4. WINNIPEG'S RESIDENTIAL PROPERTY TAX BURDEN: CONCLUSIONS	13
Appendix A – Additional Tables	14
Appendix B - Commercial Property Taxes Favourable in Winnipeg	30
Appendix C- Terms and Descriptions	32

# Winnipeg's Number One

## A Comparison of Effective Residential Property Tax Levels in North America

### EXECUTIVE SUMMARY

This report assesses the relative impact of the residential tax burden in Winnipeg. It uses survey data from different sources to compare Winnipeg's property taxes with major cities in Canada and the United States.

The fairest and most common way of making this comparison across jurisdictions requires a look at *effective* property tax rates, that is, property taxes relative to market values. Because property tax is levied on market values and they vary significantly across jurisdictions, a fair judgement about the impact of property taxes here has to be made through the filter of market value. Cities might have similar tax levels, but where market values are high, residents would enjoy much lower effective tax rates than in cities where market values are low. Indeed, Winnipeg, for a variety of public policy reasons, has among the lowest property values in Canada. This translates into high effective property tax rates:

- A comparison of effective residential tax rates for different types of dwellings in 2000, based on the *Survey of Canadian House Prices, Spring 2000* from the real estate company, Royal LePage, show that Winnipeg property taxpayers pay among the highest effective rates in Canada.
- They varied from 2.52 percent for a standard two-story house to 2.21 percent for a condominium. Effective tax rates are lowest in Vancouver, Victoria and Calgary, where they are one percent or less for all housing types. In other parts of the country, effective tax rates on residential property range between one and two percent.
- Effective tax rates are lowest in cities with rapidly growing market values -- Toronto, Vancouver, Victoria, and Calgary. Effective tax rates are high in Winnipeg, on the other hand, because of slower growth in housing values.
- Effective property tax rates in Winnipeg are two to three times higher than the average rate in major U.S. cities.

To adjust for the impact of low property values, other measures of tax burden are also used as a basis for comparison. These include: combined property tax and utility charges burden, property taxes relative to income and property taxes per square foot. These measures all confirm Winnipeg's position as having one of the heaviest residential tax burdens in Canada. Specifically:

- Combining property taxes and utility charges compensates for the issue that property tax does not fund the same services in every city. For example, garbage is funded from property taxes in some municipalities and from user fees in other municipalities. When property taxes and utility charges are combined, Winnipeg has the third highest total charges on a standard house in Canada of 17 cities compared.
- Property taxes relative to income for Winnipeg were 5.6 percent, the highest in the country. The lowest taxes relative to income were in Calgary at 2.6 percent of income.
- A City of Edmonton comparison of city property taxes found that Winnipeg has the fifth highest property taxes per square foot of the fourteen cities compared.

The city with the highest education taxes in the Edmonton survey was Winnipeg, followed by Regina and Saskatoon. This part of the city's residential tax burden accounts for almost half the amount of its total tax.

Winnipeg has among the highest property taxes in Canada. When smaller cities like Regina and Saint John are excluded, it has the heaviest effective residential tax burden in Canada.

## 1. INTRODUCTION

The residential property tax rate in Winnipeg in 2000 was 2.67 percent.<sup>1</sup> This means that on an average house assessed at \$114,000, the residential property taxes were about \$3,030. Is this too much or too little? How does it compare with other cities in the Canada, and the U.S.?

The purpose of this report is to assess the weight of the residential tax burden in Winnipeg. It compares that cost to other jurisdictions across North America.

The information in this report comes from a number of different sources in Canada and the United States. Although the comparisons across jurisdictions within each study may be consistent, the studies are not always comparable with each other. Each study looks at different information in different jurisdictions in different years. Furthermore, efforts have been made to explain differences in various aspects of municipal finance (for example, other sources of revenue, expenditure responsibilities, and other factors) across jurisdictions.

International property tax comparisons are also complicated by significant differences in expenditure responsibilities and revenue sources of municipalities in different countries. Furthermore, in the U.S., property taxes are deductible from income when income taxes are calculated, while in Canada they are not. This, too, must be factored into a comparison of relative property tax burdens.

There are some problems with the statistical analysis in much of the information provided. For example, some of the studies provide averages and medians for property taxes in different cities. These statistics are not always based on a random sample and averages are often unweighted. This means that smaller cities are equally weighted with larger cities. Notwithstanding the problems associated with the individual studies, a consistent pattern emerges when all of the studies are considered together.

### ***Effective Property Tax Rates***

The most common way to compare property taxes across jurisdictions is to look at effective property tax rates (property taxes relative to market values) because the property tax is levied on the market value of properties. Since market values vary significantly across jurisdictions, however, a similar tax level would result in much lower effective tax rates where market values are high and higher effective tax rates where market values are low. For this reason, other measures of tax burden are also used as the basis for comparison. These include: property taxes on a standard house, property taxes per square foot, and property taxes relative to income.

Residential property tax burdens, however measured, will vary across jurisdictions because of differences in overall property tax levels and because of differences in the relative importance of residential and non-residential assessment. The overall level of property taxes will depend on the expenditure responsibilities and other revenue sources in each municipality.

Expenditure responsibilities differ across municipalities. For example, Ontario municipalities are required to pay a portion of social assistance and social housing whereas most other municipalities in Canada are not. The City of Edmonton owns an airport, while Saskatoon's city government operates a graveyard. It is impossible, at the margins, to avoid comparing

---

<sup>1</sup> This tax rate includes municipal and education property taxes.

apples and oranges. Revenue sources available to municipalities also vary. For example, many cities in the U.S. have access to income and sales taxes; a few cities in Canada receive a share of provincial fuel taxes.

With these qualifications, this report compares the residential property tax burden in Winnipeg with the tax burden in other jurisdictions.

## 2. MEASURING THE BURDEN OF RESIDENTIAL PROPERTY TAXES

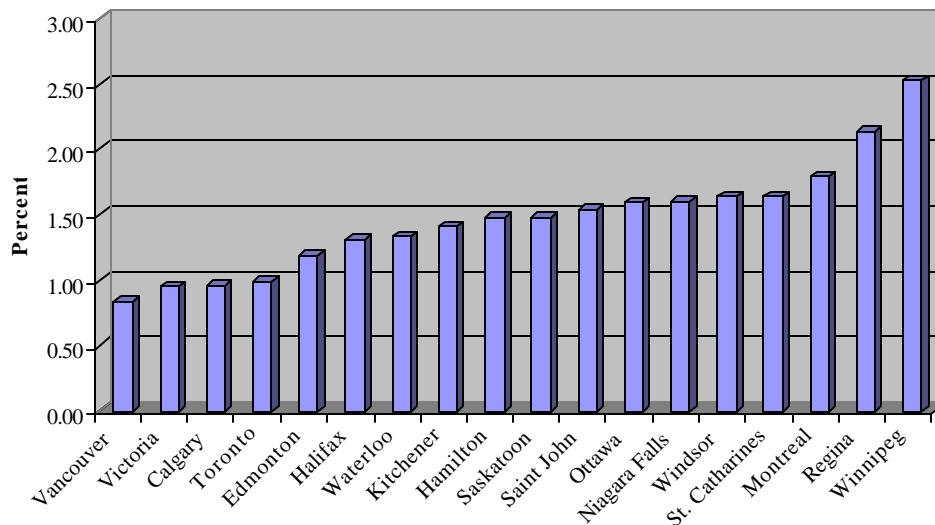
The burden of residential property taxes can be compared using a number of different measures.

### ***Winnipeg's effective residential property tax rates are among the highest in Canada.***

To compare property taxes across jurisdictions, it is necessary to use a standardized measure of comparison. A common way to compare property tax burdens across jurisdictions is to look at effective property tax rates.

Figure 1 shows effective tax rates for a two-storey house in selected cities across Canada. The information is taken from Royal LePage data from the *Survey of Canadian House Prices, Spring 2000*.<sup>2</sup> Appendix Table A-1 shows effective tax rates for seven categories of housing: detached bungalow, executive detached two storey, standard two storey, standard condominium apartment, standard townhouse, senior executive, and luxury condominium apartment.<sup>3</sup> The pattern across cities tends to be the same regardless of the type of housing considered.

**Figure 1: Effective Property Tax Rates, Two-Storey House, Selected Cities, 2000**



Source: Royal LePage Survey of Canadian House Prices, Spring 2000

<sup>2</sup> The information in this publication is based on a survey of housing prices and property taxes that sold in the spring of 2000. As with any survey, there may be problems with small sample sizes in some cities.

<sup>3</sup> Effective tax rates by neighbourhood are averaged (unweighted) across neighbourhoods in each city.

Effective residential tax rates in Winnipeg in 2000 based on this data were the highest in Canada. They varied from 2.52 percent for a standard two-story house to 2.21 percent for a condominium. Effective tax rates are lowest in Vancouver, Victoria, and Calgary where they are one percent or less for all housing types. In other parts of the country, effective tax rates on residential property range between one and two percent.

It appears from Figure 1 that effective tax rates are lowest in cities with rapidly growing market values -- Toronto, Vancouver, Victoria and Calgary. To collect a given amount of taxes, a larger assessment base will mean a lower tax rate is required.<sup>4</sup> Furthermore, the higher the market value, the lower will be the effective tax rate (property taxes relative to market value). The effective tax rate could also be lower in these growing municipalities because of a proportionately higher commercial and industrial tax base. Effective tax rates are high in Winnipeg, on the other hand, because of lower growth in housing values.

***Effective property tax rates in Winnipeg rose between 1996 and 2000.***

Over the period from 1996 to 2000, the effective tax rate on a detached executive two-storey house in Winnipeg increased marginally by .12 of a percentage point during a time when property values rose by four percent, the smallest increase in property values of any major Canadian city. Figure 2 (based on Appendix Table A-3 calculated from Royal LePage data) shows the change in effective tax rates for a detached executive two-story house in selected Canadian cities.<sup>5</sup> Over this period, effective tax rates declined the most in those cities with the fastest growth in residential property values, although some variation does exist.<sup>6</sup> For example, property values in Ottawa grew by 41 percent and the effective tax rate on this property declined by .67 of a percentage point. For Calgary and Edmonton, property values rose by 35 and 27 percent respectively while effective tax rates declined by .37 and .38 percentage points.

