An Examination of the Administration
of the Property Tax in
Metropolitan Toronto

by

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Introduction

The purpose of this study is to examine the administration of the property tax in Metropolitan Toronto. Metropolitan Toronto has a population of 2.2 million people, and is comprised of six boroughs: the City of Toronto, East York, North York, York, Scarborough and Etobicoke (See map 1).

In order to examine the administration of the property tax, one must consider two aspects - the mill rate and the assessment practices.

In each borough the total property tax levied against each property is calculated according to three separate mill rates which are applied to the assessed value of properties. There is the Metro mill rate which is used to finance Metro provided services such as police protection, the education mill rate which helps to finance the Metropolitan Toronto educational system, and each borough's mill rate which is used to finance the services provided by each of the six boroughs.

Typically, when more revenues are required from the property tax, local government has two choices available to obtain the required tax yield, either raise the mill rate or reassess all of the property which is taxed. It is much more administratively simple and politically acceptable to raise the mill rate than to reassess the property.

In Ontario local municipalities no longer have this choice. Since the assessment function was taken over by the Province in 1970, municipalities raise the mill rate when more revenue is required. Municipalities may also try to attract land uses to locate within their boundaries which will enhance their assessment base.

In each borough, one would expect to find different effective tax rates (ratio of the annual tax bill to market value) among the various classes of property resulting from two inherent biases - the use of split mill rates and the traditionally non-uniform assessment base. A split mill rate simply applies different mill rates to residential and commercial properties, and is biased towards heavier commercial taxation. Table 1 lists the 1977 residential and commercial mill rates for the six boroughs in Metropolitan Toronto.

The commercial mill rate is higher than the residential mill rate for all municipalities due to Provincial statut ry requirements. Provincial law requires that the commercial mill rate be 10% higher than the residential mill rate for the education levy and 15% higher for the general municipal levy.[1]

Assessment practices, traditionally, have not been uniform across municipalities in Ontario or among the boroughs in Metropolitan Toronto. Until 1970 the assessment function was carried out by each local government. At that point in time the assessment function was taken over by the Province of Ontario to have uniform assessment practices in all municipalities by moving to a system of market value assessment. To date, the implementation of the reform has been delayed for a number of practical and political reasons. This has left Ontario with the assessment structure that existed in 1970 since no reassessments have taken place due to the impending reform.

MAP I

METROPOLITAN TORONTO BOROUGHS

SCARBOROUGH

EAST YORK

NORTH YORK

CITY OF TORONTO

YORK

ETOBICOKE

LAKE ONTARIO
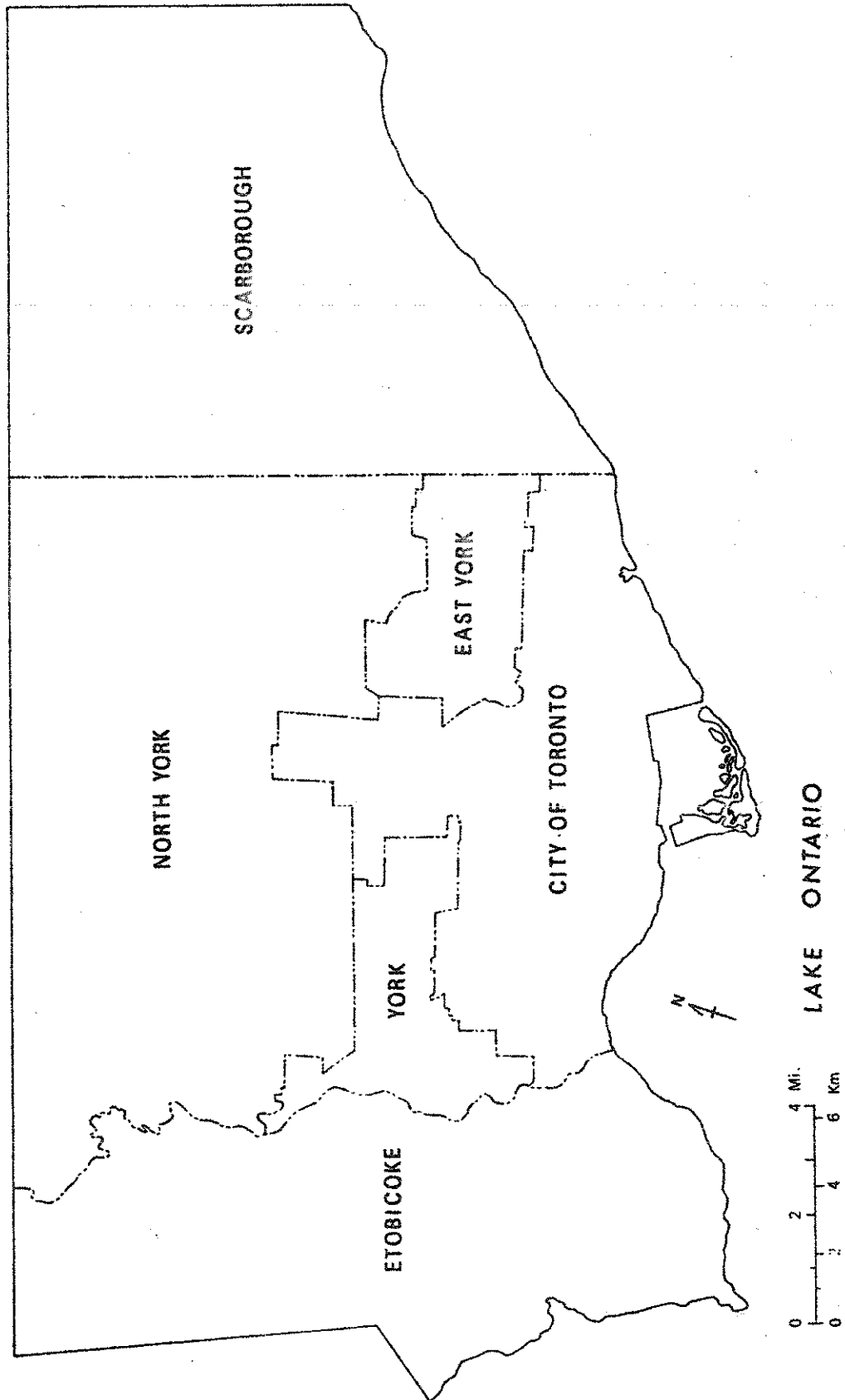
<u>TABLE I</u>   <u>1977 MILL RATES FOR THE BOROUGHS OF METROPOLITAN TORONTO*</u>

City of Toronto	Residential	155.60
	Commercial	178.06
East York	Residential	149.35
	Commercial	170.56
Etobicoke	Residential	150.19
	Commercial	171.59
North York	Residential	144.32
	Commercial	164.67
Scarborough	Residential	158.63
	Commercial	181.33
York	Residential	156.73
	Commercial	179.41

* In all boroughs where a distinction is made between public and separate
   school tax support, the mill rate listed applies to public school support.

Therefore the assessment practices and structure that underlie this study are those that were devised by the individual boroughs prior to 1970. Under this assessment system each local government used different approaches to assessing different classes of property. Thus it would be expected that different municipalities would display different average assessment to sales ratios and average effective tax rates for various classes of properties.[2] The variation across Metropolitan Toronto is not as great as the variation across the Province. This is to be expected as two of the three mill rates are common to all boroughs in Metro Toronto. Moreover, overt anomalies in assessment practices would draw taxpayers concern.

Local governments used assessment practices along with the split mill rates to place higher tax burdens upon certain classes of property. For example, apartment buildings, generally, are assessed at a higher percentage of market value than single family residences; and non-residential properties, generally, are assessed at a higher percentage of market value than residential property.

This study examines the administration of the property tax in Metropolitan Toronto by examining the assessment to sales (price) ratios, the coefficient of dispersion of assessment, the vertical equity, and the effective tax rates. The analyses are carried out for various classes of property in the six boroughs.

The analysis of assessment to sales ratios demonstrates the assessment bias that exists in a borough towards a particular class of property. It also demonstrates how the bias may vary across boroughs. Within a particular property class in a given borough, the distribution of assessment to sales ratios gives an indication of the consistency with which properties are assessed.

The coefficient of dispersion is a statistical measure of the variation in assessment for a given class of property in a particular tax jurisdiction. Although it has been criticized as not being a very good measure, it has been widely used.[3] In this study it is used to compare the assessment structure among the six boroughs and provides for more reliable analysis than the comparison of coefficients of dispersion between any two municipalities with dissimilar mill rates.

Scattergrams are used to determine the vertical equity in assessment practices. There has been concern in some tax jurisdictions that higher-value properties are assessed at a lower percentage of market value than lower-valued properties.[4]

The last measure of property tax assessment which will be examined is the effective tax rate. This measure combines the assessment bias with the mill rate bias and expresses the property tax paid as a percentage of market value. Property tax payers may be more interested in this measure since it is more closely related to the property taxes paid. However, this measure has the disadvantage of not clearly separating the effects of the assessment bias and the mill rate bias. To separate the effects, it is necessary to examine the assessment to sales ratios and the structures of the mill rate.

Before discussing the analyses, it is necessary to describe the data and discuss the representativeness of the data.

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The Data

The data sources for the study were Teela Market Surveys and Municipal Records. The Teela Industrial Commercial Investment (ICI) Annual Report was used to collect information regarding sales prices and assessment values for industrial, commercial and investment properties, while the Teela Annual Report for Metropolitan Toronto was used to record sales prices for single-family residential properties. The assessments for these properties were obtained from the municipal assessment rolls in the appropriate borough. The mill rates for 1977 were also obtained from each of the borough's municipal offices.

The data selection process was different for the ICI and the single-family residential properties. The 1976 and 1977 ICI Reports were used to obtain information regarding the industrial, commercial and investment properties. Due to the complexities involved in attempting to understand how multiuse properties are assessed only those properties reporting one land use were selected. Also, the ICI Report did not record what percentage of the building was used for different purposes. This distinction is important since presumably assessors separate the building into various uses for assessment purposes. The sample size for the ICI properties was slightly over twelve hundred properties when this data selection process was completed.

A two percent sample was drawn from the 1977 Teela Annual Report for Metropolitan Toronto to analyze single-family residential properties. This selection process reduced the more than 40,000 sales to a manageable size, given the resources available. The result was a statistical sample of 800 single-family property sales.

The question must be asked: "How representative is this data of the property tax base for Metropolitan Toronto?" Obviously the best data for these types of studies is in the hands of the Ministry of Revenue of the Province of Ontario. Unfortunately, the Province makes only a limited amount of classed data available for independent researchers. Thus the question of data representativeness is important. This concern has been stressed by Shenkel in undertaking assessment of sales ratio studies but in this paper it applies to all of the analyses undertaken.[5]

As previously mentioned, the observations of single-family residential properties are a two percent sample of properties sold during 1977. This leads to the question of whether or not any bias exists in the sample since it is only comprised of properties that were sold during 1977. This question is very difficult to answer, and will remain unresolved for this study. In order to carry out assessment to sales ratio analysis and calculate coefficients of dispersion market sales are required. Therefore the problem of this type of bias is unavoidable. Although a sample greater than two percent would be desirable, time and financial constraints made a larger sample size impossible.

Another concern arises with regard to whether or not the recorded sale prices reflect true market values. This is very difficult to detect unless both the buyer and the seller have the same surname or the sales price is extremely low, two dollars for example. In undertaking these analyses the

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assumption was made that any single-family property with a recorded sale price of less than $30,000 is a non-market sale and therefore eliminated from the sample. This assumption is based on an understanding that in the Metro Toronto housing market, very few dwelling units have a true market value of less than $30,000.[6] The multifamily residential sample is comprised of residential properties from the ICI Reports that had a sale price greater than $100,000.

There is also concern regarding the representativeness of the observations used for the analysis of the Industrial, Commercial and Investment properties. As with the single family residential properties, there is the potential bias of dealing only with properties that have transacted in the market. There are two other potential problems that must be mentioned: the use of 1976 and 1977 sales, and selecting only single-use industrial, commercial and investment properties.

It was decided to disregard any possible price changes that might exist between 1976 and 1977 sales for ICI observations. Previous experience with price trends in single-family house prices during a two-year time period suggests that the price increases are not very significant.[7] It would be expected that price trends would be less significant in ICI properties unless there was a significant economic event or policy change. Examples are the removal of rent control, the abolition of the land speculation tax, or downzoning which dramatically reduce the potential for commercial development. The last example, downzoning or reducing the density in the core area of the City of Toronto, occurred during the two-year study period. However, the nature of the effects may be different on commercial properties that are in the downzoned area than the properties outside the downzoned areas.[8] The exact effects of policies and economic stimuli are difficult to discern. Also there is no simple price index which would be used accurately to inflate the 1976 sales to 1977 prices for each ICI property type. In fact, the magnitude of the change, in all likelihood, is very small and may be negative.

The decision to use only single-use properties, all multifamily residential, and all commercial, etc., is basically a sound approach in these analyses since properties are separated by class. One would expect that assessors would have greater consistency in assessing single-use properties. Multiuse properties, by their very nature, are prone to less assessment consistency. It would not be appropriate to lump all multiuse properties in a separate class since the buildings will be less homogeneous than any single-use properties. This is the case since the multiuse properties have various percentages of the buildings allocated to different uses. The assessment rolls do not give us information regarding what percentage of a multiuse building is assessed for a particular use.

A final point to be made regarding the data is that in the analysis where the property tax paid is related to market values, the effective tax rate analysis, the property tax is a calculated property tax. The tax is calculated by multiplying the appropriate mill rate by the assessed value of the property. The alternative would be the use of the actual property tax paid by each property owner. Although the calculated tax may differ from the actual tax paid because of tax arrears, special assessments, or special exemptions, for effective tax rate analysis, the calculated taxes have been selected as the best measure.

Assessment to Sales Ratio Analysis

The use of assessment to sales ratios is not a new way of examining the administration of the property tax.[9] The state of Kansas published sales assessment ratio studies in 1897.

