HOUSING TENURE CHANGE

IN THE

CITY OF TORONTO

FROM 1971 TO 1988

ΒY

SUSAN LANGMAN

URBAN DOCUMENTATION CENTRE RESEARCH UNIT FOR URBAN STUDIES MCMASTER UNIVERSITY HEMILTON, ONTARIO

A Research Paper

Submitted to the Department of Geography

in Fulfillment of the Requirements

of Geography 4C6

McMaster University

April 1990

ABSTRACT

This thesis examines the change in housing tenure in the City of Toronto. The trends of tenure are described briefly between 1951 to 1971, for the city, as well as for the CMA. Specifically examined is the period from 1971 to 1988, in the City of Toronto.

There is a continual decline in the rate of home ownership from 1951 to 1971, even though the absolute number of homeowners is increasing. This can be seen in the city, as well as the suburbs, and outlying areas. The overall decline in the rate may be due to the apartment boom of the 1960's, which can be associated with the baby boom from a few years earlier. Also suburbanization was occurring which certainly had an effect on home ownership.

Similarly, ownership rates continued to decline between 1971 to 1986, although the absolute numbers were higher than tenants, and was steadily increasing. Gentrification and condominium construction certainly was associated with this absolute increase in home ownership.

A closer look at the city reveals certain census tracts are increasing in home ownership at a higher rate than others. By looking at certain demographic characteristics, it is possible to see the changing social geography of these areas.

The period 1986 to 1988 incurred tremendous condominium construction. The city during this time increased in ownership rates. Changing lifestyles and desires of the people living in the city caused a demand for condominiums.

It is important to examine these trends and patterns of the city and the outlying areas to be kept informed of the changing social and economic geography of the city.

Acknowledgements

I would like to thank my advisor Dr. Richard Harris for his advice, and invaluable guidance throughout this project. He helped to make my thesis a positive and enjoyable experience. I would also like to thank my friend David Zimmerman for his support and inspiration throughout my university career, and for the continuance of it in the future. Family and friends have also been a great source of strength, which have helped me make this a rewarding year. Thank you.

TABLE OF CONTENTS

ABSTRACT		ii		
ACKNOWLEDGEMENTS				
LIST OF FIGURES				
LIST OF TAL	BLES	vi		
LIST OF GRA	APHS	vii		
CHAPTER 1				
Introduc	ction	1		
CHAPTER 2				
The Lite	erature Review			
2.1 2.2 2.3	Housing Tenure in General Tenure Patterns and Change within the City Gentrification and Condominium Development	3 3 9		
CHAPTER 3				
Methodo	Logy and Context			
3.1 3.2	Methodology Trends in the Toronto CMA	14 16		
CHAPTER 4				
A Close	r Look at the City of Toronto			
4.1	General Patterns of ownership in the City Specific Areas of Increase from	24		
4.3	1971 to 1986 Recent Look at Ownership in the City	27		
	from 1986-1988	36		
CHAPTER 5				
Summary	and Conclusion	38		
APPENDICES		40		
REFERENCES		65		

LIST OF FIGURES

Figure	1	:	Ownership from 1971	Rates in to 1981	the	City	of	Toronto	25
Figure	2	:	Ownership from 1981	Rates in to 1986	the	City	of	Toronto	26
Figure	3	:	Ownership from 1971	Rates in to 1986	the	City	of	Toronto	28
Figure	4	•	Ownership from 1986	Rates in to 1988	the	City	of	Toronto	29

LIST OF TABLES

Table	1	:	Increase in Ownership Rates from 1971 to 1986	30
Table	2	:	Change in Dwelling Type from 1971 to 1986	32
Table	3	:	Decrease in Population from 1971 to 1986	32
Table	4	:	Increase in University Education from 1971 to 1986	33
Table	5	:	Increase in Household Income from 1971 to 1986	35

Graph 1 : Change in Ownership Rates for the CMA, the Metro Suburbs, and the City from 1951 to 1986

CHAPTER 1

INTRODUCTION

Toronto in the 1970's, underwent a significant period of change in regards to housing tenure. Different areas in the city and in the metropolitan areas experienced some change in terms of whether people rented or owned their homes. The changes in housing tenure affected these areas in many ways, as well as the social geography of the entire city. These are general considerations, which apply to Toronto.

The people in areas that own their own homes have different attitudes than the people in areas where homes are rented. Owners feel more attached to their homes and feel more responsibility for their neighborhood. Owneroccupiers are likely to be better off financially and this determines the type of people moving into a particular neighborhood. Being better off financially usually implies that the neighborhoods are better cared for, and therefore aesthetic beauty of the neighborhood the as a whole improves. These areas are also more developed in terms of parks, recreational facilities, and shopping areas. Activist groups are also formed that are concerned with neighborhood safety, environmental issues, and the development of the city. Tenure change may also affect the number of people living in an neighborhood. In owneroccupied neighborhoods, because of a changing culture and changing attitudes towards family, the households tend to be smaller. In areas where there is a high degree of rental units there tends to be more than the average number of children and/or extended family lives in the same unit. Rental areas are usually occupied by the lower income. The units are often run down and undesirable for most people to live in, but because the rents are fairly cheap for within the inner city they do not have any other choice but to live here. The lower income rely on public transportation to get to their jobs and count on the social networks the city provides.