***Winnipeg's effective residential property tax rate is substantially higher than the rate in U.S. cities.***

Winnipeg's effective property tax rates are about two to three times higher than those found in major U.S. cities. For a number of major U.S. cities, the effective property tax rate on a \$US150,000 property is less than 1 percent: Los Angeles, Washington, Boston, New York, Portland and Seattle. Table 1 shows that the effective residential tax rate of about 2.5 percent in Winnipeg is over twice as high as both the median and the average for the largest U.S. cities.

***Table 1: Winnipeg and U.S. Average Effective Property Tax Comparison***

Effective Property Tax Rate	\$US 70,000 House	\$US 150,000 House
U.S. Average	1.30 %	1.17%
U.S. Median	1.14%	1.00%
Winnipeg	2.67%	2.92%

Source: Appendix A 14-15, Minnesota Taxpayers Association, Royal LePage Survey, Spring 2000

<sup>4</sup> The assessment base may increase for two reasons: property values may be increasing and/or the number of properties increase. When property values increase, there is not necessarily an increase in the demand for services. The same tax levy is required. Higher market values will mean a lower nominal tax rate and a lower effective tax rate. When the number of properties increases, there is likely to be an increase in expenditure demands and an increase in the tax levy. The tax rate may or may not fall.

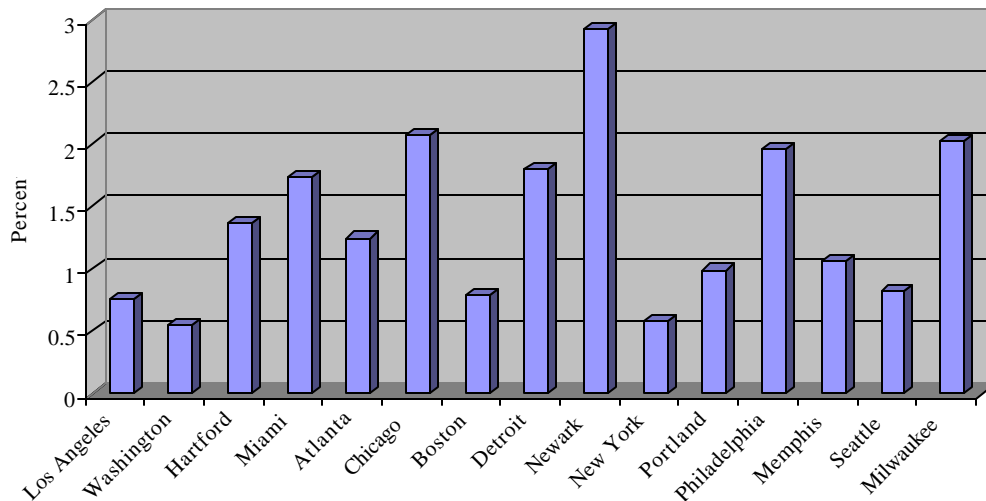
<sup>5</sup> Table A-2 provides the same information for a detached bungalow.

<sup>6</sup> The rank correlation coefficient between housing prices and effective tax rates for the Canadian cities cited is -0.50 for a detached bungalow and -0.55 for an executive detached two-storey house.

This kind of comparison, however, ignores the opportunity for U.S. homeowners to deduct property taxes (and mortgage interest) from income for income tax purposes. Lower property taxes in U.S. cities are offset further by lowered income taxes.

Figure 2 compares effective property tax rates for residential properties valued at \$US 150,000 (comparable to a \$220,000 property) for selected U.S. cities for 1998.<sup>7</sup> Effective tax rates for the largest cities in each of the 50 states can be found for houses valued at \$US70,000 and \$US150,000. The average (unweighted) effective tax rate respectively is 1.30 percent (\$US70,000 house) and 1.17 percent (\$US150,000 house).

**Figure 2: Effective Residential Property Tax Rates on a US\$150,000 House, Selected U.S. Cities, 1998**



Source: Minnesota Taxpayers

***Residential property taxes on a standard house are higher in Winnipeg than in most Canadian cities.***

Another way to examine the property tax burden is to compare property taxes on a similar house in different parts of the country. A study by the City of Edmonton compares property taxes in 2000 on a sample residential house: a 10- to 15-year-old, detached three bedroom bungalow with a main floor area of 1,200 square feet, a one-car garage, a full basement but no recreation room or fireplace, on a 5,500 square-foot lot.<sup>8</sup>

By this comparison (Table 2), Winnipeg ranked 15 out of the 17 cities compared. In other words it has the third highest property taxes of the list surveyed. The tax on a standard house is higher in Winnipeg compared to most other Canadian cities. This finding is not surprising, since property taxes are based on market value and market values are significantly lower in Winnipeg than most.

When property taxes are taken as a percent of market value in each of these cities (market values taken from Royal LePage because the house description is similar to one in their

<sup>7</sup> This information is based on a study by the Minnesota Taxpayers Association. It does not show tax rates for medium or small cities in each state.

<sup>8</sup> The City of Edmonton collected information from a survey of cities across Canada.



study), Table 2 places Winnipeg 15<sup>th</sup> out of 17 cities again ranked lowest to highest or the third highest taxing jurisdiction among the Canadian cities. Only Regina and Saint John are higher. These cities also have relatively lower housing values.<sup>9</sup>

Table 2 also includes utility charges in selected Canadian cities. These include fees for water and sewer service, garbage pick-up where applicable and telephone and power rates (see Appendix Tables A-6 and A-7 for a detailed breakdown of these charges by municipality). It is important that both property taxes and utility charges across jurisdictions be combined in an inter-municipal comparison because the property tax does not fund the same services in every city. For example, garbage is funded from property taxes in some municipalities and from user fees in other municipalities. When property taxes and utility charges are both included, Winnipeg's position remains unchanged. In other words, excluding Yellowknife, Winnipeg has the third highest total charges on a standard house in Canada.

**Table 2: Effective Residential Property Tax and Utility Rates: Selected Canadian Cities - Ranked from Lowest to Highest**

City	Estimated Market Value <sup>1</sup>	Property Tax Only <sup>2</sup>	Property Tax plus Utility Charges <sup>3</sup>	Effective Tax Rates			
				Property Tax Only <sup>4</sup>	Rank	Property Tax plus Utility Charges <sup>5</sup>	Rank
	\$	\$	\$	%		%	
Vancouver	290,000	1,892	3,056	0.6524	1	1.0538	1
Victoria	230,000	1,851	2,862	0.8048	2	1.2443	2
Toronto	283,000	2,670	3,837	0.9435	4	1.3558	3
Calgary	195,000	1,643	2,919	0.8426	3	1.4969	4
Red Deer	143,000	1,495	2,786	1.0455	5	1.9483	5
Medicine Hat	114,000	1,281	2,532	1.1237	6	2.2211	6
St. John's	96,000	1,150	2,265	1.1979	7	2.3594	7
Ottawa	162,000	2,760	3,831	1.7037	12	2.3648	8
Edmonton	130,000	1,605	3,077	1.2346	8	2.3669	9
Halifax	140,000	1,995	3,323	1.425	10	2.3736	10
Lethbridge	115,000	1,447	2,936	1.2583	9	2.553	11
Saskatoon	127,000	2,124	3,365	1.6724	11	2.6496	12
Montreal	130,000	2,893	3,645	2.2254	16	2.8038	13
Fredericton	104,000	1,960	3,349	1.8846	13	3.2201	14
<b>Winnipeg</b>	113,000	2,481	3,721	2.1956	15	3.2929	15
Saint John	101,000	1,996	3,383	1.9762	14	3.3495	16
Regina	110,000	2,679	4,055	2.4355	17	3.6864	17

Notes:

<sup>1</sup> Market values were obtained by taking the average value for all single family homes reported for each city (from different neighbourhoods) in Royal LePage's Annual Survey of Housing Prices. The home is a 1,200 square foot single-detached with three bedrooms, 1.5 bathrooms, one-car garage, full basement with no recreation room, fireplace or appliances on a 5,500 square foot lot.

<sup>2</sup> From Appendix Table A-5.

<sup>3</sup> From Appendix Table A-7.

<sup>4</sup> Calculated by taking average annual property taxes as a % of average estimated market value.

<sup>5</sup> Calculated by taking average annual property taxes plus utility charges as a % of average estimated market value.

Source: Calculated from Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November 2000 and Royal LePage's Survey of Housing Prices.

<sup>9</sup> The estimates, though not precisely the same as in Figure 1, are consistent with them. It appears that the estimates from the Edmonton study may be somewhat more precise than those in the Royal LePage study.

Table 3 breaks down the City of Edmonton residential property tax survey data into its municipal and education components. In most cities, property tax is a major funding source for education. The city with the highest education taxes in the survey was Winnipeg, followed by Regina and Saskatoon.

**Table 3: Components of Residential Property on a Sample Residential House<sup>1</sup> in 2000: Selected Canadian Cities - Ranked from Lowest to Highest**

City	Property Tax Levy				Home owner grant/ credit	Net property tax levy (after grants /credits)	City Tax Rank	School Tax Rank	Total Tax Rank
	Municipal	School	Other	Total					
St. John's	\$ 1,150	\$ 0	\$ 0	\$ 1,150	\$ 0	\$ 1,150	9	1	1
Medicine Hat	596	685	0	1,281	0	1,281	2	6	2
Lethbridge	765	682	0	1,447	0	1,447	5	5	3
Red Deer	758	737	0	1,495	0	1,495	4	8	4
Edmonton	870	735	0	1,605	0	1,605	7	7	5
Calgary	753	890	0	1,643	0	1,643	3	10	6
Victoria	1,203	822	296	2,321	4702	1,851	11	9	7
Vancouver <sup>4</sup>	1,126	1,073	163	2,362	4702	1,892	8	13	8
Fredericton	1,932	0	2,128	4,060	21,003	1,960	16	1	9
Halifax	1,406	539	50	1,995	0	1,995	13	3	10
Saint John	1,973	0	1,739	3,712	17,163	1,996	17	1	11
Saskatoon	837	1,186	101	2,124	0	2,124	6	14	12
Yellowknife	1,380	969	0	2,349	0	2,349	12	12	13
<b>Winnipeg</b>	<b>1,456</b>	<b>1,350</b>	<b>0</b>	<b>2,806</b>	<b>325</b>	<b>2,481</b>	<b>14</b>	<b>16</b>	<b>14</b>
Toronto	1,759	911	0	2,670	0	2,670	15	11	15
Regina	1,202	1,349	128	2,679	0	2,679	10	15	16
Ottawa	518	608	1,634	2,760	0	2,760	1	4	17
Montreal	2,490	403	0	2,893	0	2,893	18	2	18

Notes:

<sup>1</sup> Defined as a 10 to 15 year old detached three bedroom bungalow with a main floor area of 1,200 square feet, one car garage, full basement, no recreation room or fireplace, on a 5,500 square-foot lot.