Assessment to sales ratio studies are a very useful tool in the administration of the property tax. The ratios may be compared among various tax jurisdictions in order to equalize assessments within a Province or State.[10] Equalized assessments are required in the Province of Ontario for the equitable distribution of Provincial grants to the municipalities. Some Provincial grants are given to municipalities on the basis of the total value of equalized assessment in the municipality. In order to treat the municipalities fairly, it is necessary to undertake a process of equalizing assessments.[11]

A second use of assessment to sales ratios is to establish a benchmark by which newly developed or redeveloped properties can be equitably reassessed. For example, if the assessment authority is aware that the mean current assessment to sales ratio for a particular class of property is 10%, it can check to see if the properties that are reassessed in that particular class of property are assessed at a value that is reasonably close to that mean. Although the Assessment Standards Branch of the Provincial Ministry of Revenue undertakes a complex approach to assessing properties, it has been suggested by people involved in the process that when property owners appeal their assessments the Province's defensible position is the current mean assessment to sales ratio for that class of property in the particular municipality.

In some tax jurisdictions there are legal requirements regarding equal assessment to sales ratios for all properties within a given property class. Analyses of assessment to sales ratios in these jurisdictions, such as the study by Oldman and Aaron, are useful in revealing inconsistent assessment practices.[12]

The purpose of this analysis of assessment to sales ratios is to gain an understanding of the biases that exist in the Municipality of Metropolitan Toronto between various types of property and the differences that exist among the six municipalities within a given type of property. It is important to note that the current assessment structure is the result of past assessments carried out by each individual municipality.

Table II displays the mean assessment to sales ratios for six property types for all of Metropolitan Toronto. Income producing properties such as multifamily residential properties, commercial properties, or profit generating properties such as industrial properties, tend to have higher assessment to sales ratios than properties that are used to provide basic services to an owner/occupier, single-family residential properties. Presumably the bias is intentional on the part of the assessment agencies.

There are several possibilities why the bias exists. The bias may be based on the logic that properties generating income have a greater capability to pay property taxes or that, as suggested by Paul, homeowners are particularly sensitive to property taxes. Therefore the major burden is

TABLE II   METROPOLITAN TORONTO

MEAN ASSESSMENT TO SALES RATIOS BY PROPERTY TYPE

	% Mean	% Std. Dev.	# of observations
Industrial	21.7	16.9	83
Commercial	17.4	22.5	741
Vacant commercial	16.0	16.7	91
Multi-family Residential	21.3	38.3	224
Single-family Residential	8.5	3.5	721
Vacant Residential	5.9	8.0	30

shifted away from owner occupied property.[13]

Both vacant property types, vacant residential and vacant commercial, have mean assessment to sales ratios that are lower than developed properties designated for the same use. The differential between the assessment of vacant and developed properties is greater for the residential property types. The comparison between vacant residential, 5.9, and multifamily residential, 21.3, is particularly striking. No further explanations for this large differential can be given without more information regarding the zoning of the vacant residential properties and a better understanding of assessment practices.

The results depicted in Table II are not totally unexpected. The Province has made some very limited information regarding recent assessment to sales ratios available to the public. Their results, for Metropolitan Toronto, based on 1975 data, indicate an assessment to sales ratio for single-family residential of 8.9 and a ratio of 21.7 for multifamily residential properties. These results are very close to the results obtained in this study.[14] The Province has not made available any recent assessment to sales ratios for other types of properties, or for any property type by muncipality in Metropolitan Toronto.

Table III displays the mean assessment to sales ratio by property type for each municipality in Metropolitan Toronto.

A comparison of the mean for industrial properties indicates a range from 26.7 in Etobicoke to 16.4 in North York. When the data is disaggregated by municipality, the results are less statistically significant because of the low number of observations in all the municipalities except Scarborough and the City of Toronto.

Each municipality, however, has sufficient commercial property sales for analysis. Again, Etobicoke has the highest mean assessment to sales ratio, 20.8. This suggests that Etobicoke places a significant tax burden on both industrial and commercial properties by its assessment bias. The lowest mean commercial assessment to sales ratio is 15.6 and occurs in Scarborough.

The number of vacant commercial observations is small except for the City of Toronto. In the City of Toronto, the mean assessment to sales ratio for vacant commercial property is 18.0, which is not only above the mean for Metropolitan Toronto, but also greater than the mean assessment to sales ratio for developed commercial property in the City of Toronto, 16.7. This is not the case in any of the other municipalities. This result can only be attributed to the assessment practices of the City of Toronto prior to the Province taking over the assessment function in 1970.

The range of the mean assessment to sales ratios for multifamily residential properties is particularly striking. Scarborough data yields the highest ratio, 34.5 which is more than twice the lowest ratio, 15.0, that exists for the City of Toronto. This broad range must be attributable to factors other than simply assessment practices in the two municipalities.

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TABLE III

MEAN ASSESSMENT/SALES RATIO BY MUNICIPALITY & PROPERTY TYPE

		% Mean	% Std. Dev.	# of observations
Toronto	Industrial	24.2	23.3	32
	Commercial	16.7	25.3	360
	Vacant Commercial	18.0	20.0	59
	Multi-family Residential	15.0	7.8	106
	Single-family Residential	8.2	3.4	198
	Vacant Residential	14.0	11.6	5
East York	Industrial	20.3	11.5	9
	Commercial	16.0	8.4	29
	Vacant Commercial	13.0	1.2	6
	Multi-family Residential	26.5	15.4	13
	Single-family Residential	8.3	1.6	34
	Vacant Residential	0.3	0.2	2
Etobi-coke	Industrial	26.7	20.2	8
	Commercial	20.8	25.4	99
	Vacant Commercial	14.8	5.1	5
	Multi-family Residential	23.1	18.4	37
	Single-family Residential	8.7	3.2	94
	Vacant Residential	3.4	3.0	4
North York	Industrial	16.4	2.0	4
	Commercial	18.6	22.3	103
	Vacant Commercial	9.8	5.4	5
	Multi-family Residential	28.4	55.2	32
	Single-family Residential	8.5	2.2	162
	Vacant Residential	2.9	2.7	12

TABLE III

MEAN ASSESSMENT/SALES RATIO BY MUNICIPALITY & PROPERTY TYPE

		%Mean	Std.%Dev.	# of observations
Scar-borough	Industrial	18.3	8.2	27
	Commercial	15.6	14.1	89
	Vacant Commercial	12.6	9.3	12
	Multi-family Residential	34.5	95.3	23
	Single-family Residential	8.4	4.6	187
	Vacant Residential	8.8	12.6	5
York	Industrial	21.9	10.1	3
	Commercial	16.7	13.1	61
	Vacant Commercial	9.1	3.2	4
	Multi-family Residential	22.1	7.5	13
	Single-family Residential	9.6	3.9	46
	Vacant Residential	5.9	5.0	2

This suggests that a more careful examination of the characteristics of the multifamily properties should be undertaken. The low mean ratio for the City of Toronto may be due to the type of multifamily properties. For example, smaller multifamily properties such as properties converted to bachleorettes may be assessed at lower ratios than large high rise apartment buildings.[15]

Single-family residential properties show fairly consistent mean assessment to sales ratios among the six municipalities. York has the highest ratio, 9.6, while the City of Toronto has the lowest ratio of 8.2. The City of Toronto has the lowest ratio, and probably results from the number of properties that have graded assessment exemptions.[16]

When the data are disaggregated by municipality, the number of observations for vacant residential properties in each municipality is very small. Very little can be inferred from the results but they are included for the sake of completeness of property types.

A comparison of Table II and Table III indicates the major differences between the mean ratios for each municipality and all of Metropolitan Toronto.

The most significant aspects of the assessment to sales ratios for the City of Toronto are: the industrial mean is above the Metropolitan Toronto mean; the vacant commercial ratio is higher than the commercial ratio which is opposite to the Metropolitan Toronto result; and the ratio for all residential property types other than vacant residential is below the Metropolitan Toronto mean ratio.

Results of East York's mean assessment to sales ratios for all income or profit producing properties are below the Metropolitan Toronto mean ratios except for multifamily residential properties. The mean ratio for single-family residential properties is slightly below the mean for Metropolitan Toronto.

Etobicoke has the highest means for industrial and commercial properties which suggests that they are above those of the aggregate figures for Metropolitan Toronto. The vacant commercial ratio is slightly below the Metropolitan mean, while Etobicoke's ratios for both single and multifamily residential are slightly higher than Metropolitan Toronto's mean ratios.

Industrial properties in North York are assessed at a lower percentage of market value than are Metropolitan Toronto's properties. Commercial properties have a higher mean assessment to sales ratio than the aggregate data while vacant commercial properties have a ratio very low relative to the Metropolitan data and the ratio for North York's developed commercial property. The single family ratio is identical for both sets of data, and the multifamily property ratio is significantly higher for the North York data.

The Scarborough results indicate that only the multifamily residential properties and the vacant residential properties have mean assessment to sales ratios that are higher than the mean ratios for Metropolitan Toronto. Of these two property types, only the multifamily results are slightly high relative to the Metropolitan Toronto results.

The results for York are very similar to the aggregate results for Metropolitan Toronto. The only significant deviations from the Metropolitan mean ratios are for vacant commercial properties, where the ratio is lower for York, and for single-family residential properties where the mean ratio is higher for York.

For the frequency distributions of assessment to sales ratios by municipality and property type see Appendix A.

Coefficient of Dispersion

The coefficient of dispersion is a measure commonly used to examine assessment uniformity. Basically, the measure is the average distance from an observed assessment/sales ratio to the middle of the distribution, expressed as a percent of that middle assessment/sales value.

In mathematical terms:

$$\text{Coefficient of dispersion} = \left[\frac{\sum_{i=1}^{n} |x_i - m|}{n} \right] \frac{100}{m}$$

where:

m = median assessment/sales ratio
x_i = an observed assessment/sales ratio
n = the number of observations

The ideal value for the coefficient of dispersion would be zero, which would signify perfectly uniform assessment where all properties would have the same assessment to sales ratios. The higher the value of the coefficient of dispersion, the worse the property tax administration is in terms of assessment uniformity.[17]

It has been argued, without any statistical rationale, that a coefficient of dispersion between 0 and 10 is considered excellent, a coefficient between 10 and 20 is acceptable, and a coefficient of more than 20 suggests that attempts should be made to improve the assessment structure. This scale only pertains to non-farm single-family residential property. The greatest assessment uniformity should occur within this type of property.[18]

Table IV lists the coefficients of dispersion for single-family residential, multifamily residential, and commercial properties for each of the six municipalities. The other property types were eliminated from this analysis because of insufficient observations.

The most uniform assessment for single-family properties occurs in East York where the coefficient of dispersion is 10.8. The worst record appears to be in York, where the coefficient is 26.8. By the previously mentioned standards, East York and North York fall clearly within the acceptable range, in terms of assessment administration, while Etobicoke falls marginally within the acceptable range. Scarborough's coefficient of dispersion lies just outside the acceptable range, while the coefficients for the City of Toronto and Scarborough suggest that there is a need to improve their assessment structure.

The range of the coefficients of dispersion for multifamily properties

TABLE IV   COEFFICIENTS OF DISPERSION

Municipality	Single family Residential	Multi family Residential	Commercial
City of Toronto	24.4	40.0	66.7
East York	10.8	28.6	39.5
Etobicoke	19.7	37.7	47.1
North York	14.8	71.1	63.8
Scarborough	20.5	45.1	42.7
York	26.8	22.3	58.5

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is from a low of 22.3, in York, to a high of 71.1 in North York. The North York figure is substantially higher than the coefficient for the other five municipalities. York's coefficient is interesting since it is lower than the coefficient for single-family residential properties. This suggests that there is greater uniformity in the assessment of multifamily residential properties than in the assessment of single-family residential properties in the Borough of York.

Commercial properties have a more tightly clustered group of coefficients of dispersion. The range is from a low of 39.5, in East York, to a high of 66.7 in Toronto.

The overall pattern indicates that the coefficients for a municipality tend to be smallest for single-family residential properties and largest for commercial properties, with the coefficients for multifamily residential properties falling in between the two extremes. This relationship holds for three of the six municipalities. These results are not entirely unexpected. Single-family residential properties are the most homogeneous of the three property types, and it would therefore be expected that assessment uniformity would be the greatest for that property type. It could also be argued that the multifamily residential properties are in turn more homogeneous than commercial properties such as high rise buildings, strip developments and shopping centres.

A comparison of the coefficients of dispersion suggests that East York has the greatest assessment uniformity. It has the lowest coefficient for both single-family residential property and commercial property, as well as the second lowest coefficient for multifamily residential properties.

Vertical Equity

Another aspect that should be examined in relation to assessment practices is vertical equity. In the context of this study, vertical equity simply means assessing all properties regardless of their market value at the same percentage of market value. The analysis of the coefficients of dispersion indicated that there is imperfect assessment uniformity. The next question to address is whether or not this lack of uniformity is in the form of a bias of underassessing properties with higher market values relative to properties with lower market values. This bias has been the concern of a number of researchers.[19]

An approach to the measurement of vertical equity with respect to assessment practices has been developed by Paglin and Fogarty.[28] Their approach is the use of an index of vertical equity:

$$index = (1 - \frac{b_c}{b_e})$$

where $b_e = \frac{\Sigma \text{ Assessed values}}{\Sigma \text{ Market values (sale price)}}$

and b_c = the slope of the regression line generated by plotting assessed values to market values (sale price).

Basically, the index is the comparison of the slope of two lines. If a scattergram or graph was produced with assessed values on one axis and market value (or sale price) on the other axis, then the observations for a particular property type could be plotted and a regression line fitted to these points. The slope of this regression line could then be compared to a line which has a slope equal to the ratio of the sum of assessed values to the sum of market values or in the case of this study, sale prices. For this line to represent perfect vertical equity, it must pass through the origin of the graph (i.e., have a zero intercept).

If the index is zero, then the slope of the two lines are identical and there is perfect vertical equity. When the index is positive, a bias exists such that higher-valued properties tend to be assessed at a lower percent of market value than lower-valued properties. A negative index means that lower-valued properties enjoy the advantage of being assessed at a lower percentage of market value. The higher the absolute value of the index, the greater the vertical inequity.