The change in tenure of course is not all positive. The growing number of owner occupiers that are in the city bring an influx of cars into the city which causes traffic and parking problems, as well as the pollution factor. Lower income families do have cars as well, but the growing number of owner occupiers tend to be a multi-car family. Another major downfall, is that the low income working class are displaced from their homes which causes the urgent need of low income housing. This study on the change in housing tenure is essential to be kept aware of the changing social, economic and political geography of the city.

CHAPTER 2

LITERATURE REVIEW

The literature to be reviewed in the following paper helped to create a better understanding of the analysis of the change in housing tenure in Toronto from 1971 to 1986. The literature review explains housing tenure in general, tenure patterns and change within the city, gentrification and condominium construction. These factors are all relevant and necessary to the analysis of housing tenure in Toronto, and create a good basis on which to start my research.

2.1 HOUSING TENURE IN GENERAL

The review of this literature will be considered only as a context to my further analysis of recent trends in Toronto. These references help explain recent Toronto trends and sets these in perspective.

Approximately a century ago, North America was viewed as the land of opportunity. Many families were able to acquire and own homes. Canada and the U.S.A., had a higher level of home ownership that in Britain. It has been seen lately though that this difference has been getting smaller. The reason for this is not easily reconciled. Richard Harris and Chris Hamnett, in their study, <u>"The Myth</u>

of the Promised Land: The Social Diffusion of Homeownership in Britain and North America", seek to fill these gaps by comparing homeownership trends in Canada, U.S., England and Wales, focusing in particular upon the changing incidence of ownership across the social structure. Most important to my research is the findings in North America, and more specifically Canada.

Ownership is generally regarded as being preferable to tenancy. The cheapness of agricultural land in North America in the nineteenth century, attracted many immigrants to come here to own their own property. Even by the turn of the century when there was such a great concentration in urban areas, owning a home was still preferable, and many were able too because of the high wages because of the shortage of labour. The ownership trend continued on into suburbanization. It was seen as an indicator of economic well-being.

Since the 1900's Canada's ownership rate has increased thirty percent. For the past sixty years, Canada's rate has held steady around sixty percent. Home ownership rates have always been higher in the country than in the city, because land and therefore housing is more expensive in the city. Suburbanization has allowed for recent increases in home ownership because it allows people to fulfill their ownership aspirations. In the nineteenth century, class differences in Canada were quite minor in terms of home ownership. This did not necessarily reflect

equality of opportunity. There were strong aspirations to own a home among the poor, and weaker aspirations among the rich. In the twentieth century this class difference grew. The economic elite pulled far ahead of many other groups. Working class were approximately fifty percent homeowners, and managers and owners were seventy two percent.

Harris and Hamnett conclude that the ownership levels between Britain and North America are now much the same. Relative advantages in North America have eroded with time and urban growth. The comment that there is further research to be done on the issue of tenure in the over all context of change in the housing market.

Richard Harris does go further into researching the change in the housing market, and how this affects housing tenure in his study, <u>"Boom and Bust: The Effects of House</u> <u>Price Inflation on Homeownership Patterns in Montreal,</u> <u>Toronto, and Vancouver</u>. Relevant to my own research is the findings in Toronto.

There has been a recent increase in housing prices which has put home ownership out of reach for many Canadians. Between 1974 and 1982, the rate of housing increase in Toronto was 194%. Ownership rates remained at 57% in Toronto because of this. Levels of homeownership does not depend only on housing costs, but on incomes as well. Incomes in this study were highest in Toronto.

In 1980-1982, the modest increase in housing would have caused a major crisis if it had not been for the income

and demographic changes at the time in Toronto. Incomes recovered from a previous drop, and households headed by younger people also declined. Proportionately more households heads had saved enough to pay the mortgage and the elderly over 64, who already owned held the ownership rate steady. (Harris 1986)

Toronto's working class declined in homeownership, because of incomes not rising as fast as housing prices. Owners, managers and the middle class have improved their ownership position.

Compared to Montreal and Vancouver, Toronto did just as well, in terms of ownership growth. Montreal's social classes all shared in an ownership boom, while in Vancouver ownership rates fell for all groups.

2.2 TENURE PATTERNS AND CHANGE WITHIN THE CITY

Burgess classic model was based on concentric zone theory, where he said the higher income lived towards the periphery. This was coupled with the fact that he said that ownership levels also rose towards the urban fringe. Therefore the higher social classes owned their own homes and the incoming immigrants who lived in the core area were tenants. Burgess viewed the downward transition of neighborhoods as a general if not a universal characteristic of urban growth irrespective of the precise form taken by the pattern of concentric zonation. (Hamnett 1984) In later

reviews it will be seen that many do not agree with Burgess view of tenure in the city. My research on housing tenure does not agree with Burgess view of how the city is organized today.

The Local Culture of Property: A Comparative History of Housing Tenure in Montreal and Toronto, by Marc Choko and Richard Harris is an up to date discussion of the tenure gradient in Toronto and Montreal. Choko and Harris site Burgess, when saying the generalization is that the ownership level increases as land price declines towards the fringe.

By the 1900's in Toronto a contrast in home ownership had finally developed. In the central area it was 4%, the rest of the city 26%, and the suburbs 49%. As time passed of course these figures grew, but the gradient that had been established maintained into the 1970's. Throughout the metro areas from 1961-1981, ownership rates declined because of the building of apartments. By 1981 ownership rates were actually higher in the central area. The central area under went redevelopment. Gentrification and condominiums were probably the main reason for the increase in homeownership.