<sup>2</sup> Grant is \$470 for school levy for homeowners with age of 64 years or younger and \$745 for senior citizens or handicapped.

<sup>3</sup> Provincial government homeowners grant for owner occupied dwellings.

<sup>4</sup> Based on averaged value single-family house which may not correspond to the sample house.

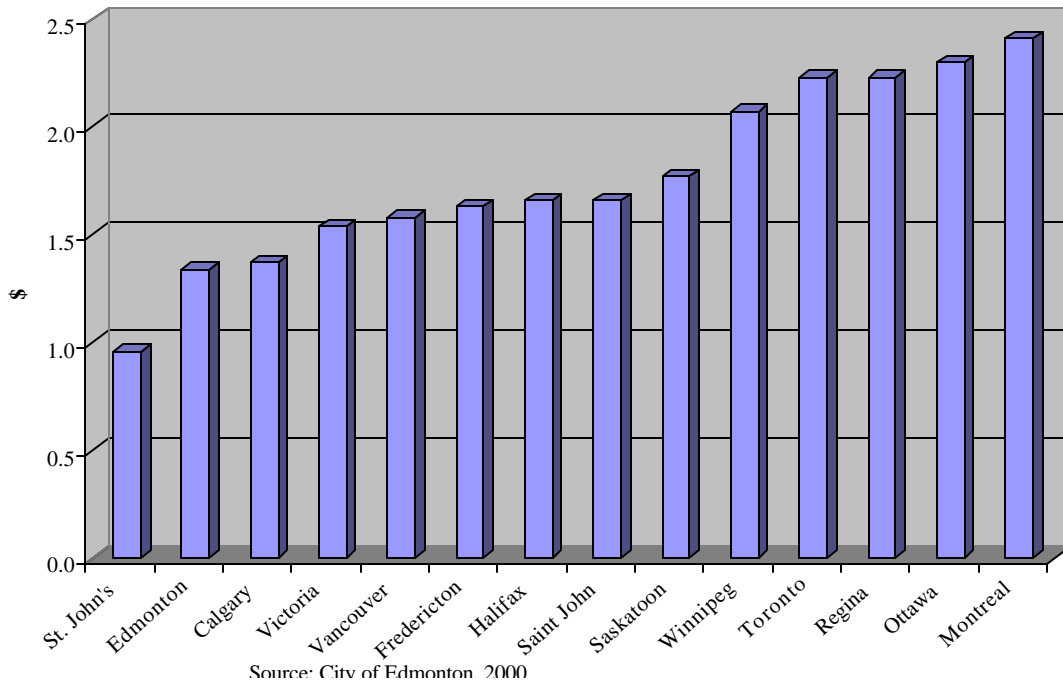
Source: Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November 2000.

**Residential property taxes per square foot are relatively high in Winnipeg compared to other Canadian cities.**

Figure 3 compares residential property taxes per square foot for each of the major cities across Canada, based on the standard house used in the Edmonton study (see Appendix Table A-8). Winnipeg has the fifth highest property taxes per square foot of the 14 cities compared.

Although property taxes per square foot are sometimes compared across municipalities, this measure does not reflect either the use of services by property taxpayers or their ability to pay property taxes. For this reason, it has generally been discarded as a measure of property tax burden.

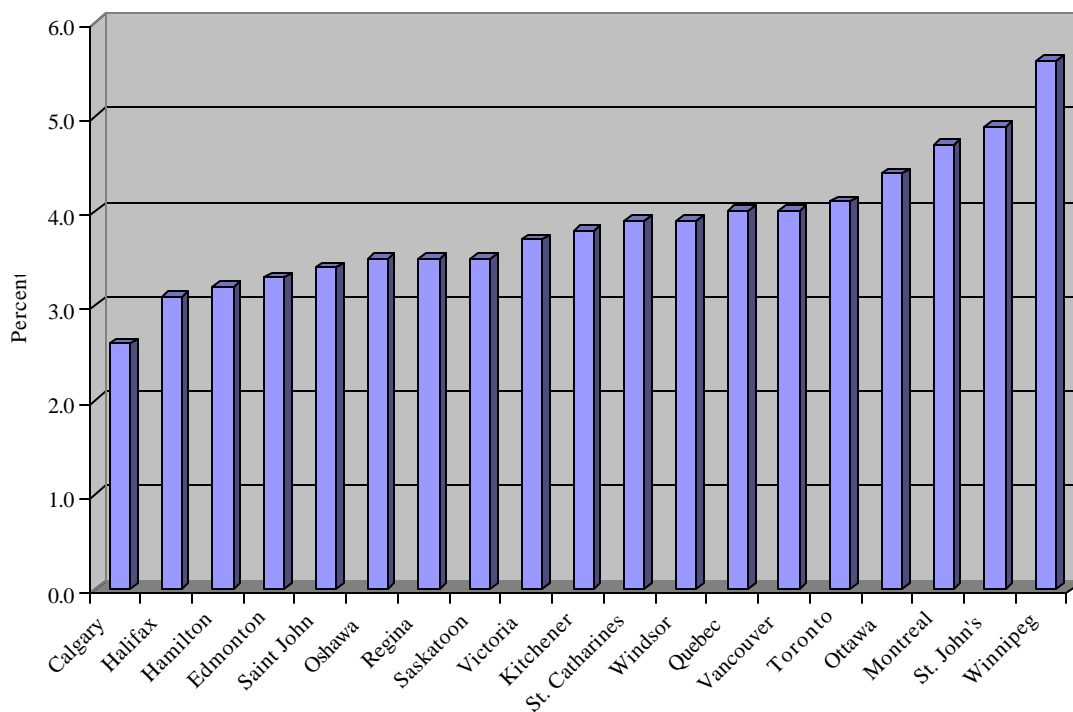
**Figure 3: Residential Property Taxes per Square Foot of Building, 2000**



**Residential property taxes relative to income are the highest in Winnipeg.**

Figure 4 compares residential property taxes relative to income in Winnipeg with other cities across Canada.<sup>10</sup> This Figure is based on Appendix Table A-9 which compares property taxes to a number of affordability variables for cities across Canada.

**Figure 4: Property Taxes as a Percent of Income**



Source: Royal LePage and 1996 Census

Property taxes relative to income for Winnipeg were 5.6 percent, the highest in the country. The lowest taxes relative to income were in Calgary at 2.6% of income.

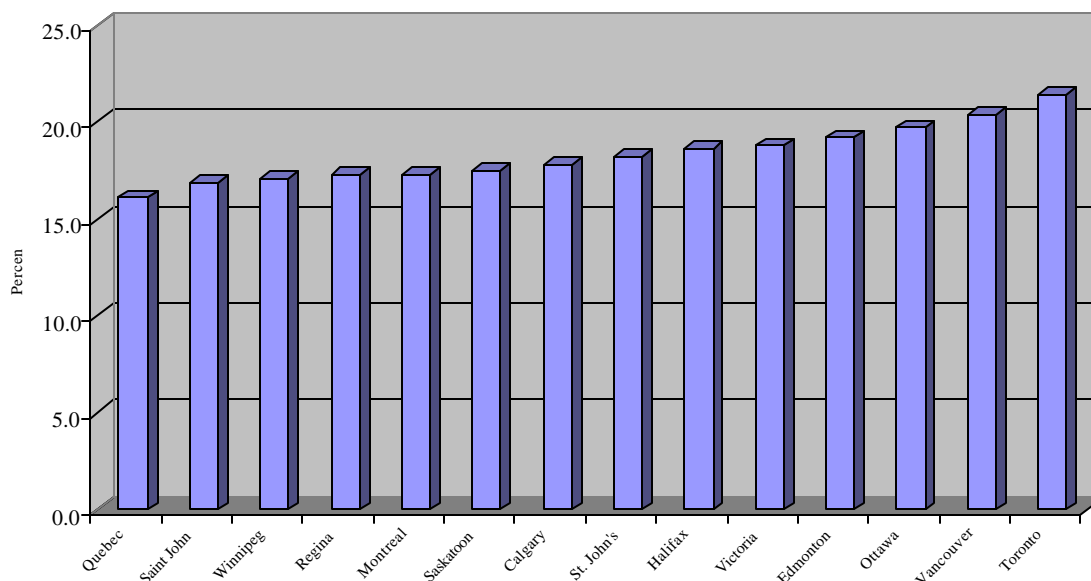
As noted earlier, one of the reasons that property taxes are higher in Winnipeg than in other parts of the country is because housing prices are among the lowest in Canada. Appendix Table A-9 indicates, for example, that the ratio of market values to income is 1.82 in Winnipeg. This is the third lowest ratio in the country after Regina and Saint John.

<sup>10</sup> These are an over-estimate because property tax information is taken from the Royal LePage survey for 2000 and income estimates are from the 1996 Census. Although this measure does not reflect the current property tax burden in any city, it does illustrate inter-municipal differences.

**Winnipeg's shelter costs as a percent of income are slightly less than the average of other Canadian cities.**

Shelter costs as a percent of income are slightly below average in Winnipeg (see Figure 5).<sup>11</sup> Rent as a percent of income is about average in Winnipeg.

**Figure 5: Shelter Costs as a Percent of Income**



Source: Survey of Family Expenditures, 1998 and 1996 Census

### 3. PROPERTY TAXES RELATIVE TO OTHER REVENUE SOURCES

Property tax burdens vary across municipalities for a number of reasons. One possibility is that property taxes are lower in municipalities that have access to other tax sources.