Table V lists the results when this index is applied to single-family residential, multifamily residential and commercial properties. Only these three property types are analyzed due to the paucity of sales in other property types.

For single-family residential properties the best index of vertical equity is recorded for East York, .01. Both North York and York appear to have fairly good measures. The major difference between these two municipalities is that North York has a bias in favour of higher-valued properties, while York has a bias in favour of lower-valued properties. The worst indices occur in Etobicoke, -.23, and Scarborough, .21.

Two of the results for multifamily residential properties are negative, and four are positive. The largest bias in favour of lower-valued properties (negative index) is not as great as the bias for single-family residential properties, while the largest bias in favour of higher-valued properties (positive index) is .57, which is significantly higher than the highest positive value for single-family residential properties. This suggests that higher valued multifamily residential properties have assessment advantages that are greater than similar advantages for single-family residential properties. The result is interesting since higher valued properties which may be associated with a greater capacity to pay property taxes, especially when they are income producing, have an assessment bias in their favour.

The results for commercial property demonstrate that in four of the municipalities the assessment bias is against lower-valued properties. Three of these municipalities have fairly significant indices, with the highest being recorded for East York, .78. These results should cause some concern for the small businessmen's associations in these municipalities. The indices for the two other municipalities are negative, -.05 and -.10, but not very large in magnitude.

If the magnitudes of the indices are compared among the three property types, then the general trend is that the lowest figures occur for single-family properties and the highest figures are found for multifamily properties.

School of Economic Science

Chartered Province of Ontario 1939

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April 5, 1979.

Mr. Robert Clancy,
Henry George Institute,
Rm 462A,
55 West 42nd Street,
New York, New York
U.S.A.   10036

Dear Mr. Clancy:

      Just returned from New York and found your request
for our research study on my desk. Had I known that you were
interested in a copy, I could have left one with you in New York.
Our study is one-of-a-kind, being the most complete overview of
current assessment and property tax practices in Toronto.*(We're
confident that the provincial government has similar data but they
are not made public.) Consequently, the study has sparked considerable
interest by local politicians, including our Mayor, John Sewell,
who has set up a committee to investigate current inequities in
the property tax system. (John Sewell was "associated" with the
School during Mal McCarthy's days, but he has "serious reservations"
about LVT for political reasons.)   *In all fairness, I should
mention that there are several studies of blocks/neighborhoods in
Metro, but these are out-dated and were done in a cursory manner. Our
study is the only one that examines assessments/taxes in relation
to bona-fide market sales.

      I will also include a copy of our publications listings,
should you be interested in any of our other work.

      Looking forward to seeing you in San Francisco.

Sincerely,

Laire Teich.

P.S. We're moving our office as of May 1ST - our new address
is 344 WILLARD AVE., TORONTO M6S 3R2

TABLE V   INDEX OF VERTICAL EQUITY

Municipality	Single family Residential	Multi family Residential	Commercial
Toronto	.18	-.25	.05
East York	.01	.06	.78
Etobicoke	-.23	-.19	-.05
North York	.05	.30	-.10
Scarborough	.21	.57	.49
York	-.06	.45	.28

It is difficult to discern which municipality has the best overall administration in terms of vertical equity. The results suggest, however, that the worst administration by this measure is in Scarborough. The absolute value of Scarborough's index for multifamily residential properties is the greatest among the six municipalities. For the other two property types, the absolute value of Scarborough's index is the second largest. It is also interesting to note that Scarborough is the only municipality which had a positive index for all three property types. Therefore, it has a consistent bias of assessing higher-valued properties of all three types at a lower percentage of market value than lower-valued properties.

EFFECTIVE TAX RATES

The effective tax rate is the ratio of the annual tax bill to the market value of the property. As stated in the introduction, this measure is of great interest to taxpayers since it directly relates the amount of taxes paid to market value.[21] A recent example of taxpayers' awareness of effective tax rates i: the passing of Proposition 13 in the State of California. The proposition basically stated that residential properties could not be taxed at a value greater than 1% of market value. This is simply setting the maximum tax at an effective rate of 1%.

For purposes of analyzing the property tax administration, one must examine more than just the effective tax rates. Underlying the effective tax rate are both the assessment bias and the mill rate bias. The mill rate bias is very overt as different mill rates are applied to residential and non-residential properties (as depicted in Table I). The mill rates are made available to all property owners.

The assessment bias is much more covert and occurs in two separate forms. It occurs in the form of assessment practices when certain property types are assessed at higher percentages of market value (as depicted in Table II). Secondly, it occurs through assessment errors or biases when properties within a given class are not assessed equally. (These types of biases are examined in Tables IV and V).

A number of studies have used effective tax rates to examine differences among communities or within different sections of a city.[22] In this study, effective tax rates are examined by property type among the six municipalities. Variation in effective tax rates between municipalities might accompany and account for variations in the level of public services. In Metropolitan Toronto, variations in public services between the municipalities are minimal since the majority of the services are provided by the Metropolitan Government and the Metropolitan School Board.

Table VI displays the mean effective tax by property types for Metropolitan Toronto. Those property types that are income generating have higher mean effective tax rates than the mean for single-family residential properties. This pattern is consistent with the pattern for mean assessment to sales ratios. However, the strong assessment bias of assessing multifamily properties at a mean assessment to sales ratio of 21.3 is mitigated, relative to other income

TABLE VI   METROPOLITAN TORONTO

MEAN EFFECTIVE TAX RATES BY PROPERTY TYPE

Property Type	Mean (%)	Standard Deviation (%)	# of observations
Industrial	3.83	3.00	83
Commercial	3.04	3.94	741
Vacant Commercial	2.83	2.99	91
Multifamily Residential	3.34	6.48	224
Single family Residential	1.30	0.54	72?
Vacant Residential	0.90	1.26	30

producing properties, by applying the lower residential mill rate to the multifamily properties. The industrial, commercial and vacant commercial properties obviously have the commercial mill rate applied to their assessed value.

A striking difference in effective tax rates is observed between the two types of vacant property. The effective tax rate for vacant commercial property is more than three times the rate for vacant residential properties. This suggests that the holding cost of vacant commercial land is much greater than the holding cost of vacant residential land.

Table VII examines the mean effective tax rates by municipality and property type. The effective tax rates among the six municipalities for industrial properties range from a high rate of 4.58 in Etobicoke to a low of 2.71 in North York. This difference would appear to be very significant especially in terms of attracting industry to enhance the tax base. No firm conclusions can be drawn, however, regarding this type of property since the number of observations for each municipality is very small when the data are disaggregated.

The effective tax rate for commercial properties is much more consistent than for industrial properties within the six municipalities. Once again, Etobicoke has the highest mean effective rate, 3.56.

Vacant commercial properties range from 1.42 in North York and York to 2.80 in the City of Toronto. The City of Toronto rate for vacant commercial property is .18 less than the rate for developed commercial properties. This is the smallest differential between these two property types recorded among the six municipalities. It suggests that the cost of holding undeveloped commercial land in the City of Toronto is relatively high and therefore the rate might exert a pressure to develop vacant commercial land.[23]

The effective tax rates for multifamily residential properties are fairly consistent among the six municipalities except for the high mean, 6.26, for Scarborough and the low mean, 2.33, for the City of Toronto. The high rate for Scarborough is difficult to explain. The low rates in the City of Toronto, as previously discussed, may simply reflect the nature of the properties in the sample.

There is remarkable consistency in terms of mean effective tax rates among the six municipalities for single-family residential properties. York has the only mean which dramatically varies from the overall Metropolitan Toronto mean.[24] The number of observations for vacant residential properties are too few to draw any conclusion. However, the City of Toronto has a higher mean effective tax rate for vacant residential property than for single-family residential property. Also, the vacant rate is not very far below the multifamily residential rate.

The mean effective tax rates for the developed residential properties in the six municipalities, appear to be reasonably consistent. The reason for this may be that there is greater consistency in assessing these property types due to their homogeneity. The second interesting result with respect to effective tax rates is the differential between mean effective tax rates for vacant and developed properties in the City of Toronto. Only in the City of Toronto is the mean effective rate for vacant residential

TABLE VII

MEAN EFFECTIVE TAX RATES BY MUNICIPALITY AND PROPERTY TYPE

		% Mean	% Std. Dev.	# of observations
Toronto	Industrial	4.32	4.15	32
	Commercial	2.98	4.49	360
	Vacant Commercial	2.80	3.11	59
	Multi-family Residential	2.33	1.21	106
	Single-family Residential	1.27	.52	198
	Vacant Residential	2.18	1.81	5
East York	Industrial	3.49	1.96	9
	Commercial	2.73	1.44	29
	Vacant Commercial	1.95	1.86	6
	Multi-family Residential	3.96	2.31	13
	Single-family Residential	1.25	0.24	34
	Vacant Residential	0.04	0.03	2
Etobi-coke	Industrial	4.58	3.47	8
	Commercial	3.56	4.36	99
	Vacant Commercial	2.22	0.76	5
	Multi-family Residential	3.46	2.76	37
	Single-family Residential	1.30	0.49	94
	Vacant Residential	0.51	0.45	4
North York	Industrial	2.71	0.33	4
	Commercial	3.07	3.67	103
	Vacant Commercial	1.42	0.78	5
	Multi-family Residential	4.01	7.97	32
	Single-family Residential	1.23	0.31	162
	Vacant Residential	0.42	0.39	12

TABLE VII (cont'd)

MEAN EFFECTIVE TAX RATES BY MUNICIPALITY AND PROPERTY TYPE

		% Mean	% Std. Dev.	# of observations
Scar- borough	Industrial	3.31	1.48	27
	Commercial	2.84	2.55	89
	Vacant Commercial	1.99	1.47	12
	Multi-family Residential	6.26	17.28	23
	Single-family Residential	1.34	0.73	187
	Vacant Residential	1.40	2.00	5
York	Industrial	3.93	1.81	3
	Commercial	3.00	2.35	61
	Vacant Commercial	1.42	0.50	4
	Multi-family Residential	3.46	1.16	13
	Single-family Residential	1.50	0.62	46
	Vacant Residential	0.93	0.79	2

properties greater than the mean effecitve rate for developed single-family residential properties. Similarly, the City of Toronto displays the smallest differential between the mean effective rates for vacant commercial and commercial properties.

A set of graphs displaying the frequency distributions of effective tax rates by municipality and property type can be examined in Appendix B.

CONCLUSIONS

The results of the assessment to sales ratio and effective tax analyses demonstrate that greater property tax burdens are placed on income producing properties. Commercial and Industrial properties face both the assessment bias and the mill rate bias, while multifamily residential properties are only subject to the assessment bias. Proposals for property tax reform in Ontario suggest that this assessment bias against multifamily residential properties relative to single family residential properties should be eliminated.[25]

In terms of assessment uniformity, the coefficients of dispersion suggest that the more homogeneous the property type, the greater the consistency of assessment. The best uniformity occurred for single-family residential properties; multifamily residential properties ranked second, and the large coefficients tended to occur for commercial properties. The municipality that clearly has the best assessment uniformity according to the analysis is East York.

The analysis of vertical equity suggests that for the Municipalities of Metropolitan Toronto, the bias of assessing higher-valued properties at a lower percentage of market value than lower-valued properties is not as great a problem as the literature might suggest. In fact, within each property type examined, there were biases in favour of both lower and higher valued properties.

One of the most striking results occurs when comparing the results of analyses for multifamily residential properties in the City of Toronto and Scarborough. The City of Toronto has relatively low, mean, assessment sales ratios and mean effective tax rates, while the results for Scarborough are at the upper end of the scale for these analyses. These results suggest that a more detailed analysis should be undertaken regarding multifamily properties in these two municipalities.

The simulation of the impacts of Provincial property tax reform reinforce the need to examine this property type in these municipalities more carefully. The simulated impacts are that with reform, the percentage decrease in property taxes levied on multifamily resident properties is 30% in the City of Toronto and 53% in Scarborough.[26]

It would be desirable to have these analyses undertaken for at least two points in time. The Province of Ontario took over the function of assessing properties from the municipalities in 1970. At that time, all assessments were frozen until the reform could be implemented. If we could compare the results in this report with results from 1970 data, it would be possible to examine how the vertical equity, coefficients of dispersion, and effective tax rates have changed. The first two of these analyses would be most useful to demonstrate the uniformity of the municipalities assessment practices.

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It would then be possible to determine any effects upon the equity of the administration of the property tax resulting from seven years of frozen assessments. The results might suggest that the administration of the property tax has become less equitable over time. This could reinforce the conclusion of this study that steps must be taken to improve the equity of the property tax administration. Improvements are needed not only among the various property types but also within each particular type of property.

FOOTNOTES

1. The statutory regulations regarding this differential are found in The Education Act (1974), S215, and the Ontario Unconditional Grants Act (1975), S7(3).

2. A listing of assessment to sales ratios for a number of property types in various municipalities are given in Report of the Ontario Committee on Taxation, Vol. II, Queen's Printer, 1967, pp. 248-253.

3. For a description of this measure see Henry J. Aaron, Who Pays the Property Tax, The Brookings Institution, 1975, pp. 14-17.

4. This concern has been expressed by William M. Shenkel, "Property Tax Assessment Ratios: A Critical Review", Assessors Journal, October, 1972; and Theodore R. Smith, "Sales Ratios and Property Tax Regressivity", Assessors Journal, October, 1972; It has been empirically shown for Boston by Robert F. Engle, "De Facto Discrimination in Residential Assessments: Boston", National Tax Journal, Vol. XXVIII, December, 1975, pp. 445-451.

5. Shenkel, "Property Tax Assessment Ratios: A Critical Review", pp. 6-9.

6. Calculations based on Toronto Real Estate Board statistics for houses sold on the Multiple Listing Service during 1977 demonstrate that less than 3% of the houses sold for less than $30,000.

7. See David P. Amborski and James H. Mars, "Property Values and Assessment in Urban Communities, Borough of East York", School of Economic Science, 1977.

8. The potential short and long-run efforts of downzoning on commercial property both within and outside the downzoned area are discussed by Donald N. Dewees in "The Economic Effects of Changes in Land Use Control in the Central City", City of Toronto Planning Board, July, 1975.