Montreal had a similar experience except that the ownership rates in the city did not overtake there suburbs. Ownership rates in the city centre are growing but not as fast as it did in Toronto.

City of Toronto Planning and Development Department

(1981), is more specific in this area of study. This report examines the trends in housing occupancy patterns in the City of Toronto.

Since 1976, 23,600 units were constructed and 13,666 were lost due to elimination or conversion. In 1984, a second wave of conversion occurred and 2613 units were lost. IN 1985, 62% of the cities population owned as compared to 55% in 1976. Rental units have remained at 21%. Homeowners with units to rent have dropped 8% from 1976 to 1985. In 1976 one quarter of Toronto's population lived in ownertenant housing. This dropped 15% by 1985. 57,780 people have been displaced from this kind of housing. This is basically due to gentrification, undoubling of immigrant families. There is a need for this type of affordable housing. From 1976-1979, 4781 owner tenant properties were converted into single family dwellings. There is a growing attractiveness of the central city, vintage housing stock, better economic conditions, and undoubling of immigrant households.

The statistics indicate a growing share of the cities residential properties are owner occupied, because of gentrification and because of condominium construction in the mid 70's and early 80's. Reductions in living units results in a decrease in population. This is due to the empty nest syndrome, trends towards smaller households and undoubling of households. Overall there was an 11% reduction in population.

Certain neighborhoods are also more susceptible to change in tenure. there were net increases in South Parkdale, downtown, and midtown, where there were previously vacated building which are now occupied. Lower income areas are usually converted. Therefore is a demand now for smaller rental units and the government has put into action certain policies to help revive deconversion. Interest free loans, "add a unit", and "covert to a unit", are policies that the government has put into action.

This bulletin gives a sense of the cities data base and recent trends in selected districts where change has been especially rapid. In my research I hope to update and to fill in some of the reasons for these trends.

2.3 GENTRIFICATION AND CONDOMINIUM DEVELOPMENT

This review of the literature helps to explain the reasons for the change in housing tenure in general and gives specific reference to Toronto.

Condominiums are a relatively new form of home ownership. At first they were primarily built in suburban areas but now are popular within the city. <u>Research</u> <u>Bulletin No.19</u>, Toronto Condominiums Past, Present and Future, states that the CMHC reported as of December 1 1981, 89059 condominium units. This represents 23% of total housing stock since 1969 built in the CMA.

The 40-59 year age group have a large share (40%) in

condominium ownership. Household size in condominiums are 1.54 persons. Condominiums are built close to the central core because of employment, recreational and leisure opportunities and they are maintenance free. The prices are for upper class residence. Owners of rental units have been converting to condominiums because the market appears very promising.

This is a major factor that my research will be reviewing in the change of housing tenure in Toronto. Condominiums have increased ownership levels in the inner city.

Gentrification is a topic in literature which is growing very rapidly. This is a significant factor that has affected and is still affect home ownership in Toronto.

Chris Hamnett in his report on <u>Gentrification and</u> <u>Residential Location Theory: A Review and Assessment</u>, says that gentrification is a physical renovation or rehabilitation of what was frequently a highly deteriorated housing stock and its upgrading to meet the requirements of its new owners. Hamnett does not believe it is a back to the city movement by suburbanites, but rather a migration within the inner city itself as households move from rental to owner occupied homes.

Hamnett paper addresses four aspect of gentrification, its scale, extent, and characteristics, its implications for traditional models, the nature of the explanations and theories which have been advanced, and it

future prospects.

Hamnett finds through some previous studies that gentrification has so far been confined to a relatively small number of metro cities. He says it clearly is not a general or universal phenomenon.

The traditional models Hamnett looks at are those of Burgess, Hoyt and Alonso. These models basically all agree and point to the same conclusion that higher status groups, live towards the urban fringe. Basically Hamnett says these theories were accurate for the times written, but do not exactly explain todays changing organization of the cities. Hamnnet felt there was a need to modify these theories long before gentrification had ever occurred, because in Hoyt, and Burgess model, they had both based their models on cities that had not existed long enough for longer term changes to become apparent.

Hamnett comments that most of the literature written in the 70's about gentrification are most concerned with the description of the phenomenon, than with any attempt at systematic explanation. Actually Hamnett himself was one of the first to make an attempt at systematically identifying and critically examining the various types of explanations that had been advanced.

Hamnett identifies explanations of when and where gentrification has occurred. Space and accessibility, demographic change, lifestyle and preference shifts, housing supply demand and, employment structure.

In regards to the future of gentrification, there will not be a rapid decline in revitalized inner city areas, but it also depends upon the demand base as to how many more will be gentrified. Hamnett says it is unlikely that gentrification will spread much further down the urban hierarchy. It should be made clear that gentrification is merely another stage in continuing historically contingent sequence of residential area evolution.

As Hamnett is critical of the traditional models. critical of Damaris Rose is existing models of gentrification. She wants to develop critical approaches to the study of gentrification, and therefore must look at the bases of the existing approaches. The marxist approach and the neoclassical approach are the ones she reviews. Rose feels that these approaches look at gentrification and explain it too simply. They lump together many factors and different categories, that she looks at as each being significant. Rose does not see it as they do, a single phenomenon. Rose says they assume all gentrifiers have the same class position and they are structurally polarized from the displaced. Rose feels further studies should be done to find other alternatives to explain gentrification. Rose remarks that gentrification is a "chaotic concept" that needs to be thought through again.