**Property taxes have fallen relative to other revenue sources in Manitoba.**

Table 3 shows the percentage point change in the relative importance of all taxes by province between 1994 and 1998.<sup>12</sup> Over this five-year period, property taxes in Manitoba declined in relative importance when taken as a percentage of all taxes collected. More specifically, they accounted for 11.0 percent of all tax revenues collected in Manitoba in 1994 but only 8.6 percent in 1998 (Appendix Tables A-10 and A-11). This represents a decrease of 1.2 percentage points in relative importance. Similarly, property taxes declined in relative importance in Ontario, Quebec and all western provinces.

<sup>11</sup> Shelter costs were taken from the 1998 Family Expenditure Survey; income is from the 1996 Census.

<sup>12</sup> Although these are provincial figures, they illustrate a distribution of relative tax sources that is similar for cities within the province in which the city is located.

**Table 3: Percentage Point Change in Relative Importance of Taxes by Province from 1994 to 1998**

	Nfld	PEI	NS	NB	Quebec	Ontario	Manitoba	Sask	Alta	BC	Total
	%	%	%	%	%	%	%	%	%	%	%
Federal:											
PIT	0.0	-0.7	2.1	1.9	0.3	1.6	0.9	0.8	3.0	-0.3	1.6
CIT	1.2	0.4	0.8	0.8	0.6	1.3	0.3	1.1	0.6	-0.1	0.8
GST	-0.2	-0.2	0.0	0.4	-0.4	-0.4	-0.2	0.0	-0.1	-1.0	-0.6
Soc. Ins.	6.5	6.3	6.5	6.9	5.5	5.4	6.2	5.2	5.5	5.9	5.6
Other	-6.1	-5.9	-11.3	-13.3	-9.0	-9.0	-7.3	-5.3	-9.2	-7.1	-8.6
TOTAL	1.3	-0.1	-1.9	-3.3	-3.0	-1.0	-0.1	1.8	-0.3	-2.5	-1.3
Provincial:											
PIT	-0.4	-1.1	0.2	0.1	-4.9	-3.2	1.8	-0.4	2.6	0.5	-2.5
CIT	0.3	0.1	0.3	0.4	1.6	1.7	-0.1	0.3	1.4	-0.2	1.2
Sales	-5.7	-1.9	-2.2	-3.1	-0.1	-0.2	-0.4	-1.5	-0.1	-1.1	-0.4
Property	0.0	-1.7	0.0	-0.1	0.0	0.0	-0.7	0.0	-0.6	-0.6	-0.3
Soc. Ins.	2.3	1.5	1.6	1.2	2.1	1.8	1.3	1.4	1.3	2.4	1.9
Other	1.8	1.3	1.9	2.1	5.3	3.5	0.6	-0.4	-2.6	0.6	2.7
TOTAL	-1.7	-1.7	1.7	0.6	4.0	3.6	2.4	-0.5	2.0	1.8	2.6
Local:											
<b>Property</b>	-0.5	0.5	0.0	1.1	-1.1	-1.4	-2.4	-1.2	-2.1	-0.2	-1.0
Other	-0.3	0.0	-0.6	0.0	-0.3	-1.7	-0.3	-0.6	-0.1	0.2	-0.9
CPP/QPP	1.2	1.3	0.8	1.7	0.4	0.5	0.4	0.6	0.3	0.7	0.6
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Calculated from data provided by Statistics Canada, *Provincial Economic Accounts*

***There is not a strong relationship between property taxes and other taxes in U.S. cities.***

There is a common perception that property taxes are lower in cities that have access to other revenue sources. In particular, it is thought that U.S. cities have lower property taxes because they can levy income and sales taxes. Table 4 reports the results from a District of Columbia study that compares state and local tax burdens for a hypothetical family of four earning \$US75,000 in the largest cities in selected U.S. states. Taxes include property taxes, sales taxes, income taxes, and automobile taxes (including gasoline tax, registration fees, excise tax, and personal property tax).<sup>13</sup> For this hypothetical family in the largest city in each of the 51 states, see Appendix Table A-12.

**Table 4: Estimated Burden of Major State and Local Taxes for a Family of Four with Income of \$75,000 in 1999**

City	Income Tax	Property Tax	Sales Tax	Auto Tax	Total	Total less Property Tax	Property Tax Rank	Total less Property tax
Bridgeport, CT	2,342	12,529	1,237	1,757	17,865	5,336	1	14
Newark, NJ	1,079	7,831	1,277	286	10,473	2,642	2	42
New York, NY	5,378	2,392	1,657	130	9,557	7,165	20	1
Philadelphia, PA	4,522	3,307	1,207	200	9,236	5,929	7	6
Milwaukee, WI	3,875	2,830	1,196	364	8,265	5,435	14	10
Boston, MA	3,504	3,215	803	565	8,087	4,872	8	25
Washington, DC	4,719	1,517	1,353	356	7,945	6,428	42	3
Detroit, MI	4,892	1,378	1,051	300	7,621	6,243	44	4
Atlanta, GA	2,797	2,055	1,727	697	7,276	5,221	24	19
Los Angeles, CA	2,060	2,883	1,485	841	7,269	4,386	13	31
Chicago, IL	1,912	2,797	1,688	351	6,748	3,951	15	37
Portland, OR	4,301	2,044	0	317	6,662	4,618	25	29
Seattle, WA	0	2,968	1,738	951	5,657	2,689	10	41
Memphis, TN	0	1,835	1,933	254	4,022	2,187	31	44
Jacksonville, FL	0	2,432	1,241	348	4,021	1,589	18	49
Unweighted Average (51 cities)	3,129	2,586	1,291	565	6,968	4,382		
Median (51 cities)	2,999	2,014	1,277	516	6,837	4,863		

Source: Government of the District of Columbia, "Tax Rates and Tax Burdens in the District of Columbia – A Nationwide Comparison, 1999" issued July 2000.

The evidence in Appendix Table A-12 shows that this perception cannot be supported in any statistically significant way. For example, the rank correlation coefficient between property taxes and other taxes (income, sales, automobile) for all 51 cities is  $-0.32$ . This means that, where property taxes are higher, other taxes are lower but there is not a very strong relationship between the two.

It does not support the position that achieving more competitive residential property taxes in Winnipeg involves giving the city additional tax sources.

<sup>13</sup> For a description of the study methodology, see Appendix C.

#### 4. WINNIPEG'S RESIDENTIAL PROPERTY TAX BURDEN: CONCLUSIONS

The residential property tax rate (municipal and education) in Winnipeg was 2.52 percent in 2000. On an average house valued at \$114,000, the property taxes were about \$3,000.

When the nominal property tax rate or the effective property tax rate is compared with municipalities across Canada, Winnipeg's residential rate ends up being among the highest in the country. When compared with other major cities across Canada, the effective tax rate appears to be comparable with Regina and Saint John. As in Winnipeg, property values have been stagnant in these cities. The effective residential tax rate in Winnipeg also substantially exceeds the rate in U.S. cities.

While the residential property tax in Winnipeg is high when compared to market values, the city also ranks at the high end when other measures are used. For example, Winnipeg has the third highest total charges on a standard house in Canada of 17 cities when comparing combined property taxes and utility charges. Residential property taxes per square foot are higher in Winnipeg than most Canadian cities. Finally, when property taxes are compared to income they are the highest in the country by a substantial margin.

Winnipeg had the highest education taxes levied on property in Canada in the City of Edmonton survey.

Winnipeg and Halifax decreased their property taxes by 2.0 percent and 1.0 percent respectively in 2000. However Winnipeg reduced it from a higher base than most other cities. While Winnipeg has slightly lowered property taxes in nominal terms, the relatively slow increase in property values in the Manitoba capital have produced a negligible tax reduction on a standard detached bungalow (see appendix table A-2). On larger homes, Winnipeg's effective property tax rates actually increased slightly in 2000 (appendix table A-3).

Other cities have increased their residential property taxes on an annual basis from a smaller base than Winnipeg. For example, Calgary increased the residential tax rate by 4.0 percent in 1999 and by 2.2 percent in 2000. However, in relation to rising property prices, Calgary's and most other Canadian cities' effective property taxes are, in fact, falling. In Winnipeg, that is not the case.



**Appendix A:**  
**Additional Tables**

**Table A-1: Average Effective Residential Tax Rates by Property Type,  
Selected Canadian Municipalities, 2000**  
(%)

Municipality	Detached Bungalow	Executive Detached Two Storey	Standard Two Storey	Standard Condo. Apt.	Standard Townhouse	Senior Executive	Luxury Condo. Apt.
<b>Winnipeg</b>	2.67	2.92	2.52	2.65	2.64	2.54	2.21
Halifax	1.41	1.29	1.31	1.25	1.22	1.25	0.96
Saint John	1.67	1.73	1.54	2.03	1.74	1.57	2.37
Montreal	1.86	1.87	1.79	2.06	1.96	1.66	1.65
Toronto	1.03	1.03	0.99	1.08	1.02	1.06	1.05
Hamilton	1.39	1.40	1.48	1.52	1.37	1.33	1.48
Kitchener	1.42	1.35	1.41	1.50	1.44	1.52	1.56
Ottawa	1.78	1.64	1.59	2.31	2.06	1.62	1.58
St. Catharines	1.76	1.64	1.64	2.00	2.00	1.33	1.75
Niagara Falls	1.58	1.58	1.60	1.48	1.72	1.40	1.59
Waterloo	1.43	1.35	1.33	1.36	1.40	1.33	1.27
Windsor	1.73	1.49	1.64	1.55	1.88	1.72	1.55
Regina	1.82	2.33	2.13	1.84		2.32	2.36
Saskatoon	1.48	1.54	1.48	1.82	1.92	1.42	1.75
Calgary	0.91	0.93	0.96	0.91	0.94	0.93	0.98
Edmonton	1.32	1.29	1.19	1.16	1.16	1.24	1.26
Vancouver	0.87	0.85	0.84	0.98	0.86	0.78	0.85
Victoria	0.96	0.95	0.95	0.95	1.00	0.92	1.00

Note: For descriptions of different housing types, see Appendix B.

Source: Royal LePage Survey of Canadian House Prices, Spring 2000.