9. Shenkel, "Property Tax Assessment Ratios: A Critical Review", pg. 3.

10. This use of assessment to sales ratios in U.S. jurisdiction is discussed by Shenkel Ibid., and for the Province of Ontario in The Report of the Ontario Committee on Taxation, Vol. II, pg. 257.

11. The Province has recently announced that the distribution of grants to municipalities in 1980 will be based on assessment equalization factors reflecting 1978 market values. This was announced in a statement by the Minister of Revenue, Lorne Maeck, concerning The Municipal Assessment Amendment Act 1978 and Introduction of New Assessment Equalization Factors, November 21, 1978.

12. For an example of this type of analysis undertaken for the City of Boston, see Oliver Oldman and Henry Aaron, "Assessment-Sales Ratios under the Boston Property Tax", National Tax Journal, Vol. XVIII, pp. 37-49.

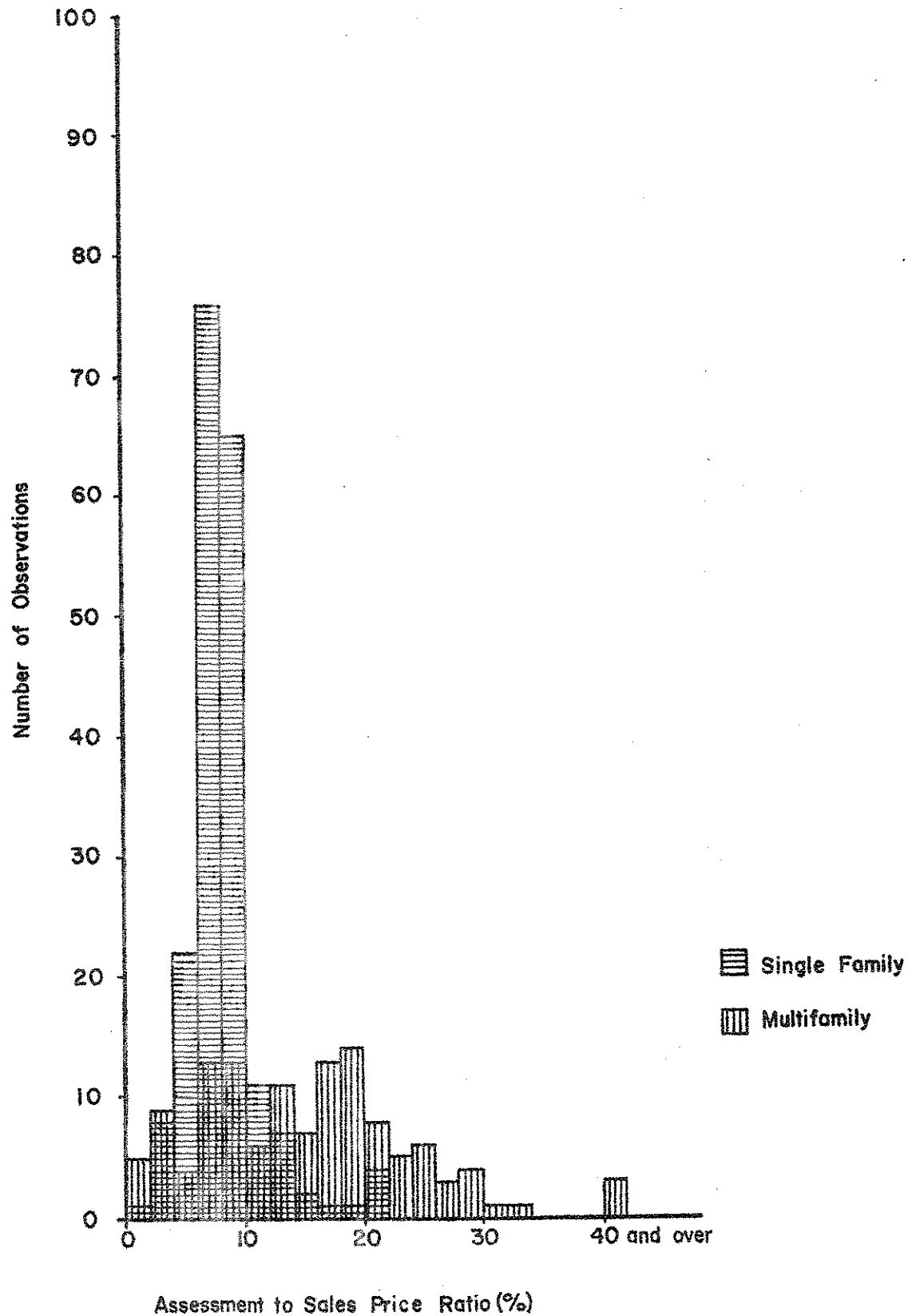# FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

City of Toronto

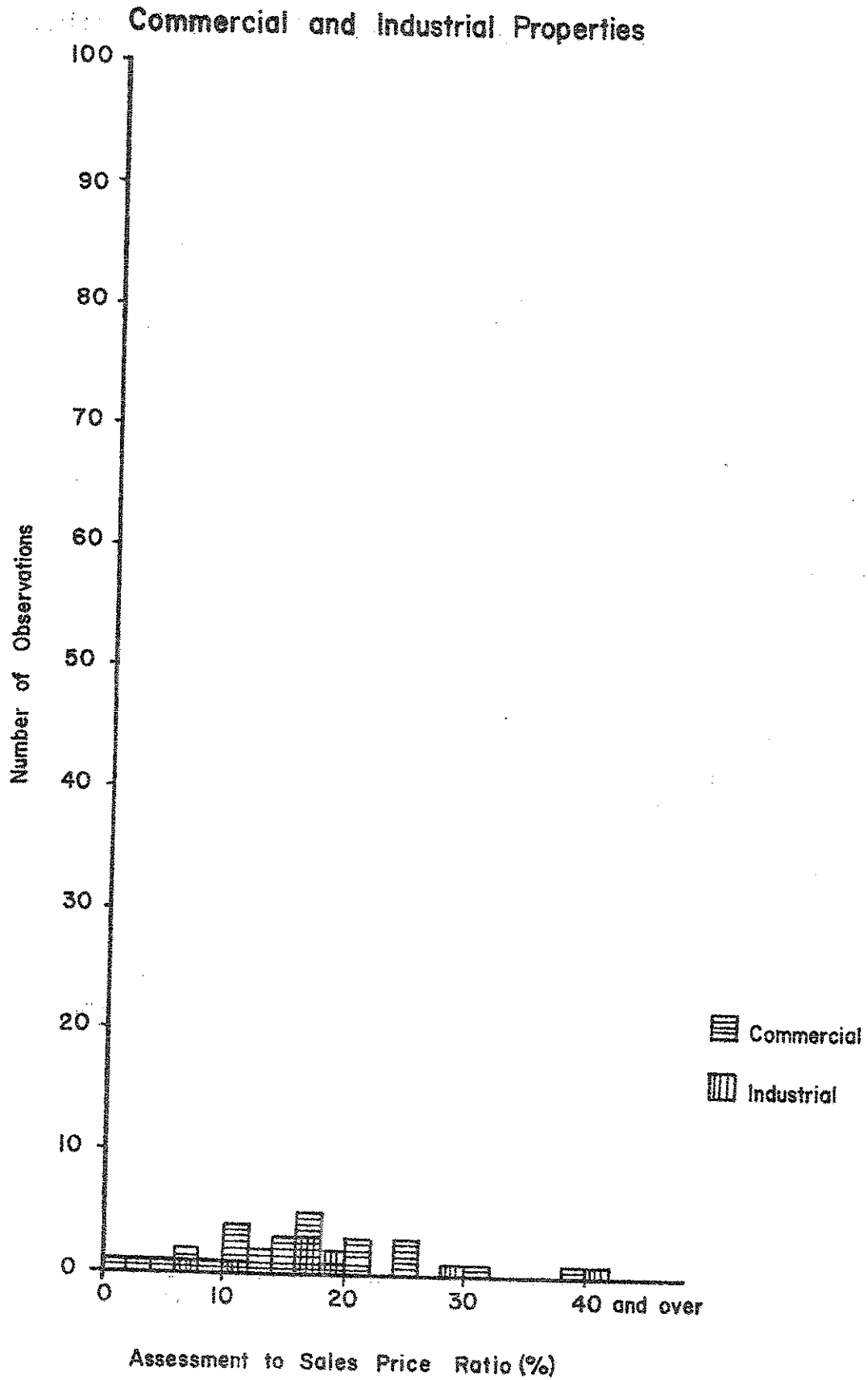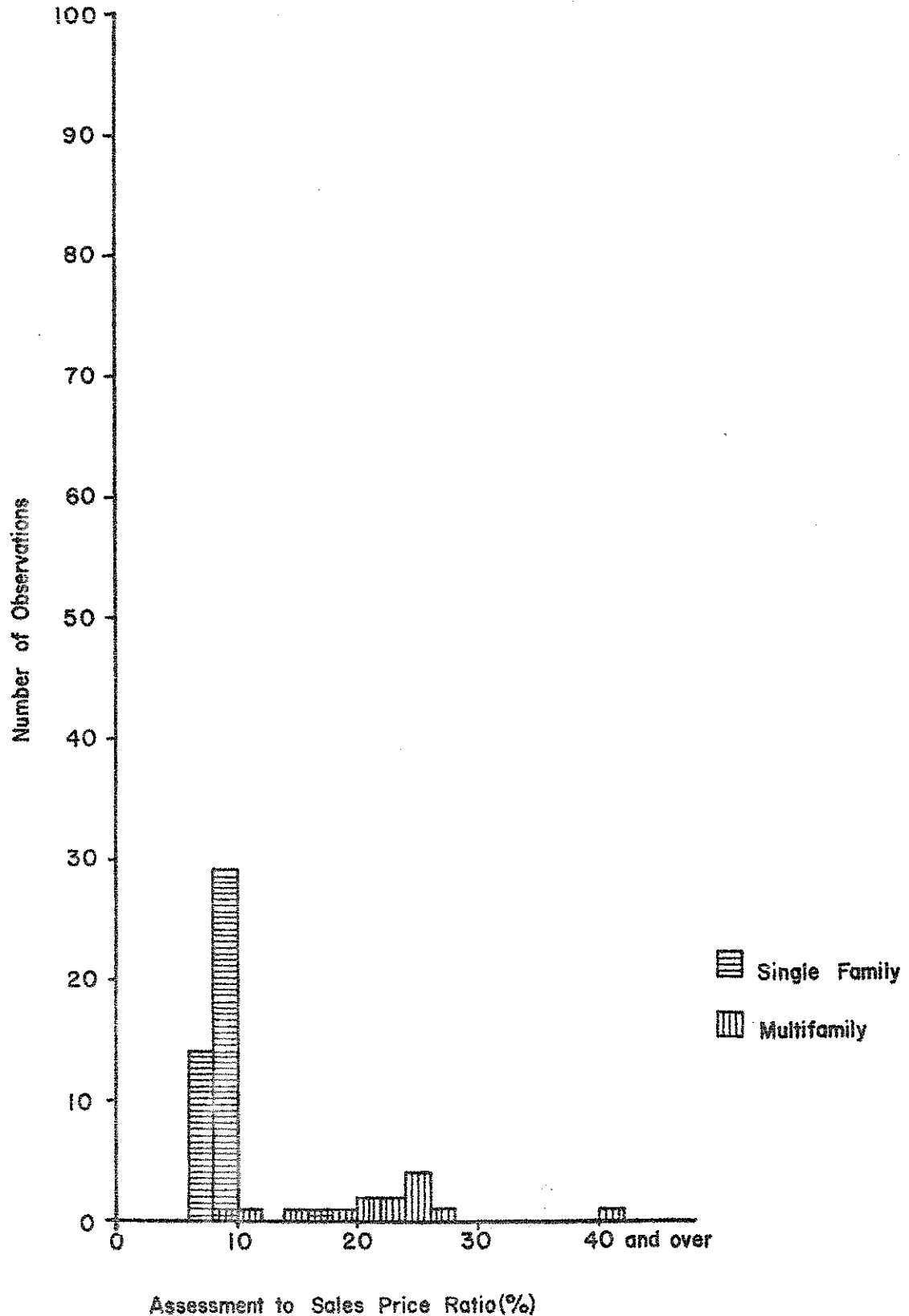### Commercial and Industrial Properties