My research intends to shed new light on the existing theories of gentrification, and to take many factors into account. Some things to do a research project

as small as this must be assumed, but assuredly it will be the minimum.

Ley (1985), more relevant to my research, does a study on Gentrification in Canadian Inner Cities: Patterns, Analysis, Impacts and Policy. His research addresses four major question. The extent of gentrification in 22 census metro areas, to uncover the spatial patterns and geographic correlates of gentrification within inner cities(six major analyzed), metro areas are impact of inner citv revitalization particularly upon local housing markets, and a review of municipal policy towards gentrification in major cities.

A gentrification index was computed for each of the 22 CMA's, measuring the increase in socio-economic status occurring in each inner city between 1971-1981. Among the highest was Toronto. He accounted for this change with demographic change, local housing market conditions, quality of life, and economic development.

The highest simple correlation variable with the revitalization index was proximity to an elite area. Elite districts are usually close to universities and major hospitals. Ley states this provides anchors around which professionals wish to live. This is the case in Toronto. My research will try to reinforce this fact. I will try and find certain areas with especially high growth in home ownership and see whether or not these certain factors are involved, such as closeness to elite areas.

Some impacts Ley states in his study as a result of revitalization are, displacement of the lower income, affects on local housing markets, and social change within the neighborhood.

These impacts have affected municipal policies towards neighborhoods. Middle class professionals want different things in their neighborhoods than the lower income who previously lived there. They require more services to keep the neighborhood the way they want it and more services in terms of transportation, shopping, schools and other things.

This literature review has widened the subject area in which my analysis has taken place. I have gained perspective from what others in the field have reported and have used their knowledge to enhance my study.

CHAPTER 3

3.1 METHODOLOGY AND CONTEXT

The data used for this research project is from the Canadian Census, and Property File Tax Assessment Rolls.

The Census is a Federal Government project, done by Statistics Canada at five year intervals. The Census collects a variety of information at the tract level. Tn the City of Toronto in 1986 there were one hundred and forty two census tracts. The data shows the total number of households, total number of owners, and total number of tenants for each Census tract for 1971, 1981, and 1986. Owner-occupier ratios have been calculated to show the increase and decrease from study year to study year. Α comparison between the specified study years is made to show the growth and decline in tenure in the different census The owner-occupier ratios are mapped on Census tracts. tract reference maps to show the areas of increase and decrease in ownership.

Census information has also been obtained from the years 1951 to 1986, showing the total number of households, total number of owners and tenants for the census metropolitan area, and each borough of Toronto; Etobicoke, Scarborough, York, North York, and East York. This information has been graphed to show the long term trends of ownership and tenancy in the framework of the metropolitan

areas.

The second source of data being used is the property file tax assessment roll. It is a provincial government reponsibility. It is fairly accurate and is available every This information is gathered for the purpose of year. assessing property taxes. Instead of dividing the city into tracts as the census does, the file tax system uses B.P.U.'s or basic planning units. They are however, comparable to census tracts. This source will be used as an addition to the census from the years 1986 to 1988. This data will be used to show the change in tenure right up to this date, as the census is not available. Not only does the roll tell the housing tenure for each household(i.e. owners or tenants), but it also provides information on the type of dwelling lived in. The data from the property file tax assessment rolls, because it is so extensive (done for every household), has been assembled into the total number of owners and tenants by dwelling type for each B.P.U., in order to carry out a more extensive analysis of the change of housing tenure for between the years 1986 and 1988.

3.2 TRENDS IN THE TORONTO CMA

In the past homeownership rates have increased towards the suburban fringe.(Burgess, 1925) Those who were better off financially, the upper and middle class decided to move to the suburbs to get away from the congestion,

noise , and pollution of the city. The lower income stayed in rental units within the city, because they could not afford the suburban housing, and also they needed to be close to their work as they relied on public transportation, or walking. The process of capital accumulation and investment within cities was causing major congestion problems, and those who could afford to get away did.

This section provides a context for housing tenure prior to the study period of 1971. Briefly described is what the tenure trends were from 1951 to 1971, in the City of Toronto, the metropolitan suburbs, and the Census Metropolitan Areas. Following this the trends of ownership are briefly described for the study period of 1971 to 1986.

1951 to 1971

Graph 1, represents the percentage of homeownership in the City of Toronto, the metro suburbs, the CMA, and the CMA outside the metro boundaries.(CMA Rest)

The percentage of homeownership in the City of Toronto indicates a sharp decline in the percentage of homeowners from 1951 to 1971. Ownership declined from 62.55 percent in 1951, to 41.76 percent in 1971. This could be attributed to the factor of suburbanization that was escalating during this time. Industry during this period was also relocating to the suburbs because of lack of space within the city to grow. This movement of industry took

GRAPH 1

CHANGE IN THE PERCENTAGE OF HOMEOWNERS BETWEEN 1951 AND 1986



Ownership Rates 1951-1986 GRAPH 1 with it many workers that previously lived in the city near their factory jobs, to the suburb, to be close to work Many people also moved to the suburbs because of the congestion, and pollution of the city. As a result of this decrease in homeownership, tenancy increased. The low income poor were left in the central city. Financial reasons held them back from moving to the suburbs, and therefore relied on rental accommodation. Also during the 1960's a lot of high rise apartments were built. Manv of them were occupied by relatively low income, young single This also contributed to the rise in tenancy. persons.