**Table A-2: Change in Market Value and Effective Tax Rate for Detached Bungalow for Selected Canadian Cities: 1996 to 2000**

City	Market Value			Effective Tax Rate		
	1996	2000	Percentage change	1996	2000	Percentage point change
	\$	\$	%	%	%	%
Winnipeg Area	100,310	113,455	13.0	2.74	2.67	-0.07
Halifax/Dartmouth	117,417	119,363	1.7	1.56	1.41	-0.15
Saint John	85,600	101,000	18.0	1.58	1.67	-0.09
Montreal Area	112,146	134,650	20.1	2.06	1.86	-0.20
Toronto Area	201,778	260,296	29.0	1.25	1.03	-0.22
Hamilton	132,000	140,667	6.6	1.60	1.39	-0.21
Kitchener	133,000	159,000	19.5	0.65	1.42	+0.77
Ottawa Area	135,500	161,832	19.4	1.98	1.78	-0.20
St. Catharines	105,900	125,000	18.0	2.17	1.76	-0.41
Niagara Falls	103,000	114,000	10.7	1.65	1.58	-0.07
Waterloo	144,000	164,000	13.9	1.28	1.43	+0.15
Windsor	120,000	139,000	15.8	1.83	1.73	-0.10
Regina	---	110,000	---	---	1.82	---
Saskatoon	91,750	126,625	38.0	2.05	1.48	-0.57
Calgary Area	130,521	187,502	43.7	1.25	0.91	-0.34
Edmonton Area	120,056	140,627	17.1	1.49	1.32	-0.17
Vancouver Area	265,500	289,864	9.2	0.86	0.87	+0.01
Victoria	215,000	230,000	7.0	0.93	0.96	+0.03

**Source:** Calculated from *The Royal LePage Survey of Canadian House Prices*, Winter 1996 and Spring 2000.

**Table A-3: Change in Market Value and Effective Tax Rate for Executive Detached Two-Storey for Selected Canadian Cities: 1996 to 2000**

City	Market Value			Effective Tax Rate		
	1996	2000	Percentage change	1996	2000	Percentage point change
	\$	\$	%	%	%	%
<b>Winnipeg Area</b>	148,882	154,818	+4.0	2.80	2.92	+0.12
Halifax/Dartmouth	156,643	197,714	+26.2	1.64	1.29	-0.35
Saint John	143,000	165,400	+15.7	1.58	1.73	+0.15
Montreal Area	193,603	238,553	+23.2	1.90	1.87	-0.03
Toronto Area	288,143	393,213	+36.5	1.29	1.03	-0.26
Hamilton	193,000	216,667	+12.3	1.32	1.40	+0.08
Kitchener	195,000	208,000	+6.7	1.18	1.35	+0.17
Ottawa Area	176,000	247,287	+40.5	2.31	1.64	-0.67
St. Catharines	178,000	195,000	+9.6	1.80	1.64	-0.16
Niagara Falls	170,000	190,000	+11.8	1.76	1.58	-0.18
Waterloo	190,000	208,000	+9.5	1.18	1.35	+0.17
Windsor	180,000	202,000	+12.2	1.28	1.49	+0.21
Regina	n.a.	155,000	n.a.	n.a.	2.33	n.a.
Saskatoon	136,500	151,750	+11.2	2.42	1.54	-0.88
Calgary Area	172,281	231,635	+34.5	1.30	0.93	-0.37
Edmonton Area	146,444	185,727	+26.8	1.67	1.29	-0.38
Vancouver Area	339,536	363,545	+7.1	0.88	0.85	-0.03
Victoria	285,000	305,000	+7.0	1.02	0.95	-0.07

**Source:** Calculated from *The Royal LePage Survey of Canadian House Prices*, Winter 1996 and Spring 2000.

**Table A-4: Effective Residential Property Tax Rates  
in Selected U.S. Cities, 1998**

	<b>Property valued at \$US 70,000</b>	<b>Property valued at \$US 150,000</b>
Alabama	0.401%	0.384%
Alaska	1.536%	1.316%
Arizona	0.900%	0.772%
Arkansas	1.027%	0.880%
California	0.829%	0.753%
Colorado	0.634%	0.543%
Connecticut	1.600%	1.372%
Delaware	0.993%	0.851%
District of Columbia	0.451%	0.552%
Florida	1.552%	1.741%
Georgia	1.390%	1.247%
Hawaii	0.127%	0.194%
Idaho	0.944%	0.895%
Illinois	2.163%	2.081%
Indiana	1.246%	1.223%
Iowa	1.866%	1.723%
Kansas	0.933%	0.835%
Kentucky	1.046%	0.896%
Maine	2.114%	1.812%
Maryland	2.015%	1.727%
Massachusetts	0.611%	0.783%
Michigan	2.091%	1.793%
Minnesota	1.128%	1.302%
Mississippi	0.950%	0.951%
Missouri	1.109%	0.951%
Montana	1.193%	1.022%
Nebraska	1.956%	1.676%
Nevada	0.887%	0.760%
New Hampshire	2.972%	2.547%
New Jersey	3.420%	2.931%
New Mexico	0.805%	0.730%
New York	0.681%	0.584%
North Carolina	1.098%	0.941%
North Dakota	1.675%	1.436%
Ohio	1.260%	1.080%
Oklahoma	0.864%	0.800%
Oregon	1.156%	0.990%
Pennsylvania	2.291%	1.964%
Rhode Island	1.936%	1.659%
South Carolina	0.502%	0.491%
South Dakota	1.519%	1.302%
Tennessee	1.245%	1.067%
Texas	1.619%	1.507%
Utah	0.862%	0.739%
Vermont	1.765%	1.512%
Virginia	1.171%	1.004%
Washington	0.962%	0.824%
West Virginia	0.716%	0.614%
Wisconsin	2.315%	2.026%
Wyoming	0.659%	0.565%
<b>Avg. without Louisiana</b>	<b>1.304%</b>	<b>1.167%</b>
<b>Median without Louisiana</b>	<b>1.142%</b>	<b>0.997%</b>

Source: 50-State Property Tax Comparison Study, Minnesota Taxpayers Association, January 1999.

**Table A-5: Comparative Property Tax Levy on a Sample Residential House<sup>1</sup> in 2000: Selected Canadian Cities ranked lowest to highest**

City	Property Tax Levy				Homeowner grant/credit	Net property tax levy (after grants/credits)	Rank
	Municipal	School	Other	Total			
	\$	\$	\$	\$	\$	\$	
St. John's	1,150	0	0	1,150	0	1,150	1
Medicine Hat	596	685	0	1,281	0	1,281	2
Lethbridge	765	682	0	1,447	0	1,447	3
Red Deer	758	737	0	1,495	0	1,495	4
Edmonton	870	735	0	1,605	0	1,605	5
Calgary	753	890	0	1,643	0	1,643	6
Victoria	1,203	822	296	2,321	470 <sup>2</sup>	1,851	7
Vancouver <sup>4</sup>	1,126	1,073	163	2,362	470 <sup>2</sup>	1,892	8
Fredericton	1,932	0	2,128	4,060	2,100 <sup>3</sup>	1,960	9
Halifax	1,406	539	50	1,995	0	1,995	10
Saint John	1,973	0	1,739	3,712	1,716 <sup>3</sup>	1,996	11
Saskatoon	837	1,186	101	2,124	0	2,124	12
Yellowknife	1,380	969	0	2,349	0	2,349	13
<b>Winnipeg</b>	<b>1,456</b>	<b>1,350</b>	<b>0</b>	<b>2,806</b>	<b>325</b>	<b>2,481</b>	<b>14</b>
Toronto	1,759	911	0	2,670	0	2,670	15
Regina	1,202	1,349	128	2,679	0	2,679	16
Ottawa	518	608	1,634	2,760	0	2,760	17
Montreal	2,490	403	0	2,893	0	2,893	18

Notes:

<sup>1</sup> Defined as a 10 to 15 year old detached three bedroom bungalow with a main floor area of 1,200 square feet, one car garage, full basement, no recreation room or fireplace, on a 5,500 square-foot lot.

<sup>2</sup> Grant is \$470 for school levy for homeowners with age of 64 years or younger and \$745 for senior citizens or handicapped.

<sup>3</sup> Provincial government homeowners grant for owner occupied dwellings.

<sup>4</sup> Based on averaged value single-family house which may not correspond to the sample house.

Source: Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November 2000.

**Table A-6: Average Monthly Utility charges for Single Family Residential House:  
Selected Canadian Cities (as of September 2000)**

City	Telephone <sup>1</sup>	Power <sup>2</sup>	Water <sup>3</sup>	Sewer <sup>3</sup>	Garbage	Total	Rank
	\$	\$	\$	\$	\$	\$	
Montreal	21.95	40.72	0.005	14.94	--	62.67	1
Victoria	21.65	34.57	12.84	2.94	12.25	84.25	2
Ottawa	20.2	40.55	10.9	0.005	--	89.23	3
St. John's	19.95	56.53	16.44	0.005	--	92.92	4
Vancouver	25	34.57	18.95	5.25	13.25	97.02	5
Toronto	21.95	49.44	18.1	7.72	--	97.21	6
Saskatoon	22	55.22	16.526	24.73	--	103.42	8
<b>Winnipeg</b>	<b>22.02</b>	<b>38.61</b>	<b>23.1</b>	<b>19.63</b>	--	<b>103.62</b>	<b>7</b>
Medicine Hat	23.61	40.41	16.27	11.66	9.05	104.27	9
Calgary	22.86	43.32	24.44		--	106.3	10
Red Deer	23.61	44.35	17.36	17.58	6.25	107.58	11
<b>Average</b>	<b>22.45</b>	<b>49.39</b>	<b>20.13</b>	<b>12.2</b>	<b>3.8</b>	<b>107.97</b>	<b>--</b>
Halifax	25	60.09	13.94	19.99	--	110.69	12
Regina	22	55.22	21.63	16.01	--	114.7	13
Saint John	20	55.37	15.49	15.85	--	115.59	14
Fredericton	20	61.63	17.4	21.166	--	115.76	15
Edmonton	22.4	45.67	25.426	15.68	8	122.65	16
Lethbridge	23.61	45.64	25.22	16.73	9.65	124.11	17
Yellowknife	26.33	87.09	68.344	0.004	10	191.77	18

Notes:

<sup>1</sup> For a touch tone telephone.

<sup>2</sup> Based on 5000 KWH/month power consumption – July rates 2000 including GST.