Assessment to Sales Price Ratio (%)
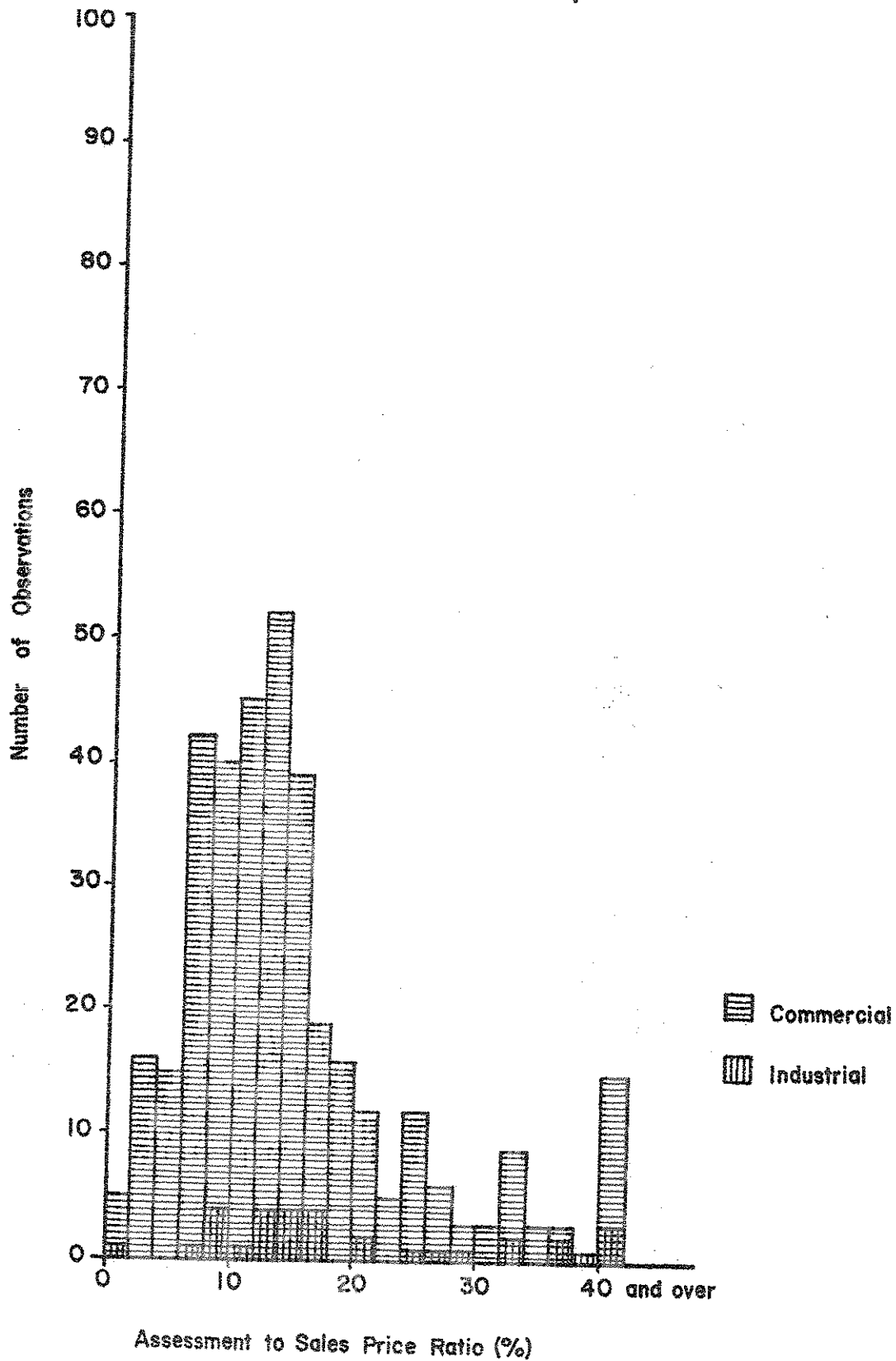
FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

City of Toronto

Single Family Residential and Multifamily Residential Properties

Assessment to Sales Price Ratio (%)
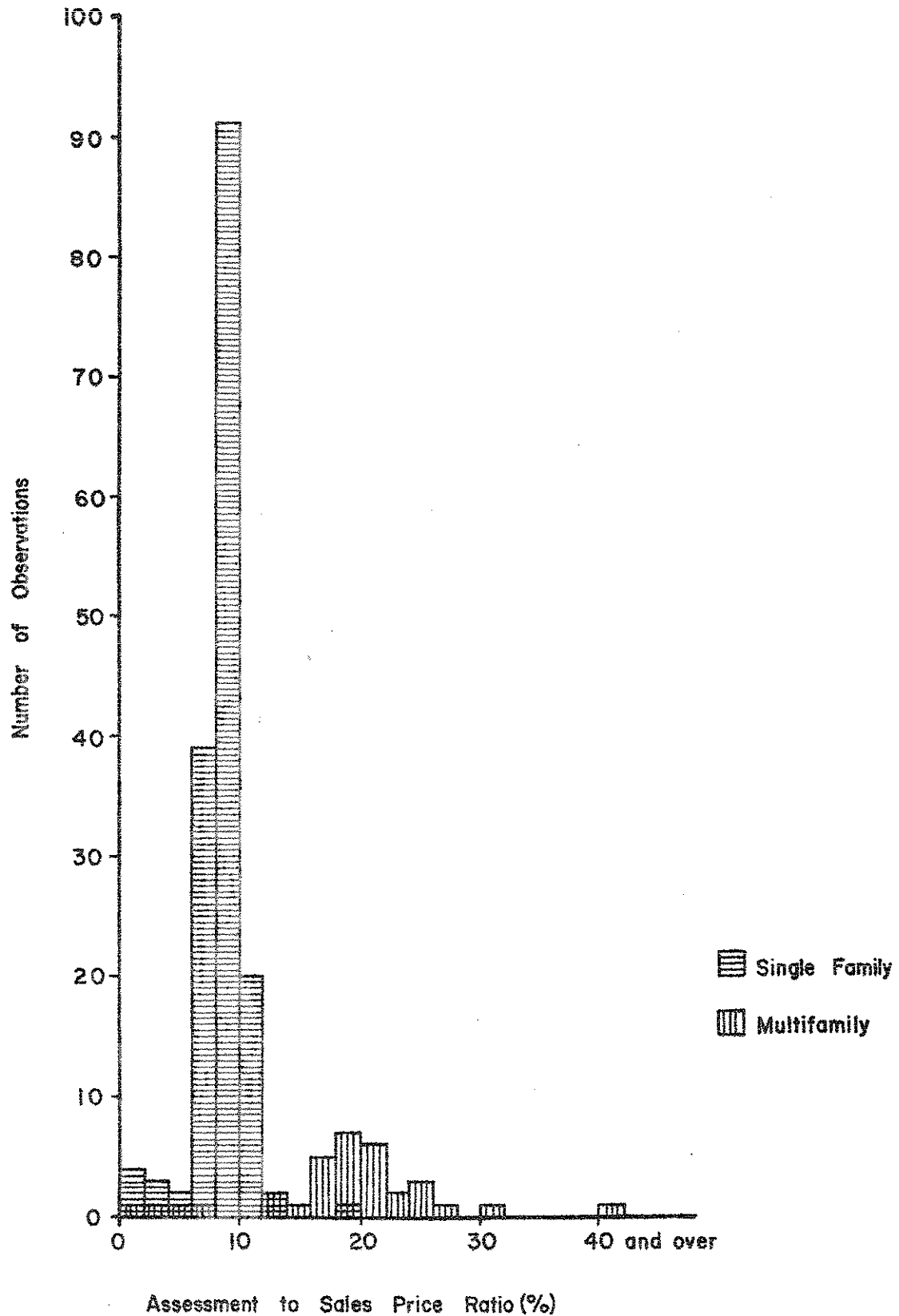
FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

East York

Commercial and Industrial Properties

Assessment to Sales Price Ratio (%)

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

East York

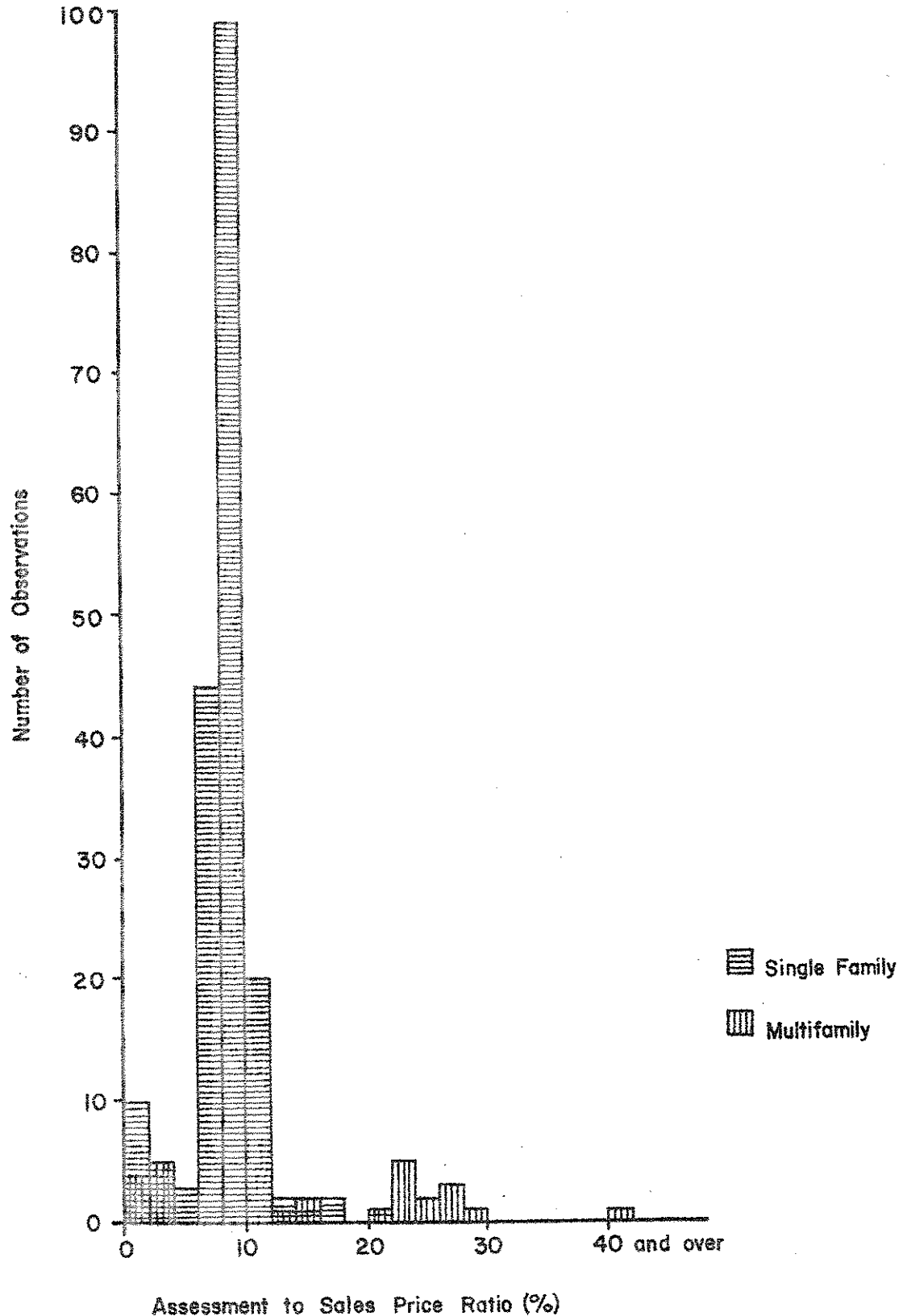### Single Family Residential and Multifamily Residential Properties

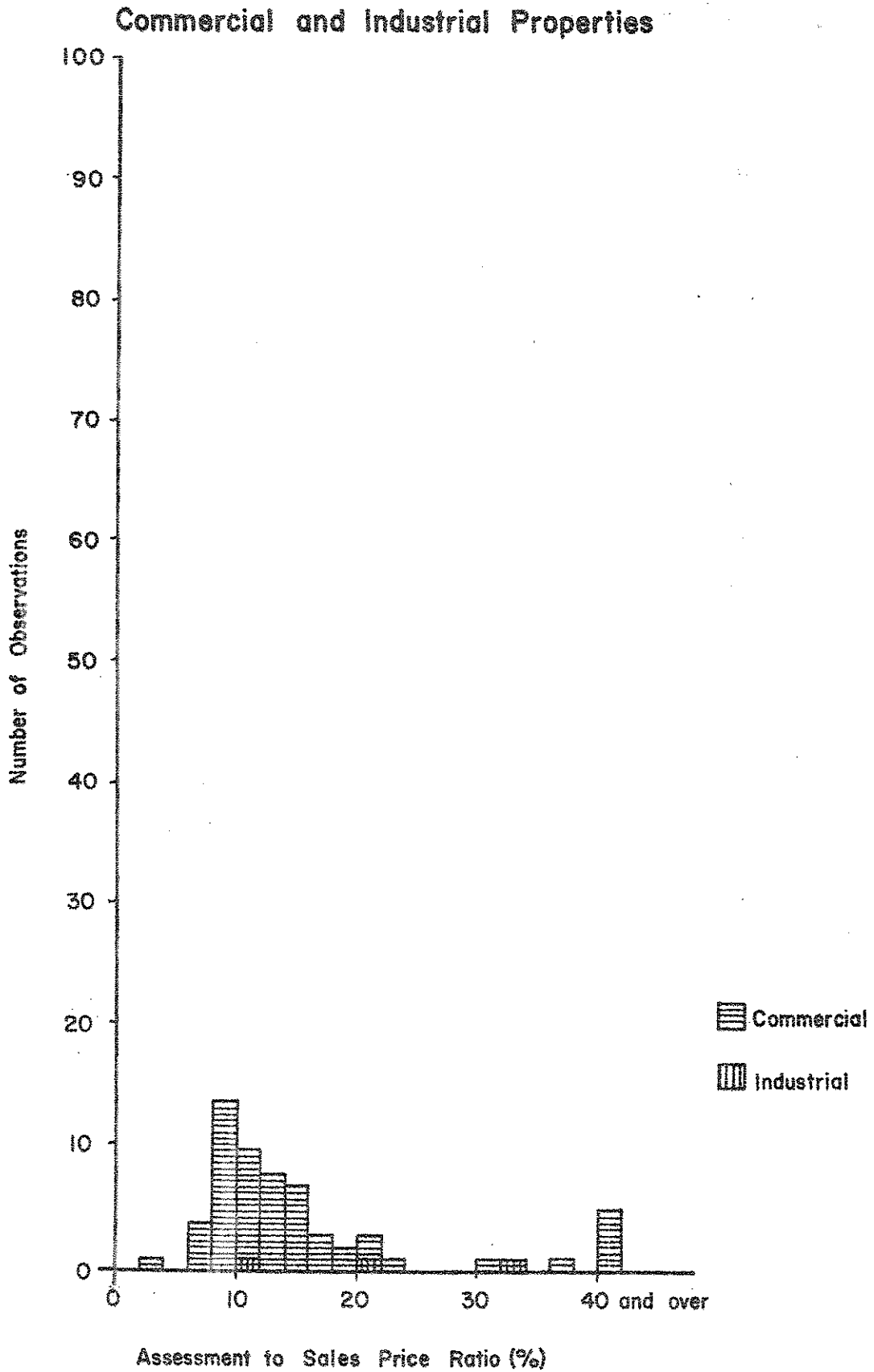# FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