The metropolitan suburbs, including Etobicoke, North East York, York, and Scarborough also indicates a York. sharp decline in the percentage of homeownership. This may thought to be contradictory to what was said about people leaving the central city and moving to the suburbs, but this was the time of the baby boom and a lot of high rise apartment construction was associated with this. People also moving to the suburbs for industry sake, may not own their own homes. Sometimes industry built housing for its workers, but did not sell it to them, but rather rented it out. Appendices 2 through 6, represents the absolute numbers of homeowners in each borough, and with the exception of East York, the absolute numbers of homeowners higher than the number of tenants, and is steadily is increasing. Homeownership is increasing at a decreasing rate however, even though the number of tenants is below the

number of homeowners, because tenancy is increasing at a faster rate than ownership. This could be due to the number of rental homes built by industry, or the increase of apartment buildings at this time.

The Census Metropolitan Area, which excludes the city, and the boroughs did not provide any information for the CMA in 1951, as Statistics Canada did not take these areas into account. This graph shows a sharp decline in homeownership from 1961 to 1971. This outer area was likely all farm land prior to and including 1951. It may be speculated that much of this farmland was under ownership. As developers began buying up the farm land from the farmers developing it, ownership declined until and 1971. Percentage of ownership was decreasing, while the numbers of owners was increasing. This means that ownership was increasing at a decreasing rate. Tenancy although below ownership in numbers, was increasing at a faster rate than ownership. This was due to the apartment boom in these outer areas.

1971 to 1986

The years since 1971 though tell a slightly different story. The advent of condominiums and gentrification were the main reasons in the growth of homeownership with in the city of Toronto. Victorian homes that previously had been rented, were bought and converted into beautiful homes by the middle class professional baby

boomers. (Ostler, 1985) The construction of condominiums made inner city highrise ownership possible. Lower income households, because of these operations are being squeezed into a smaller pool of rental accommodation.(Knox, 1982) Tenancy in the metro areas have been steadily increasing, in some areas faster than ownership because of the building of high rise rental homes in these areas.

The City of Toronto which had been declining in homeownership since 1951, turned more in favour of homeownership starting in 1971. The increase in the absolute number of homeowners (Appendices 1) of course is slight, and comparatively stable. 1971 to 1986 still shows a decrease in the rate of homeownership, although not as drastic as previously. The decrease in the ownership rate from 1971-1986 is only 2.07 percent. Homeownership is increasing, but at a decreasing rate. Tenancy is increasing at a faster rate than ownership, even though the absolute number of tenants in the city is less than the number of Absolute numbers of homeowners are increasing in owners. the city because of several reasons. One may be due to the revitalization and urban renewal of certain areas, and the other may be due to owner-occupied condominiums. These two phenomenons drastically push up the cost of housing, and for the lower to middle income class it is virtually impossible to afford to own a home, especially for a first time home buyer. Therefore even though the absolute number of owners may be increasing, those people who can afford these homes

is decreasing. According to the Property File Tax Assessment Records, ownership in the city has increased 4 percentage points from 1986 to 1988. This means ownership more recently is now increasing at an increasing rate.

The Metropolitan suburbs from 1971 to 1986 is slowly and steadily declining in the percentage of homeowners, even though the number of homeowners is increasing. (Appendix 2-6) The rates however, only decrease within 2 percent between 1971 and 1986. The suburbs being relatively new since the 1960's does not warrant gentrification or urban renewal as of yet. The construction of apartment complexes in the suburbs in recent years has increased the number of tenants at a faster rate than owners. This increase in apartment buildings in the suburbs is due to the increase in the cost of homes. Many large and expensive homes are being built in the suburbs to accommodate the higher income people. There has not been very much affordable housing built within the suburbs as of late. Many middle income people want to live in the suburbs, but just cannot afford the homes there.

Ownership in the out lying areas, beyond the suburbs, have actually been increasing in ownership rates since 1986.

Thee Census Metropolitan Area, outside the metro boundaries (CMA Rest) actually indicates the increase from 72 percent in 1971, to 75 percent in 1986. Developers have taken the rolling hills of the once beautiful country side and have turned them into a massive development project.

There have been many large and expensive homes built in the out lying areas. York Region, north of Toronto, is a prime example of this type of development, which has caused much The homes built here are built strictly for controversy. ownership. This is the policy of the municipalities. Some condominiums have also recently been built in these outlying Older people retiring want to move away from the areas. city, and yet want to maintain the security of ownership. Condominiums allow them to move away from the congestion of the city, retain their security of ownership, but are free to go as they please because the responsibility of a condominium is less than a house as it is maintenance free.

CHAPTER 4

4.1 General Patterns in the City of Toronto

A closer look at the City of Toronto reveals where the increases and decreases took place, according to census areas.

Figure 1, which is a census tract reference map, represents the overall area increases and decreases that took place between 1971 to 1981. It shows a unclear pattern of increase of homeownership towards the east end of the city, as well as slightly north, plus a small cluster of increase between Bloor and Queen Streets slightly to the west. Directly beside this area lastly described, both to the east and west of it are areas of considerable decline in homeownership. The areas of increase and decrease seem to be clustered together in different areas of the city. The rest of the areas within the city represent areas of insignificant change in terms of ownership or tenancy.