<sup>3</sup> Based on 20 cubic meter per month water consumption.

<sup>4</sup> This amount is for both water and sewer charges.

<sup>5</sup> Financed through property taxes.

<sup>6</sup> Includes surcharges.

Source: Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November 2000.

**Table A-7: Annual Total Property Taxes and Utility charges for A Single Family Residential House\* in 2000: Selected Canadian Cities**

City	Total Property Tax <sup>1</sup>	Total Utility Charges <sup>2</sup>	Total	Rank
	\$	\$	\$	
St. John's	1,150	1,115	2,265	1
Medicine Hat	1,281	1,251	2,532	2
Red Deer	1,495	1,291	2,786	3
Victoria	1,851	1,011	2,862	4
Calgary	1,643	1,276	2,919	5
Lethbridge	1,447	1,489	2,936	6
Vancouver	1,892	1,164	3,056	7
Edmonton	1,605	1,472	3,077	8
<b>Average</b>	<b>2,015</b>	<b>1,296</b>	<b>3,311</b>	-
Halifax	1,995	1,328	3,323	9
Fredericton	1,960	1,389	3,349	10
Saskatoon	2,124	1,241	3,365	11
Saint John	1,996	1,387	3,383	12
Montreal	2,893	752	3,645	13
<b>Winnipeg</b>	<b>2,481</b>	<b>1,240</b>	<b>3,721</b>	<b>14</b>
Ottawa	2,760	1,071	3,831	15
Toronto	2,670	1,167	3,837	16
Regina	2,679	1,376	4,055	17
Yellowknife	2,349	2,301	4,650	18

Notes: \* House as described in Table 1.

<sup>1</sup> From Table A-8

<sup>2</sup> From Table A-9 and converted to annual figures.

Source: Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November 2000.



**Table A-8: Residential Property Taxes per Square Foot of Building**  
 Ranked lowest to highest

<b>Municipality</b>	<b>\$</b>
St. John's	0.96
Medicine Hat	1.07
Lethbridge	1.21
Red Deer	1.25
Edmonton	1.34
Calgary	1.37
Victoria	1.54
Vancouver	1.58
Fredericton	1.63
Halifax	1.66
Saint John	1.66
Saskatoon	1.77
<b>Winnipeg</b>	<b>2.07</b>
Toronto	2.23
Regina	2.23
Ottawa	2.30
Montreal	2.41

Source: Calculated from Jong Huang, "2000 Residential Property Taxes and Utility Charges Survey", City of Edmonton, Planning and Development Department, November

**Table A-9: Affordability Measures**

	Property tax per household, 2000 (\$)	Property taxes as % of income	Market values relative to income	Shelter costs as % of income	Rent as % of income	Average household income, 1995 (\$)
<b>Winnipeg</b>	<b>2,988</b>	<b>5.6</b>	<b>1.82</b>	<b>17.1</b>	<b>12.4</b>	<b>53,759</b>
St. John's	2,525	4.9	2.03	18.2	12.8	52,054
Halifax	1,682	3.1	2.13	18.6	14.1	52,241
Saint John	1,685	3.4	1.81	16.9	11.5	49,138
Quebec	2,109	4.0	1.90	16.1	12.3	52,570
Montreal	2,494	4.7	2.50	17.3	13.3	52,795
Ottawa-Hull	2,833	4.4	2.40	19.7	13.6	64,243
Oshawa	2,200	3.5	2.64		14.5	62,101
Toronto	2,615	4.1	3.72	21.4	15.6	64,044
Hamilton	1,933	3.2	2.74		13.8	60,889
St. Catharines/Niagara	2,120	3.9	2.51		14.6	53,674
Kitchener	2,250	3.8	2.60		13.7	59,658
London					14.2	58,671
Windsor	2,400	3.9	2.30		12.8	62,244
Sudbury					13.1	57,109
Thunder Bay					13.2	58,731
Regina	2,000	3.5	1.58	17.3	11.5	56,844
Saskatoon	1,875	3.5	1.84	17.5	12.2	53,196
Calgary	1,670	2.6	2.43	17.8	12.7	63,586
Edmonton	1,838	3.3	2.28	19.2	12.8	56,090
Vancouver	2,405	4.0	5.26	20.4	17.2	60,438
Victoria	2,200	3.7	4.10	18.8	16.3	59,585

**Sources:** Property tax data from Royal LePage, *Survey of Canadian House Prices*, Spring 2000. Income and rent are from the 1996 census, and shelter costs are from the 1998 Survey of Family Expenditures.

	Nfld	PEI	NS	NB	Quebec	Ontario	Manitoba	Sask	Alta	BC	Total
	%	%	%	%	%	%	%	%	%	%	%
<b>Federal:</b>											
PIT	20.9	21.8	22.7	21.2	16.9	23.6	22.3	19.8	25.4	24.5	21.8
CIT	2.5	3.6	2.7	3.6	4.9	4.1	3.2	2.9	6.9	4.4	4.5
GST	8.1	7.1	7.9	7.4	6.6	6.6	7.2	7.0	7.9	8.7	7.3
Other	11.2	14.8	16.2	18.2	13.0	13.4	11.6	9.9	14.1	11.7	13.1
<b>TOTAL</b>	<b>42.7</b>	<b>48.3</b>	<b>49.6</b>	<b>50.4</b>	<b>41.4</b>	<b>47.7</b>	<b>44.2</b>	<b>39.7</b>	<b>54.3</b>	<b>49.3</b>	<b>46.6</b>
<b>Provincial:</b>											
PIT	15.9	14.5	14.5	14.6	24.0	15.6	13.0	15.2	11.7	13.7	17.0
CIT	1.1	1.7	1.1	1.7	1.0	2.2	1.7	1.7	3.1	2.3	2.0
Sales	17.9	15.4	12.3	13.2	8.4	8.5	9.8	10.8	1.4	10.2	8.4
Property	0.0	5.0	0.0	3.9	0.0	0.0	2.6	0.0	4.1	3.8	1.1
Other	12.0	7.5	8.2	7.4	10.2	6.8	11.3	15.2	11.3	9.3	8.9
<b>TOTAL</b>	<b>46.9</b>	<b>44.1</b>	<b>36.2</b>	<b>40.8</b>	<b>43.7</b>	<b>33.2</b>	<b>38.4</b>	<b>42.9</b>	<b>31.6</b>	<b>39.4</b>	<b>37.4</b>
<b>Local:</b>											
<b>Property</b>	3.9	2.5	7.4	3.9	8.7	12.3	11.0	11.7	7.6	5.5	9.5
Other	1.4	0.0	1.4	0.0	1.5	2.2	1.2	1.5	1.4	0.6	1.7
CPP/QPP	5.0	5.0	5.5	5.0	4.6	4.7	5.2	4.4	5.2	5.2	4.7
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Calculated from data provided by Statistics Canada, *Provincial Economic Accounts*

<b>Table A-11: Sources of Tax Revenue as a Percent of all Tax Revenues by Province for 1998</b>											
	Nfld	PEI	NS	NB	Quebec	Ontario	Manitoba	Sask	Alta	BC	Total
	%	%	%	%	%	%	%	%	%	%	%
<b>Federal:</b>											
PIT	20.9	21.1	24.8	23.1	17.2	25.1	23.1	20.6	28.5	24.2	23.3
CIT	3.7	4.1	3.5	4.3	5.5	5.4	3.5	4.1	7.4	4.3	5.3
GST	7.9	7.9	7.9	7.8	6.2	6.2	7.0	7.0	7.8	7.8	6.6
Soc. Ins.	6.5	6.3	6.5	6.9	5.5	5.4	6.2	5.2	5.5	5.9	5.6
Other	5.1	8.9	4.9	4.9	4.1	4.4	4.3	4.6	4.9	4.6	4.5
<b>TOTAL</b>	<b>44.1</b>	<b>48.2</b>	<b>47.7</b>	<b>47.1</b>	<b>38.4</b>	<b>46.6</b>	<b>44.1</b>	<b>41.4</b>	<b>54.0</b>	<b>46.8</b>	<b>45.4</b>
<b>Provincial:</b>											
PIT	15.5	13.5	14.7	14.7	19.1	12.4	14.8	14.8	14.2	14.2	14.6
CIT	1.4	1.8	1.4	2.0	2.6	3.9	1.6	2.0	4.5	2.2	3.2
Sales	12.1	13.5	10.1	10.1	8.4	8.3	9.4	9.3	1.3	9.1	8.0
Property	0.0	3.3	0.0	3.8	0.0	0.0	1.9	0.0	3.6	3.2	0.8
Soc. Ins.	2.3	1.5	1.6	1.2	2.1	1.8	1.3	1.4	1.3	2.4	1.9
Other	13.8	8.9	10.1	9.5	15.5	10.4	11.8	14.8	8.7	9.9	11.7
<b>TOTAL</b>	<b>45.2</b>	<b>42.4</b>	<b>37.9</b>	<b>41.3</b>	<b>47.7</b>	<b>36.8</b>	<b>40.9</b>	<b>42.3</b>	<b>33.7</b>	<b>41.1</b>	<b>40.1</b>
<b>Local:</b>											
<b>Property</b>	3.4	3.0	7.4	4.9	7.6	10.9	8.6	10.4	5.5	5.4	8.5
Other	1.1	0.0	0.8	0.0	1.2	0.5	0.8	0.9	1.3	0.8	0.8
CPP/QPP	6.2	6.3	6.3	6.6	5.0	5.2	5.6	4.9	5.5	5.9	5.3
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Calculated from data provided by Statistics Canada, *Provincial Economic Accounts*