Etobicoke

Commercial and Industrial Properties

A. 6
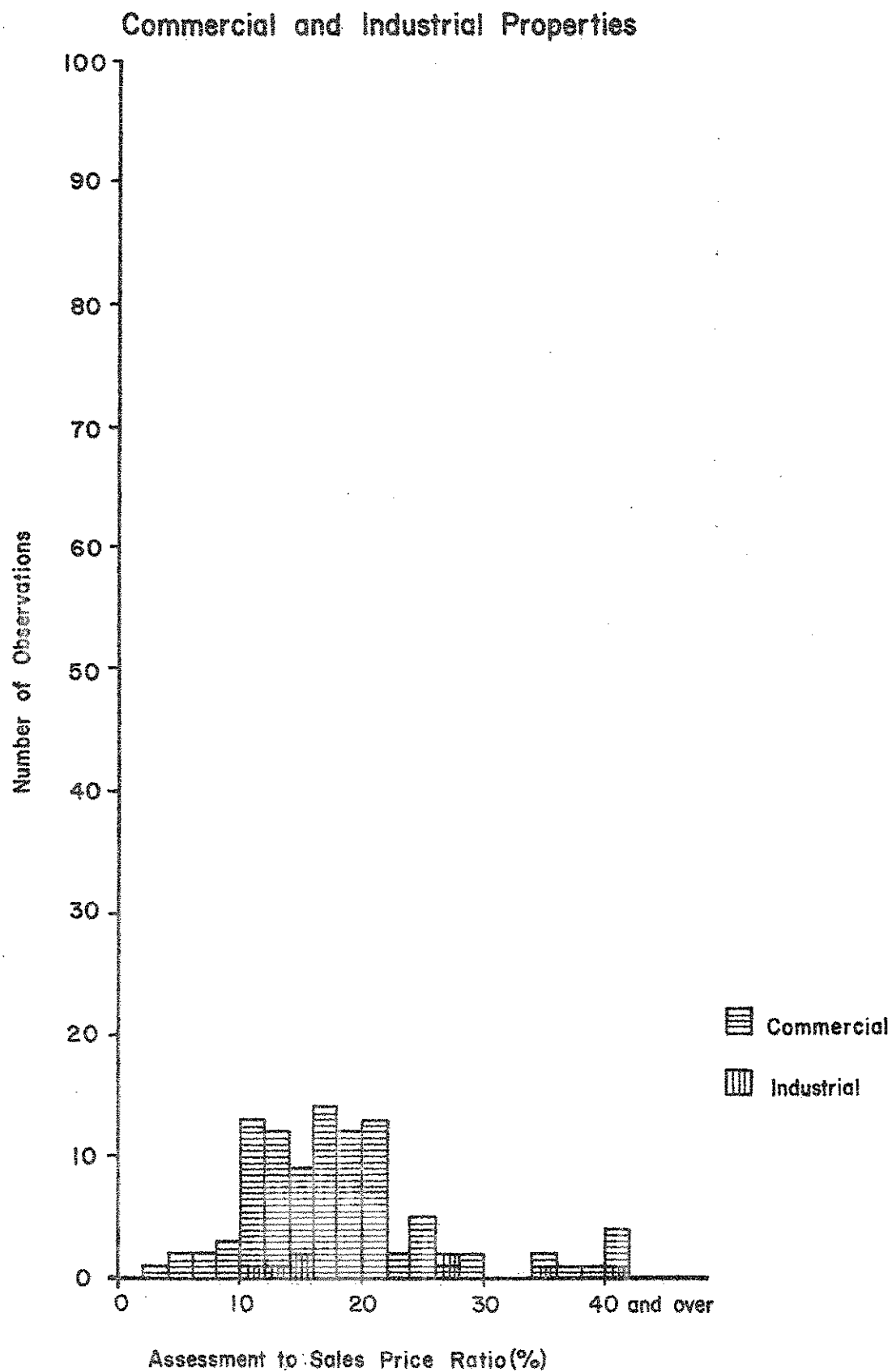
FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

Etobicoke

Single Family Residential and Multifamily Residential Properties
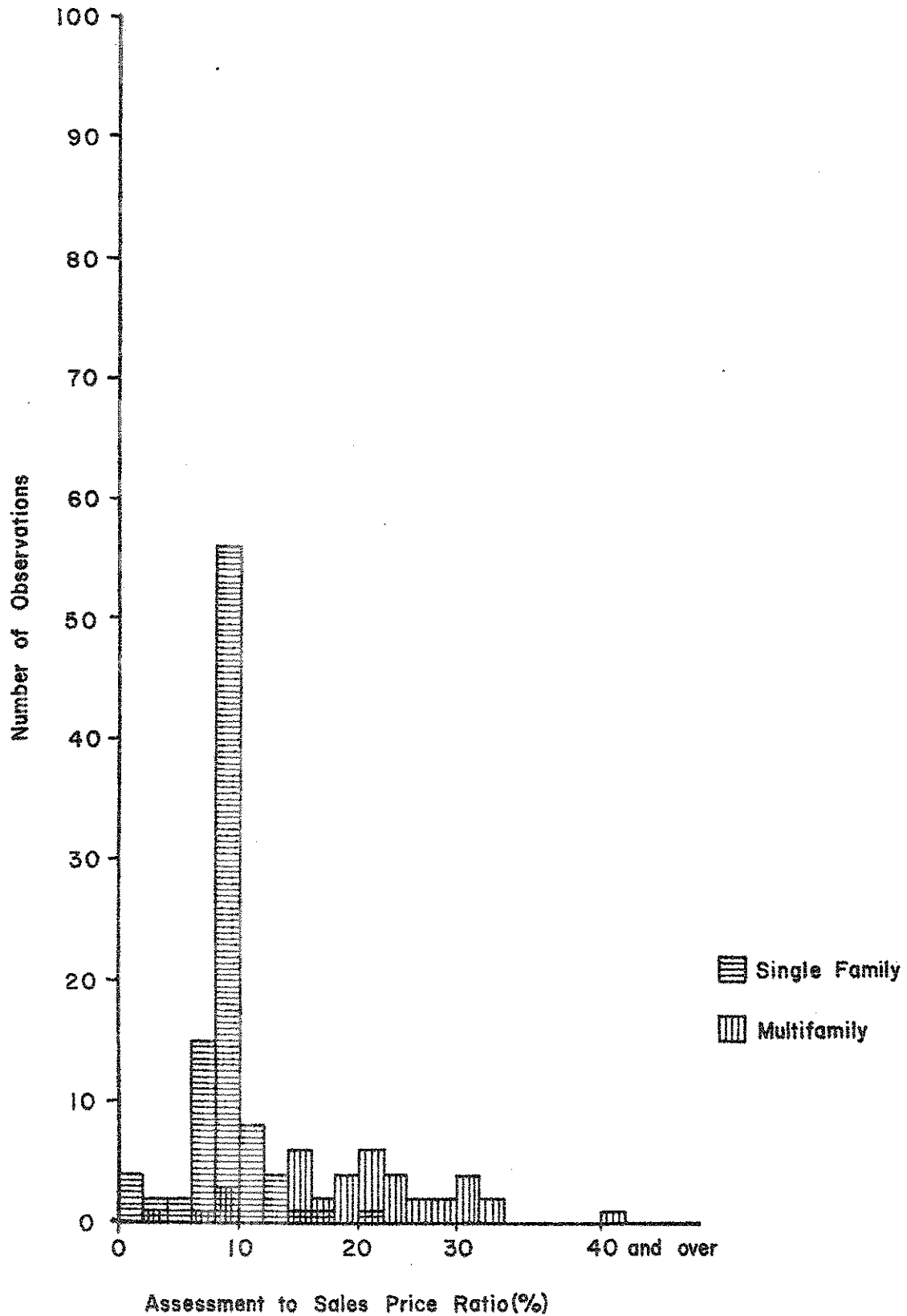
34

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

North York

Commercial and Industrial Properties

Assessment to Sales Price Ratio (%)
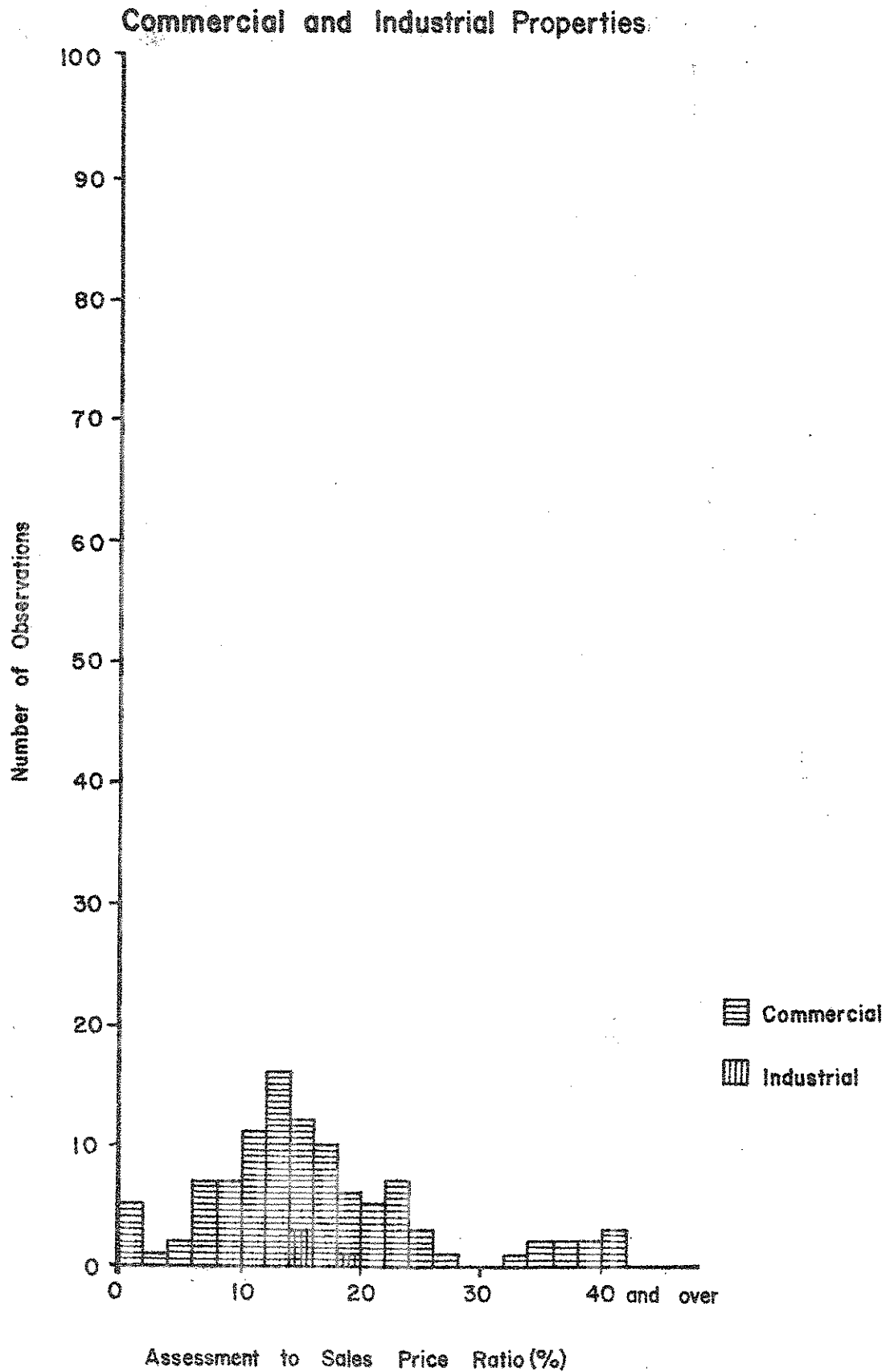
FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

North York

Single Family Residential and Multifamily Residential Properties

Assessment to Sales Price Ratio (%)

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

Scarborough

Commercial and Industrial Properties

Assessment to Sales Price Ratio (%)

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

Scarborough

Single Family Residential and Multifamily Residential Properties

Assessment to Sales Price Ratio (%)

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

York

Commercial and Industrial Properties

Number of Observations

Assessment to Sales Price Ratio (%)

Commercial

Industrial

A. 12

FREQUENCY DISTRIBUTION OF ASSESSMENT TO SALES RATIOS

York

Single Family Residential and Multifamily Residential Properties

Assessment to Sales Price Ratio (%)