Figure 2, represents changes in tenure from 1981 to 1986, according to the census figures. There really has been little change during this time period that has taken place. There has been slight increases in homeownership between 5 to 15 percent, that have taken place around the central areas of the city. Two areas of considerable increase have taken place near the south end of the city. One of these is directly on the Toronto Islands. There are a few areas of decrease in ownership, again near the centre





of the city and a few areas towards the eastern end.

Figure 3, represents the total change in tenure from 1971 to 1986. This shows the overall pattern of change during the study years. Because of the very slight changes from 1981 to 1986, the pattern of tenure is much the same as it was from 1971 to 1981. There is a positive pattern of increase to the east end of the city, as well as to the slightly northern areas. There are a few areas of increase in the central city, but mostly areas of decrease can be found here. There is one large census area that is unusually increasing in ownership to the very west of the city.

Figure 4, represents increases in housing tenure from 1986 to 1988, according to the Property File Assessment Records. This shows remarkable increase in many areas of the central city. Many of the central areas of the city are increasing at least between 5 to 15 percent. A few other areas are increasing higher than 15 percent. The waterfront seems to be an area of great increase.

4.2 SPECIFIC AREAS OF INCREASE 1971 TO 1986

Specific tracts between 1971 and 1986, increased in ownership rates by a substantial amount beyond what the other census tracts did during this time period in the City of Toronto.

Figure 3, indicates a group of five tracts which increased more than 15 percent over these fifteen years.






These tract numbers specifically are 121, 120, 89, 87, and 67. By looking at each tract through housing and certain demographic characteristics for the years 1971 and 1986, changes between these two census years in these factors may help explain the increase in ownership rates, as indicated in table 1.

TABLE 1

INCREASE IN OWNERSHIP 1971-1986

Census	Tract	121	23.29%
Census	Tract	120	23.34%
Census	Tract	89	23.72%
Census	Tract	87	18.36%
Census	Tract	67	20.97%

Ley (1985), indicates that between 1971 and 1981 that all of these tract areas had revitalization taking place during this time. Tract 87 on the margin of Rosedale began revitalization in the mid 1950's. Tract 67 incurred remarkable revitalization. This area falls into Cabbagetown. 120, and 121 which also experienced immense gentrification, falls near Rosedale and Forest Hill. These areas are all prominent districts in the city today.

The census has listed types of units i.e. single detached, apartment, and other) at the tract level. It does not indicate what units are owned or rented, but it is

interesting to note the changes in the number of types of Two of the tracts increased in terms of units.(Table 2) single detached dwellings, while the other three decreased. The change in either case was very small and likelv insignificant. In an area being gentrified the number of single family units is likely to increase because of deconversion. One house may have more than one unit contained within it with more than one family. Gentrification usually re-establishes a house to a single unit.

The number of apartments in four of the areas decreased drastically.(Table 2) Apartments in tract 87 fell from 1695 units in 1971 to 435 units in 1986. A decrease of that magnitude may be due to demolition or conversion to condominiums. Gentrification reduces the number of rental units in an area. Multi-unit buildings or houses are reconverted into one unit. Lower income often in these apartments are evicted because the landlord who can no longer make a profit either sells the property or redevelops it to make a higher profit himself.(Smith, 1979)

The category referred to as other increased in every area from 1971 to 1986.(Table 2) In some cases as in tract 87 it increased dramatically, from 180 units in 1976 to 1155 in 1986. This category may refer to duplexes, single attached dwellings, condominiums or the like. Condominiums have been increasing within the city, and are usually owner occupied.

T	A	B	L	Е	2	
_						

	INCIGADE O	r Diappring		1-1700	
TRACT	120	121	89	87	67
YEAR	71 86	<u>71 86</u>	<u>71 86</u>	<u>71 86</u>	<u>71 86</u>
Single Det.	75 65	110 125	55 30	535 595	95 80
Apartment	255 145	625 420	365 435	1695 435	205 15
Other	215 440	110 480	180 235	180 1155	630 650

INCREASE OF DWELLING TYPE 1971-1986

In all of the five census tract areas population has declined.(Table 3) With population declining and the number of units increasing in certain areas or remaining constant, this means the number of people per household is declining. The term referred to people moving in these areas that are gentrified are D.I.N.K.S. (double income with no kids) There are also single people living here. More women are joining the work force at the professional level, earning a good wage and are having children later in life or not at all.

TABLE 3

CHANGE IN POPULATION 1971-1986

TRACK	<u>1971</u>	<u>1986</u>
120	1470	1425
121	2010	1875
89	1270	1200
87	6210	4670
67	2880	1820

In terms of education, the number of people with a university degree or higher has greatly increased over the study period.

Table 4, shows the number of people with a university degree or higher in 1971 and in 1986. As these areas become gentrified or revitalized, the people moving in as stated before are professionals. It can be assumed that professionals have a higher level of education on average than blue collar workers. Also the number of women with a university degree has increased. The rise in education in these tracts is qualified by using the increase in percentage of the CMA, and then by using location quotients.