**Table A-12: Estimated Burden of Major State and Local Taxes, Family of Four with Income of \$75,000 in 1999**

City	Income Tax	Property Tax	Sales Tax	Auto Tax	Total	Total less Property Tax	Property Tax Rank	Total less Property tax
Bridgeport, CT	2,342	12,529	1,237	1,757	17,865	5,336	1	14
Newark, NJ	1,079	7,831	1,277	286	10,473	2,642	2	42
Portland, ME	3,166	5,453	1,056	641	10,316	4,863	4	26
Providence, RI	1,995	5,127	1,235	1,355	9,712	4,585	5	30
New York, NY	5,378	2,392	1,657	130	9,557	7,165	20	1
Philadelphia, PA	4,522	3,307	1,207	200	9,236	5,929	7	6
Louisville, KY	4,960	1,613	991	727	8,291	6,678	38	2
Milwaukee, WI	3,875	2,830	1,196	364	8,265	5,435	14	10
Minneapolis, MN	3,258	2,933	1,327	632	8,150	5,217	11	20
Baltimore, MD	4,040	2,891	892	320	8,143	5,252	12	18
Boston, MA	3,504	3,215	803	565	8,087	4,872	8	25
Washington, DC	4,719	1,517	1,353	356	7,945	6,428	42	3
Detroit, MI	4,892	1,378	1,051	300	7,621	6,243	44	4
Des Moines, IA	3,216	2,638	1,232	399	7,485	4,847	17	27
Columbia, SC	3,256	1,708	1,147	1,267	7,378	5,670	36	7
Manchester, NH	0	6,454	398	517	7,369	915	3	50
Honolulu, HI	3,916	1,698	1,315	438	7,367	5,669	37	8
Atlanta, GA	2,797	2,055	1,727	697	7,276	5,221	24	19
Columbus, OH	3,877	1,961	1,119	317	7,274	5,313	28	15
Los Angeles, CA	2,060	2,883	1,485	841	7,269	4,386	13	31
Salt Lake City, UT	3,548	1,267	1,893	516	7,224	5,957	48	5
Virginia Beach, VA	3,018	1,847	1,362	990	7,217	5,370	30	13
Boise, ID	3,759	1,771	1,247	396	7,173	5,402	33	12
Jackson, MS	2,192	1,964	1,374	1,608	7,138	5,174	27	22
Charlotte, NC	3,533	1,604	1,275	617	7,029	5,425	39	11
Omaha, NE	2,699	2,131	1,464	543	6,837	4,706	22	28
Little Rock, AR	3,040	1,527	1,648	613	6,828	5,301	41	17
Chicago, IL	1,912	2,797	1,688	351	6,748	3,951	15	37
Burlington, VT	2,092	3,340	1,009	286	6,727	3,387	6	40
Portland, OR	4,301	2,044	0	317	6,662	4,618	25	29
Charleston, WV	3,230	1,312	1,266	816	6,624	5,312	46	16
Wichita, KS	2,677	1,533	1,426	875	6,511	4,978	40	24
Oklahoma City, OK	3,269	1,296	1,543	397	6,505	5,209	47	21
Birmingham, AL	3,423	978	1,522	559	6,482	5,504	51	9
Kansas City, MO	2,999	1,361	1,291	800	6,451	5,090	45	23
Billings, MT	3,516	2,109	63	723	6,411	4,302	23	32
Albuquerque, NM	2,491	1,876	1,498	252	6,117	4,241	29	33
Phoenix, AZ	1,530	2,014	1,796	576	5,916	3,902	26	38
New Orleans, LA	1,895	1,745	1,866	337	5,843	4,098	34	35
Seattle, WA	0	2,968	1,738	951	5,657	2,689	10	41
Indianapolis, IN	2,788	1,462	1,144	198	5,592	4,130	43	34
Wilmington, DE	3,380	1,712	0	284	5,376	3,664	35	39
Fargo, ND	1,230	2,739	1,040	321	5,330	2,591	16	43
Denver, CO	2,030	1,118	1,295	768	5,211	4,093	49	36
Sioux Falls, SD	0	3,013	1,685	251	4,949	1,936	9	47
Houston, TX	0	2,429	1,615	330	4,374	1,945	19	46
Memphis, TN	0	1,835	1,933	254	4,022	2,187	31	44
Jacksonville, FL	0	2,432	1,241	348	4,021	1,589	18	49
Las Vegas, NV	0	1,777	1,265	550	3,592	1,815	32	48
Cheyenne, WY	0	1,092	1,291	658	3,041	1,949	50	45
Anchorage, AK	0	2,384	89	205	2,678	294	21	51
<b>Unweighted Average</b>	3,129	2,586	1,291	565	6,968	4,382		
<b>Median</b>	2,999	2,014	1,277	516	6,837	4,863		

Source: Government of the D.C. Tax Rates and Tax Burdens in the District of Columbia – A Nationwide Comparison, 1999<sup>7</sup> July 2000.

Municipal Services	Nfld.	Prince Edward Island	Nova Scotia	New Bruns.	Quebec	Ontario	Manitoba	Sask.	Alberta	British Columbia	Yuko		
General Administration	13.9	13.8	6.9	9.5	11.9	9.0	12.1	13.2	10.9	9.6	∴		
Protection	8.7	23.7	16.6	23.6	17.7	14.3	16.5	15.3	13.9	18.3	∴		
Transportation	25.5	23.2	16.5	21.3	22.9	17.4	20.6	29.8	28.0	14.5	∴		
Health	0.0	0.0	0.1	0.2	0.0	4.6	4.7	1.0	1.6	3.0			
Social Services	0.1	0.0	10.9	0.0	0.8	25.1	7.6	0.7	1.7	0.2			
Education	0.0	0.0	15.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0			
Resource Conservation	0.5	1.2	0.5	2.2	1.9	1.4	2.1	6.6	3.2	1.2			
Environment	21.4	17.0	17.6	22.5	16.1	12.7	14.8	15.7	13.5	22.1	∴		
Recreation/Culture	11.5	15.5	7.4	13.8	11.7	8.9	10.6	14.0	14.0	17.5	∴		
Housing	0.6	0.0	0.6	0.1	3.3	1.7	0.4	0.1	0.5	0.7			
Regional Planning	1.1	1.4	2.8	1.4	1.8	1.1	1.5	0.9	2.7	1.9			
Debt Charges	16.6	4.1	4.4	5.2	11.6	3.2	9.0	2.1	9.9	9.5			
Other	0.0	0.0	0.0	0.0	0.1	0.6	0.1	0.5	0.0	1.5			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		

Source: Calculated from Financial Management Series data, Statistics Canada.

**Table A-14: Effective Tax Rates for the Largest City in each U.S. State, 1998**

	<b>Multi-Res.(\$600k)</b>	<b>Comm'l (\$1m)</b>	<b>Ind'l (\$1m)</b>
Alabama	1.134%	1.166%	0.977%
Alaska	1.760%	1.774%	1.811%
Arizona	1.256%	3.194%	2.741%
Arkansas	1.098%	1.120%	1.183%
California	1.053%	1.053%	0.842%
Colorado	0.741%	2.024%	1.647%
Connecticut	4.762%	3.235%	2.422%
Delaware	1.312%	0.945%	0.567%
District of Columbia	1.544%	2.254%	2.033%
Florida	2.792%	2.845%	2.262%
Georgia	1.873%	1.883%	1.906%
Hawaii	0.321%	0.678%	0.407%
Idaho	1.710%	1.723%	1.396%
Illinois	2.896%	6.018%	3.420%
Indiana	2.121%	2.284%	1.396%
Iowa	4.233%	3.704%	2.556%
Kansas	1.090%	2.528%	2.054%
Kentucky	1.155%	1.241%	0.978%
Maine	2.418%	2.423%	1.945%
Maryland	2.597%	3.030%	1.515%
Massachussetts	1.282%	3.201%	1.921%
Michigan	3.215%	3.453%	3.027%
Minnesota	3.778%	4.47%	2.682%
Mississippi	2.087%	2.131%	1.765%
Missouri	1.317%	2.615%	2.032%
Montana	1.445%	1.650%	1.608%
Nebraska	2.243%	2.263%	1.838%
Nevada	1.027%	1.018%	0.821%
New Hampshire	3.235%	2.830%	1.698%
New Jersey	3.722%	4.971%	2.983%
New Mexico	1.036%	1.209%	0.997%
New York	3.690%	3.443%	2.066%
North Carolina	1.255%	1.255%	1.004%
North Dakota	2.089%	1.829%	1.098%
Ohio	1.572%	1.376%	1.794%
Oklahoma	1.152%	1.195%	1.315%
Oregon	1.358%	1.454%	1.265%
Pennsylvania	2.493%	3.402%	2.041%
Rhode Island	3.699%	3.938%	2.574%
South Carolina	1.438%	1.637%	2.196%
South Dakota	2.257%	1.975%	1.185%
Tennessee	2.258%	2.214%	1.709%
Texas	2.706%	2.743%	2.764%
Utah	1.008%	1.395%	1.130%
Vermont	1.921%	2.422%	1.939%
Virginia	1.551%	1.624%	1.019%
Washington	1.105%	1.119%	0.914%
West Virginia	2.041%	1.711%	1.771%
Wisconsin	2.733%	2.645%	1.511%
Wyoming	0.753%	0.753%	0.729%
Avg. without Louisiana	1.987%	2.261%	1.709%
Median without Louisiana	1.735%	2.078%	1.737%

Source: 50-State Property Tax Comparison Study, Minnesota Taxpayers Association, January 1999.