40
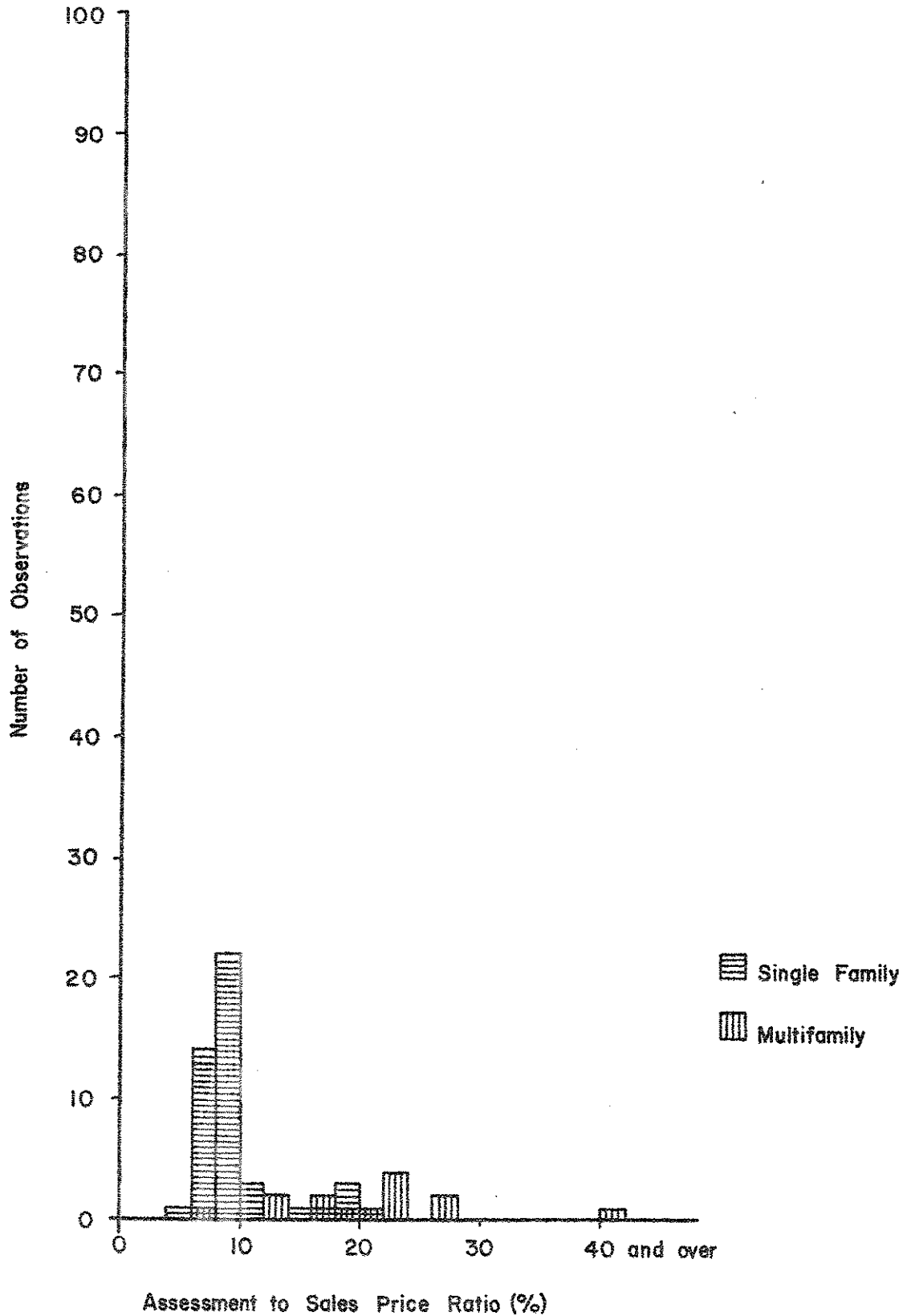
APPENDIX B

Frequency Distributions of Effective Tax
Rates by Property Type and Municipality
for Metropolitan Toronto.

FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

City of Toronto

Commercial and Industrial Properties
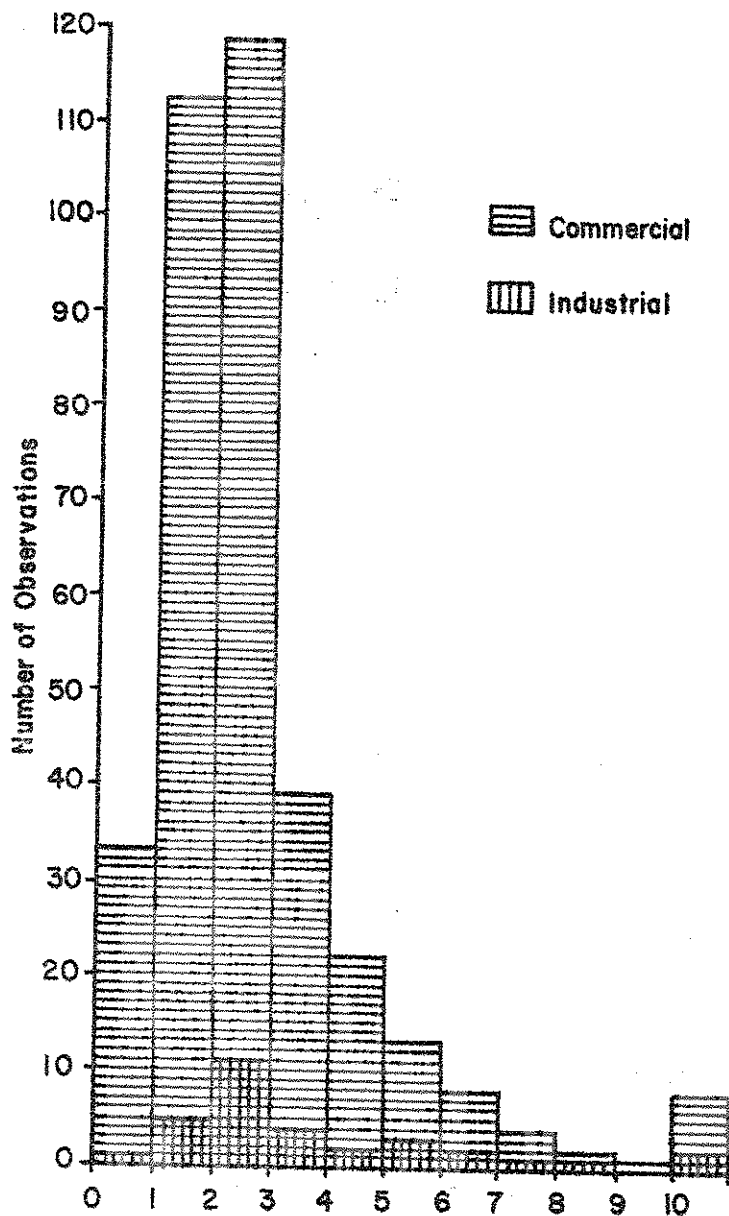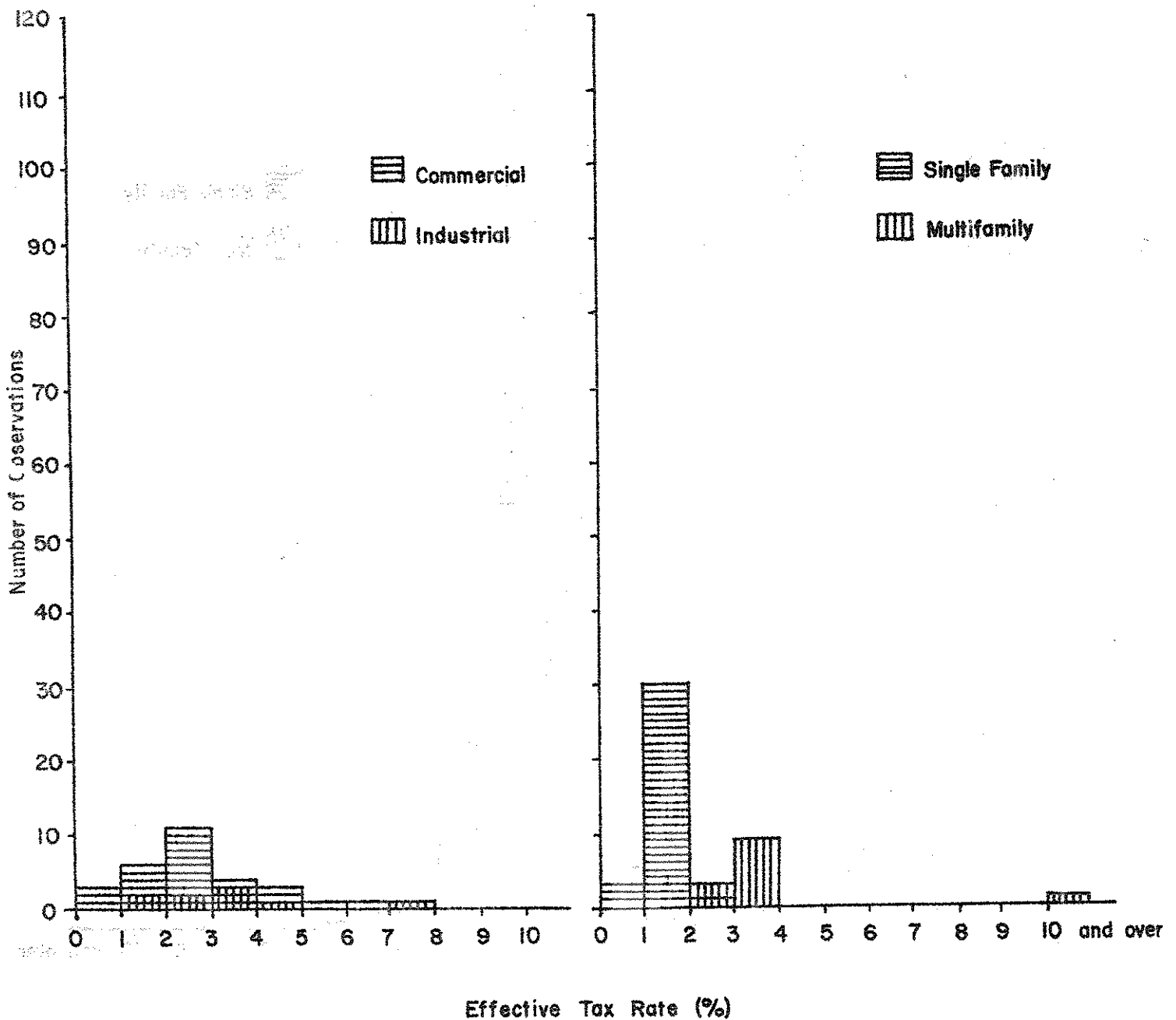
Single Family and Multifamily Residential Properties
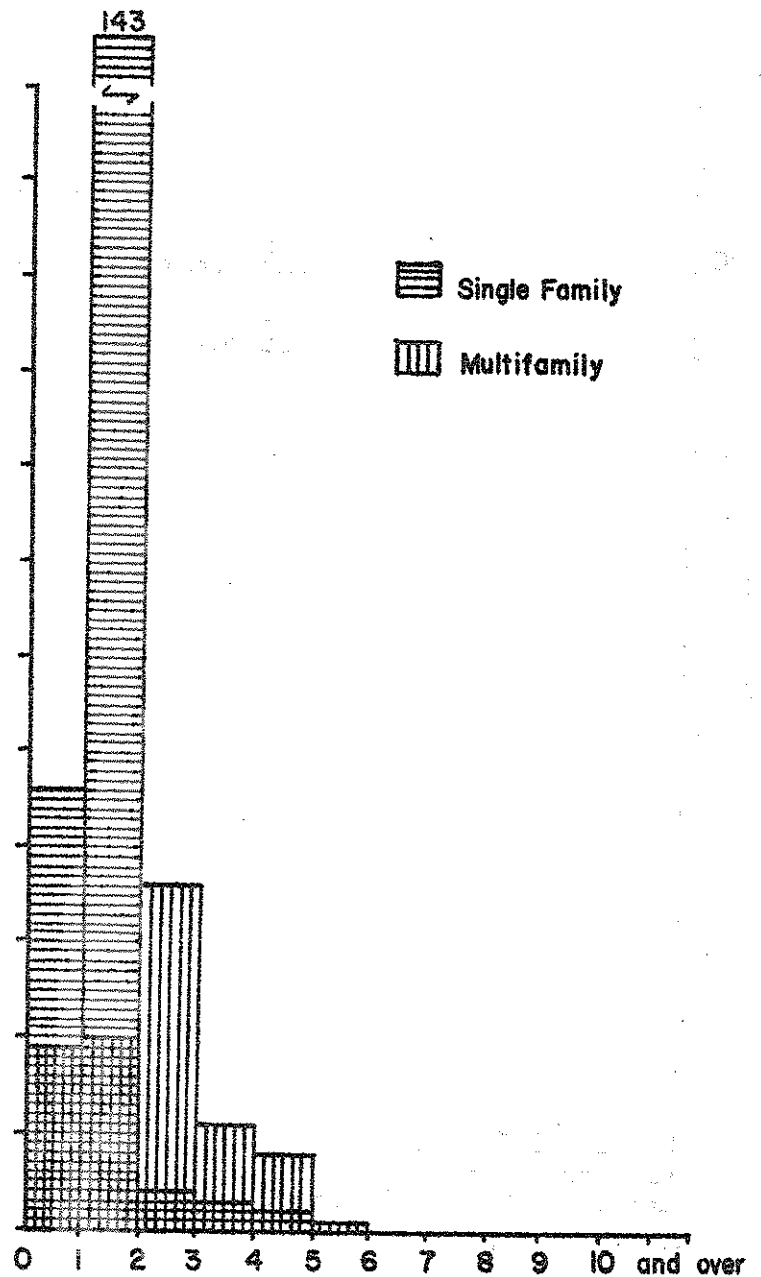
Effective Tax Rate (%)

FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

East York

Commercial and Industrial Properties
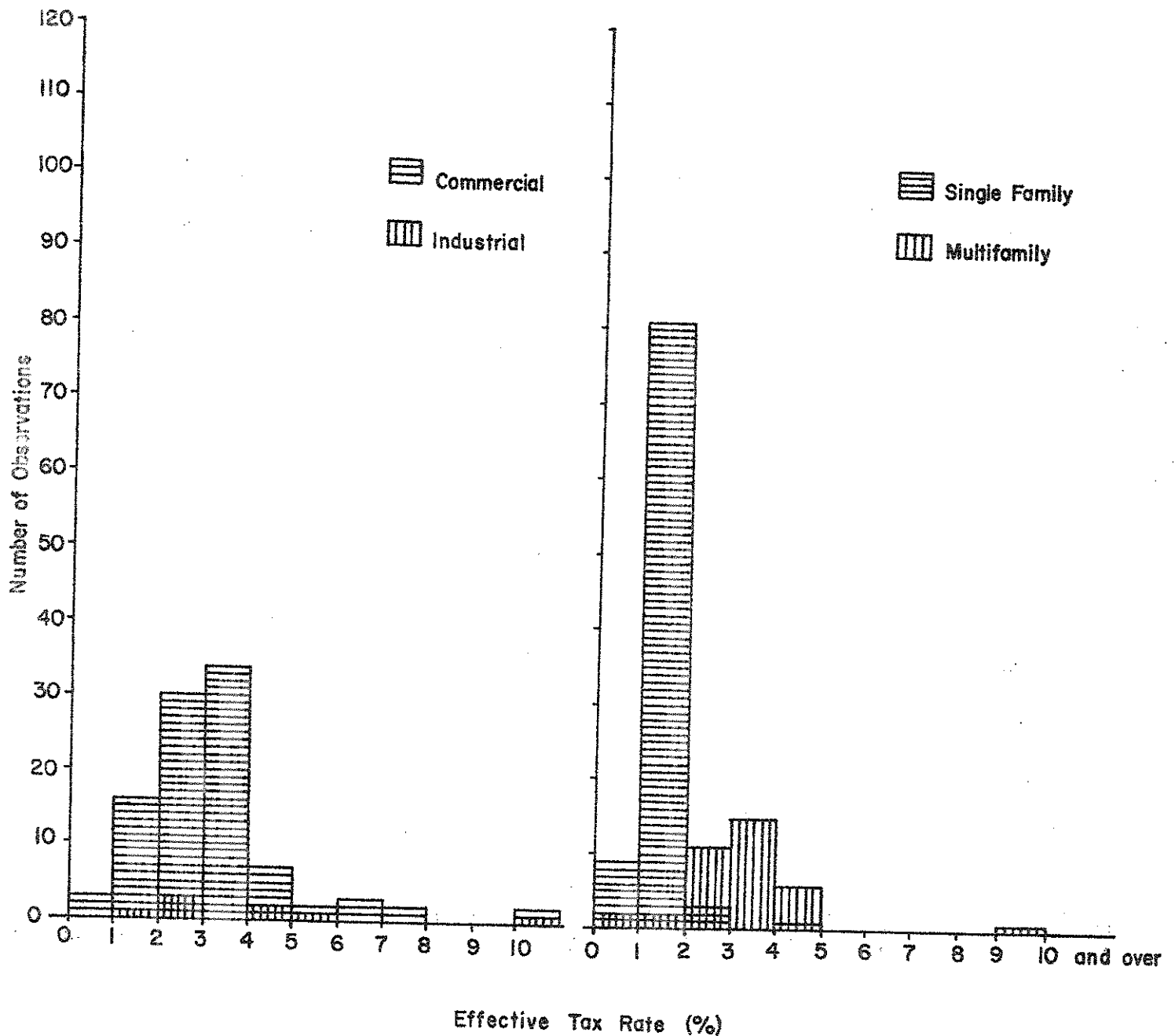
Single Family and Multifamily Residential Properties

Effective Tax Rate (%)

43

FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

Etobicoke

Commercial and Industrial Properties

Single Family and Multifamily Residential Properties

Effective Tax Rate (%)
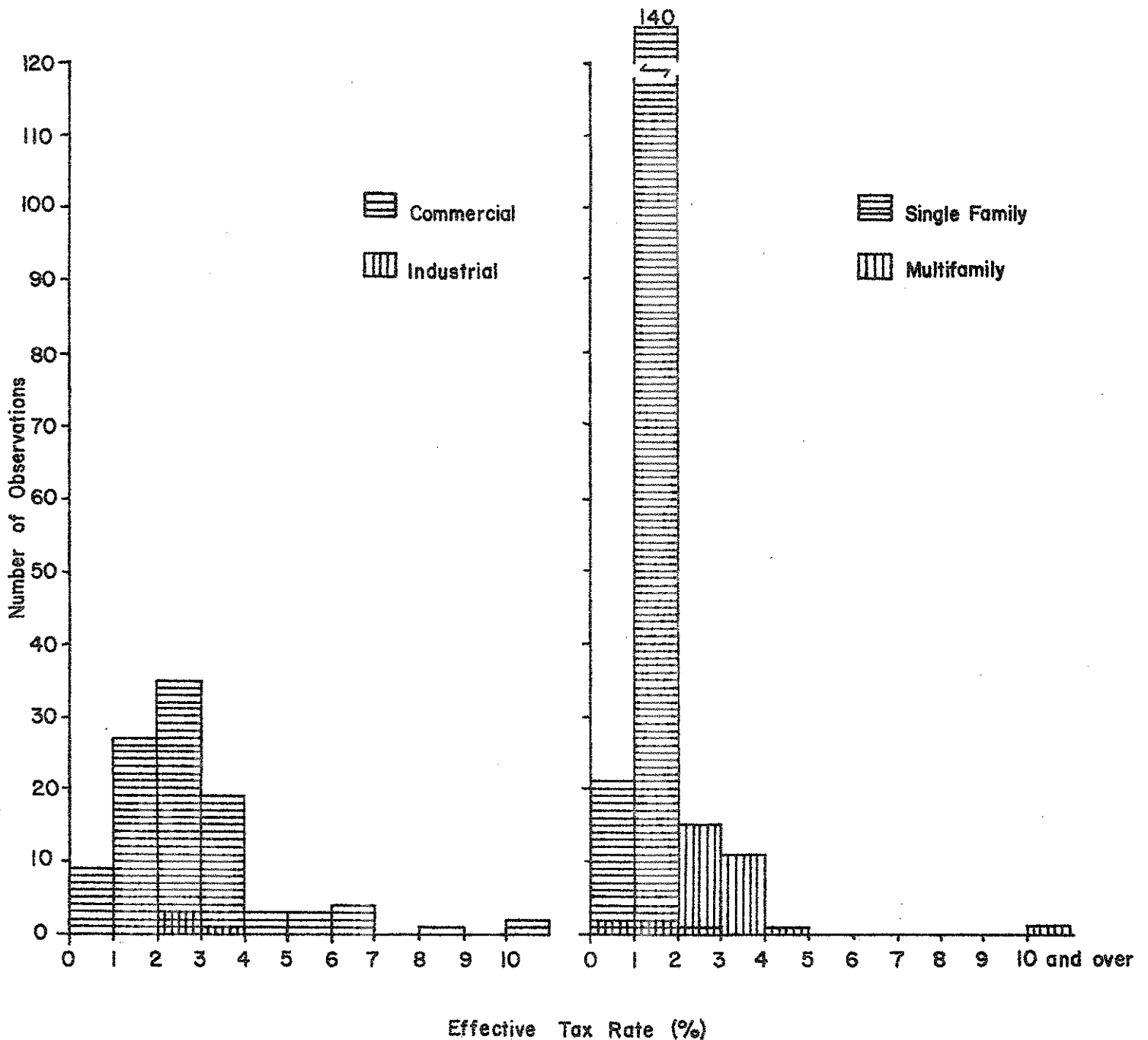
FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

North York

Commercial and Industrial Properties

Single Family and Multifamily Residential Properties

Effective Tax Rate (%)

FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

Scarborough

Commercial and Industrial Properties

Single Family and Multifamily Residential Properties

Effective Tax Rate (%)

FREQUENCY DISTRIBUTION OF EFFECTIVE TAX RATES

York

Commercial and Industrial Properties

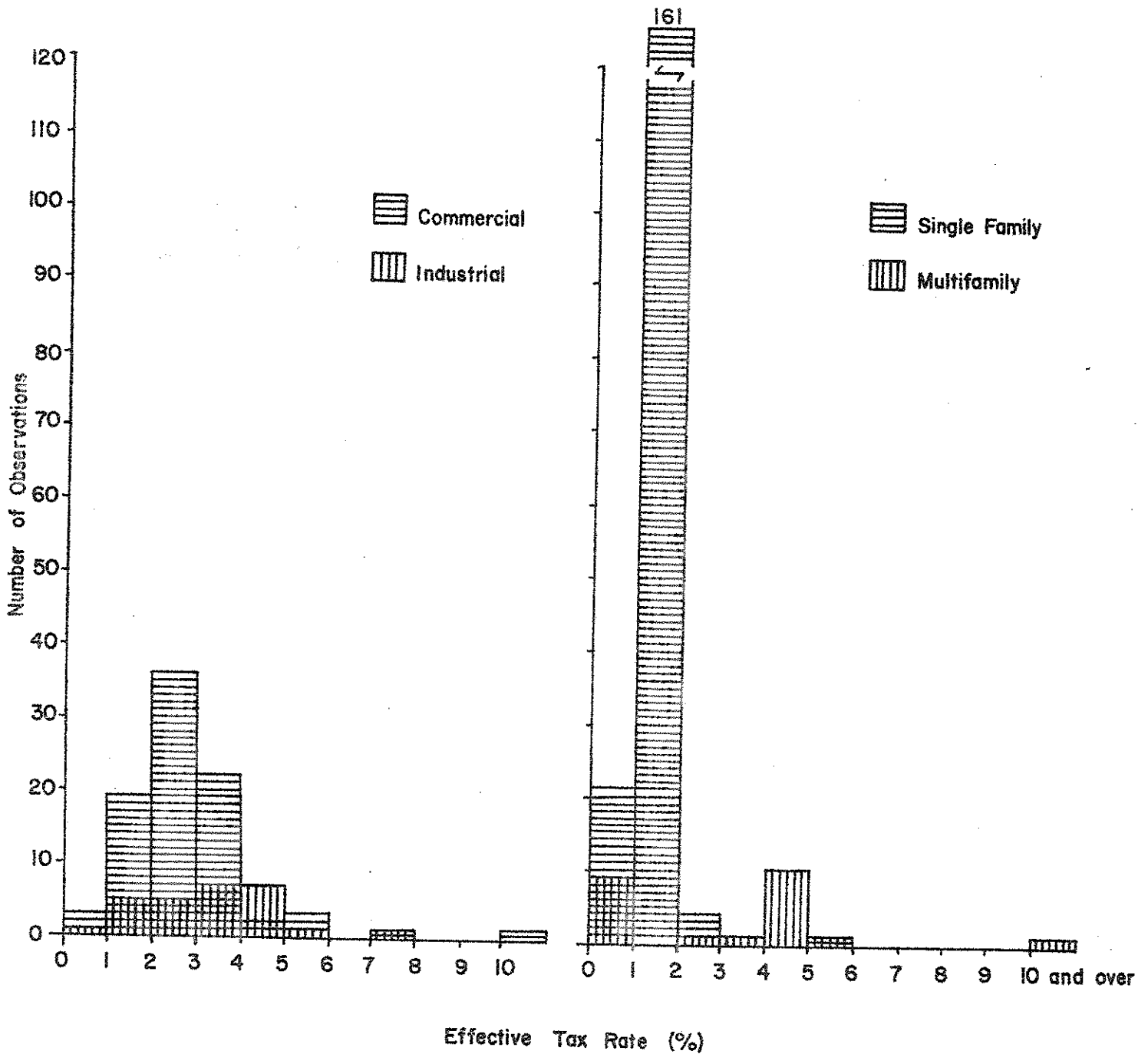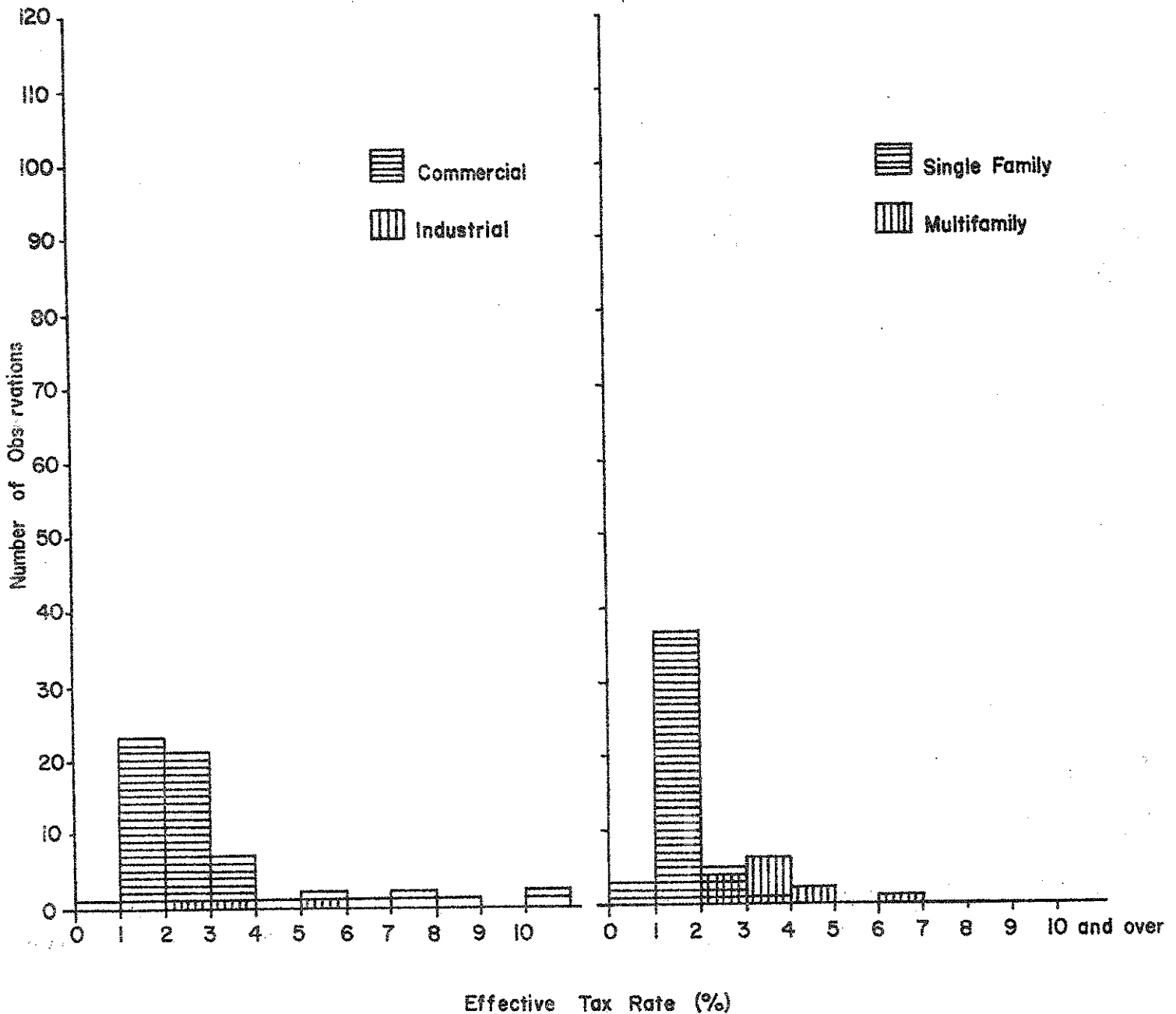### Single Family and Multifamily Residential Properties

Effective Tax Rate (%)

47

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