The location quotients indicate that the rise in education is proportionately higher in these census areas than in the CMA. From this, gentrification can be inferred because in revitalized areas it is characteristic that the occupants have higher education.(Ley, 1985)

INCREASED 1	N A UNIVERSI	<u> FY EDUCATI</u>	<u>ON FROM 1971</u>	-1986
TRACK	<u>1971</u>	L.Q.	<u>1986</u>	<u>L.Q.</u>
120	17.8%	2.7	68.5%	4.9
121	15.6%	2.3	58.1%	4.2
89	17.3%	2.6	44.1%	3.2
87	29.6%	4.5	59.1%	4.2
67	10.8%	1.6	57.8%	1.6
CMA	6.6%		13.8%	

TABLE 4

The types of employment have also changed in each of The census categorizes different divisions of these areas. The employment type that was prevalent in 1971, was labour. no longer dominant in 1986. (Table 5) With increased education, a decrease in population, and an increase in ownership, one might expect the trend to follow in an increase in professional jobs in these areas. The type of work most prevalent for men in 1971 was technological, social, religious, artistic, and related occupations. For four of the tracts in question this was true. This follows along with the fact that the early gentrifiers in the 1970's were artists, students, and pre-professionals, who thought it a novel idea to revitalize old warehouses into lofts and flats. Census tract 87, was the only one with males highest in the division of management and administrative. The category with the highest number of female labour for all tracts in it was clerical and related work. This reinforces the occurrence of suppression of women in the work force into low paying jobs. In 1986 there was quite a shift in the types of jobs held by both males and females. Numbers were the highest in the management and administration category, in tract numbers 120, 121, 89, and 87. Tract 67 was the only one that remained in the technological, social, religious, and artistic category. Women were highest in the management and administration category in the same tracts as the men, except for tract 89. In this tract they remained in the clerical and related positions. In tract 67 they

moved to the category of technological, social, religious, and artistic.

The increase in professionals, and education in these five census tract areas, infers that household incomes would also increase from 1971 to 1986. Table 5, shows the increase in incomes for each census tract during this study period, as well as for the CMA. The tract areas increases were substantially larger than the CMA's. With women entering the work force in more professional occupations, and education increasing for both males and females, it is not unexpected that household incomes would increase within the city faster than the CMA.

TABLE 5

HOUSEHOLD INCOME DURING 1971 AND 1986

TRACT	1971	1986	<u>% 1971-1986</u>
120	\$11,900	\$73,700	13.9%
121	\$12,143	\$66,760	15.4%
89	\$9,775	\$79,922	10.8%
87	\$22,192	\$90,140	19.6%
67	\$10,219	\$ 58,267	14.3%
СМА	\$11,912	\$43,025	8.4%

By looking at these certain census tracts that have rapidly increased in ownership during the years 1971 and 1986, we may infer that certain processes such as gentrification or condominium construction are taking place within the inner city, or at least within these areas. Ley (1985) confirms the fact that revitalization definitely occurred in these areas between 1971 and 1981. As stated previously these areas were dramatically increasing in ownership, especially during this ten year period.(Figure 3)

4.3 A MORE RECENT LOOK AT OWNERSHIP IN THE CITY 1986-88

Using the property file tax assessment data for both 1986 and 1988 it is possible to see what type of units in certain areas are increasing in homeownership during this time period, and from this information speculate as to what reasons ownership increased.

Map 4, documents the increase in ownership from 1986 to 1988. It is clearly shown that during this period many areas in the central city have increased by more than 5 percent, and four areas inparticular have increased greater that 15 percent. These four areas, (15, 12, 89, and 62) are studied through the property file tax assessment rolls, comparing what types of units have increased the greatest amount between 1986 and 1988.

In all four of the basic planning units which correspond to the same census tract areas, apartment condominiums have increased most, and in some areas this is

the only type of unit that increased at all. In B.P.U. 62, ownership increased from 3.3 percent in 1986 to 15.2 in 1988. Most of this increase was due to condominium construction. In B.P.U. 89, apartment condominium ownership increased as well as a small number of single detached, attached, and duplexes. Ownership increased from 37.9 to 47.6 of this ownership is due to condominiums. 46.6. B.P.U. 12 increased drastically in condominiums also. Τn fact apartment condominium units is the only kind of unit in this tract. Ley (1985) reports that in this tract in 1981 that this was a completely non-residential area. The building in this area is not unexpected though because it is right on the waterfront, which seems to be a trend in Ownership increased from 19.5 construction recently. in 1986 to 34.7 percent in 1988.

Apartment condominiums have definitely been rising at a high rate. Due to the small increase in ownership in any other type of unit, it may be the opinion that gentrification in this areas is not occurring. It may be speculated that if homes in these areas were owned prior to gentrification, and then again afterwards, the actual level of homeownership would not change.

CHAPTER 5

CONCLUSION AND SUMMARY

There have been many economic and social forces such as capital accumulation, gentrification, condominium construction and changing lifestyles that have contributed to the patterns and trends of homeownership in the City of Toronto. This change in ownership changes the social geography of the city making it necessary to study the changes that have occurred.

Ownership rates have been decreasing from 1951 until 1986, in the City of Toronto and the whole CMA. It was not until 1986 that ownership rates in these areas started to increase. The absolute numbers of homeowners though steadily increased throughout this period.

The baby boom of the late 1940's and 50's eventually led to an apartment boom in the 1960's and early 70's. Highrise apartment buildings were being constructed in the city well in the suburbs as as at а fast pace. Suburbanization was also catching on at this time and people were moving away from the city in order to own their own homes in the suburbs.