**Table A-15: Tax Ratios for the Largest City in each U.S. State, 1998**

	<b>Multi-Res.(\$600k)</b>	<b>Comm'l (\$1m)</b>	<b>Ind'l (\$1m)</b>
Alabama	2.8279	2.9077	2.4364
Alaska	1.1458	1.1549	1.1790
Arizona	1.3956	3.5489	3.0456
Arkansas	1.0691	1.0906	1.1519
California	1.2702	1.2702	1.0157
Colorado	1.1688	3.1924	2.5978
Connecticut	2.9763	2.0219	1.5138
Delaware	1.3212	0.9517	0.5710
District of Columbia	3.4235	4.9978	4.5078
Florida	1.7990	1.8331	1.4575
Georgia	1.3475	1.3547	1.3712
Hawaii	2.5276	5.3386	3.2047
Idaho	1.8114	1.8252	1.4788
Illinois	1.3389	2.7822	1.5811
Indiana	1.7022	1.8331	1.1204
Iowa	2.2685	1.9850	1.3698
Kansas	1.1683	2.7095	2.2015
Kentucky	1.1042	1.1864	0.9350
Maine	1.1438	1.1462	0.9201
Maryland	1.2888	1.5037	0.7519
Massachussetts	2.0982	5.2390	3.1440
Michigan	1.5375	1.6514	1.4476
Minnesota	3.3493	3.9637	2.3777
Mississippi	2.1968	2.2432	1.8579
Missouri	1.1876	2.3580	1.8323
Montana	1.2112	1.3831	1.3479
Nebraska	1.1467	1.1570	0.9397
Nevada	1.1578	1.1477	0.9256
New Hampshire	1.0885	0.9522	0.5713
New Jersey	1.0883	1.4535	0.8722
New Mexico	1.2870	1.5019	1.2385
New York	5.4185	5.0558	3.0338
North Carolina	1.1430	1.1430	0.9144
North Dakota	1.2472	1.0919	0.6555
Ohio	1.2476	1.0921	1.4238
Oklahoma	1.3333	1.3831	1.5220
Oregon	1.1747	1.2578	1.0943
Pennsylvania	1.0882	1.4849	0.8909
Rhode Island	1.9106	2.0341	1.3295
South Carolina	2.8645	3.2610	4.3745
South Dakota	1.4858	1.3002	0.7801
Tennessee	1.8137	1.7783	1.3727
Texas	1.6714	1.6943	1.7072
Utah	1.1694	1.6183	1.3109
Vermont	1.0884	1.3722	1.0986
Virginia	1.3245	1.3868	0.8702
Washington	1.1486	1.1632	0.9501
West Virginia	2.8506	2.3897	2.4735
Wisconsin	1.1806	1.1425	0.6527
Wyoming	1.1426	1.1426	1.1062
Avg. without Louisiana	1.6750	2.0095	1.5705
Median without Louisiana	1.3050	1.5028	1.3387

Source: 50-State Property Tax Comparison Study, Minnesota Taxpayers Association, January 1999.



## Appendix B: Winnipeg Taxes on Commercial Property

### *Winnipeg taxes Commercial Property More Favorably Than Other Cities*

The residential tax burden will vary with the amount of residential versus non-residential assessment in a municipality and with the differential tax treatment of these two property types. For example, a municipality with a high proportion of non-residential assessment and relatively higher non-residential tax rates will be able to levy a lower tax rate on residential properties.

The tax treatment of residential and non-residential properties in Winnipeg differs from other Canadian municipalities.

#### II.1 Tax Ratios across Canadian Cities

**Table 7: Estimated Tax Ratios for Selected Canadian Cities**

City	Tax Ratios
Vancouver	Major industry - 10.2 Light industry - 4.99 Business - 4.97 Utilities - 10.0
Calgary	Multi-residential - 1.00 Non-residential - 3.00
Regina	Condominiums - 1.00 Multi-residential - 1.63 Commercial/industrial - 1.85
Winnipeg	Condominiums/Multi-residential - 1.09 Commercial/industrial - 1.44
Hamilton	Multi-residential - 3.06 Commercial - 2.32 Industrial - 3.63
Toronto	Multi-residential - 5.24 Commercial - 4.28 Industrial - 5.96
Ottawa	Multi-residential - 2.34 Commercial - 1.96 Industrial - 2.24
Halifax	Non-residential (urban) - 2.53 Non-residential (suburban) - 2.8 Non-residential (Halifax) - 2.55

Source: Ontario city information from the Municipal Finance Officers Association. Other information was collected directly from cities.

***Winnipeg taxes non-residential properties substantially less on a relative basis than other Canadian cities.***

Table 7 shows a sampling of tax ratios for non-residential property classes for selected Canadian cities. Most cities in Canada levy a higher tax rate on non-residential properties than on residential properties. With the exception of Vancouver where the tax ratio is close to 5 on business properties and 10 or over for major industries and utilities, the tax ratios on commercial and industrial properties in Winnipeg were the lowest of the Canadian cities examined. They are lower than the tax ratios found in American cities (see Appendix table A-15).

Winnipeg taxes commercial properties much more favourably than other Canadian cities.

## Appendix C: Terms and Descriptions

1. **Unweighted average** – The average value for each municipality/neighbourhood is summed and divided by the number of municipalities/neighbourhoods. Each municipality or neighbourhood regardless of size carries the same weight or importance.
2. **Weighted average** – Each municipality/neighbourhood is assigned a weight that reflects its size as measured by population or number of households. The weighted value for each municipality/neighbourhood is summed and divided by total population or households in the sample. Here, larger municipalities as measured by population or households will carry greater weight in affecting the average for the entire sample.
3. **Median** – When the values for each municipality/neighbourhood are arranged in ascending or descending order, the median value is the mid-point of the range. For example, if there are 31 municipalities or neighbourhoods, the median is the value assigned to the 16<sup>th</sup> municipality or neighbourhood after all municipalities or neighbourhoods are arranged in either ascending or descending order.
4. **Rank correlation** – This is calculated by arranging two different sets of data (property values and property taxes, for example) in ascending or descending order and assigning each observation in each data set a value of 1, 2, 3...., and so on, from highest to lowest or vice versa. If there is perfect correlation between the two sets of data, the correlation coefficient will be one. If there is no correlation at all, the coefficient will be zero. A correlation coefficient with an absolute value in the range of 0.8 or better suggests a statistically significant relationship between the two sets of data. Lower values suggest much less correlation between the two sets of data.
5. **Effective Tax Rate** – It is calculated as the ratio of total tax liability divided by a property's market value. To illustrate:  $ETR = (\text{Taxes}/\text{market value})$ .
6. **Tax ratio** – It is the ratio of the effective tax rate for commercial, or industrial, or multi-residential property relative to residential property. For example, the tax ratio =  $(\text{ETR for commercial}/\text{ETR for residential})$ .
7. **Methodology for Edmonton Study** – The City of Edmonton conducts an annual survey of property taxes and utility charges for an average single-family house in major Canadian cities to assess the relative burden on Edmonton property taxpayers. For these cities, the average single-family house is defined as a ten to fifteen year-old detached three-bedroom bungalow with a main floor area of 1,200 square feet, with a one-car garage and full basement but no recreation room or fireplace, on a 5,500 square-foot lot. Each city in the sample provided information on property taxes and utility charges that would be applied to this property if it were located in each of the cities in the sample.
8. **Methodology for Royal LePage Data** – Housing values in the Royal LePage Survey are Royal LePage opinions of fair market value in each location, based on local data and market knowledge provided by Royal LePage residential real estate experts. Seven categories of housing are surveyed, including four types of detached homes, townhouses and condominium high-rise apartments.

**Detached bungalow** – a detached three-bedroom single storey home with 1½ bathrooms and a one-car garage. It has a full basement but no recreation room, fireplace or appliances. Using outside dimensions (excluding garage), the total area of the house is 111 sq. metres (1,200 sq. ft.) and it is situated on a full-serviced, 511 sq. metre (5,500 sq. ft.) lot. Depending on the area, the construction style may be brick, wood, siding or stucco.

**Executive Detached Two-Storey** - a detached two-storey, four bedroom home with 2½ bathrooms, a main floor family room, one fireplace and an attached two-car garage. There is a full basement but no recreation room or appliances. Using outside dimensions (excluding garage), the total area of the house is 186 sq. metres (2,000 sq. ft.) and it is situated on a full-serviced, 604 sq. metre (6,500 sq. ft.) lot. Depending on the area, the construction style may be brick, wood, aluminum siding or stucco or a combination like brick and siding.

**Standard Two-Storey** – a three-bedroom, two-storey home with a detached garage. It has a full basement but no recreation room. Using outside dimensions, the total area of the house is 139 sq. metres (1,500 sq. ft.) and it is situated on a full-serviced, city-sized lot of approximately 325 sq. metres (3,500 sq. ft.) lot. The house may be detached or semi-detached and construction style may be brick, wood, siding or stucco.

**Standard Townhouse** – Either condominium or freehold, the townhouse (rowhouse) has three bedrooms, a living room and dining room (possibly combined) and a kitchen. Also included are 1½ bathrooms, standard broadloom, a one-car garage, a full unfinished basement and two appliances. Total inside area is 92 sq. metres (1,000 sq. ft.). Depending on the area, the construction style may be brick, wood, siding or stucco.

**Senior Executive** - a two-storey, four- or five-bedroom home with 3 bathrooms, main floor family room plus atrium or library. Two fireplaces, a full unfinished basement and an attached two-car garage. The house is 279+ sq. metres (3,000+ sq. ft.) and is situated on a fully-serviced 627 sq. metre (6,750 sq. ft.) lot. Construction may be brick, stucco, siding or any combination.

**Standard Condominium Apartment** – A two-bedroom apartment with living room, a dining room (possibly combined) and a kitchen, in a high-rise building with an inside floor area of 84 sq. metres (900 sq. ft.). Amenities include standard broadloom, 1½ bathrooms, 2 appliances, a small balcony and 1 under ground parking space. Common area includes a pool and some minor recreational facilities.

**Luxury Condominium Apartment** – A two-bedroom apartment with a living room, a dining room (possibly combined) and a kitchen, with family room or den, in a high-rise building with an inside floor area of 130 sq. metres (1,400 sq. ft.). Amenities include upgraded broadloom, 2 full bathrooms, ensuite laundry and storage areas, 5 appliances, a large balcony and 1 under ground parking space. Common area includes a pool, sauna and other major recreational facilities.

9. **Methodology for Minnesota study** - The study was released in January 1999 by the Minnesota Taxpayers Association in cooperation with The National Taxpayers Conference. It is based on taxes payable for the year 1998. The study compares effective property tax rates for four classes of property -- residential homestead, commercial, industrial, and apartments – in the largest urban area in

each state. Because the assessed value of properties varies across states, the tax calculations account for the effects of local assessment practices as well as statutory tax provisions.

10. ***Methodology for District of Columbia study*** - The hypothetical family comprises two wage-earning spouses and two school-age children. The gross family income levels used are \$US 25,000, \$US 50,000, \$US 75,000, \$US 100,000 and \$US 150,000. The wage and salary split is assumed to be 70-30 between the two spouses. All other income is assumed to be split evenly. Each family is assumed to own a single family home and to reside within the confines of the city.

Several assumptions are used to calculate each major tax type and these can be found in the study. In the case of the property tax, for example, property values are based on income levels. The ratio of median housing to income is calculated for each city and this estimate is used to determine housing values for the two middle-income levels. The ratio is reduced for the higher income levels and increased for the lowest income level. Property tax rates are applied to housing values in each jurisdiction to determine property taxes. Various exemptions and credits are also taken into account.