The phenomenon of gentrification gained momentum in the 1970's. It brought with it increased housing prices, displacement of low income, and a changing social geography of the city. The population decrease and the homeownership increase which also occurred is due to the deconversion of existing housing.

Since the mid 1980's however, the increase in ownership has been especially associated with construction of condominiums. This construction has much to do with peoples changing lifestyles, and their desire to live in the city without the responsibility of a house.

With the current condominium glut and the cooling off of house price inflation, it will be interesting to see whether recent increases of homeownership in the central city will continue.

Property File Tax and Census Data

SDo	SDt	SDa	SAo	SAt	SAa	RW	RWC	RWC	AŬa	ACt	нCа	ΡL.X
	2	11	103	55	158	0	0	0	0	0	0	16
Ó	244	244	0	0	0	0	0	0	0	0	0	0
0	0	Ō	0	O	O	Ō	Q	Ō	0	Q	0	Ö
27	4	31	25	5	30	O	O	0	Q	0	0	141
25	5	30	61	20	81	0	0	0	0	90	90	79
0	Ö	0	0	O .	O	0	Ó	0	0	165	165	O
4	3	7	37	21	58	0	0	0	0	0	0	45
ò	0	· 0	0	O A	0	0	0	0	123	0	123	. 0
0	0	0	0	O a d	0	0	4/	47	1/8	210	388	0
8	4	14	705		100	76	U 115	110	1	44	43	107
	37	750	035 035	70	401	40	40	110	40	67	17.72	272
A90		576	200	202	207	42		40	07	7.0	102	167
477 640		401	111		174	0	ő	0	10	-+0	10	107
495	52	570	410	101	720	ŏ	ŏ	0	10	'n	1	445
167	<u>र</u> म्	202	211	50	720	71	24	05	л Л	-1	-т С	.07
481	73	554	639	184	824	27	 0	27	0	62	62	205
180	77	202	506	106	612	2	13	15	0	2	2	192
183	31	214	622	134	756	õ	- Î	0	ŏ	4	4	235
134	34	168	570	386	956	7	164	171	õ	5	5	204
4	4	8	107	815	922	ò	0	ō	ž	85	88	20
0	0	ō	Ŏ	Ō	0	ò	ō	ō	ō	145	145	ō
43	7	50	126	28	154	21	20	41	0	2	2	113
15	9	24	132	37	169	0	0	0	4	27	31	34
4	1	5	101	56	157	Ŏ	0	0	63	459	522	47
26	22	48	99	48	147	0	Ō	0	257	160	417	123
23	6	29	113	55	168	0	O	Ō	0	Ō	0	245
7	5	12	75	12	87	0	0	0	33	120	153	74
124	14	138	373	54	427	0	Ō	O	0	16	16	407
4.1	4	45	178	22	200	Q	O	0	Q	Ō	0	450
40	5	45	173	20	193	0	0	Q	0	O.	0	754
58	5	63	217	33	250	Ó	O	O	0	0	O	385
53	7	60	299	37	336	0	0	O	Q	0	O	537
45	1	46	137	18	155	0	Ó	O	0	0	O	354
61	16	77	271	30	301	0	0	0	0	O.	Ō	337
125	12	137	332	50	382	- 6	0	6	0	<u>o</u>	0	562
97	7	104	186	22	208	0	O .	0 V	0	0	, O	338
96	12	108	133	15	145	0	0	0	0	0	0	412
1/3	20	200	3/	2	42	0	U S	0	0	0	0	/11
00 01	, ,	70	247	00 24	202 720	0 6	0	O	0	0	0	410
07	10	107	144	্ৰ প্ৰা	100	Ä		- Ö	ő		0	070 840
77	10	20	1.00	15	107	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			0	0		700
20	- 1		/^* 1 उट	10	150	ő	0	0	0	0	0	707
19	7	21	133	12	145	0	0	0	ŏ	- O		281
54	9	63 	132	19	151	16	14	30	o o	i.	õ	465
72	14	86	299	Å9	368	ŭ		0	ő	ŏ	ő	308
51	6	57	141	29	170	ŏ	ŏ	ŏ	ŏ	ů.	ö	103
3	14	17	4	45	49	ō	ò	ŏ	ŏ	ŏ	õ	2
- 1	0	1	10	7	17	ō	ō	ō	93	163	256	1
7	4	11	58	5	63	7	5	12	181	101	282	11
3	6	9	25	15	40	0	0	0	ō	0	0	13
0	1	1	4	2	6	0	0	0	Ŏ	0	0	2

SDo	SDt	SDa	SAo	SAt	SAa	RW	RWC	RWC	ACo	ACt	ACa	PLX
в	5	13	69	19	88	0	0	0	452	349	801	39
69	5	74	358	49	407	18	3	21	O	0	0	78
58	4	62	327	64	391	22	1	23	11	154	165	96
215	20	235	325	39	364	0	0	Q	0	144	144	238
387	53	440	745	167	912	0	0	Q	Q	Ō.	0	376
137	25	162	229	63	292	Q	Q	0	0	Q	Q	166
291	42	333	349	87	436	0	0	0	0	15	15	159
58	14	112	594	119	712	0	0	0	O O	, O	0	190
240	41	281	532	97	629	, O	0	0	0	0	0	92
298	37	335	577	84	661	0	0	0	0	1.	1	209
520	47	567	455	105	560	0	<u>o</u>	0	0	82	82	220
515	48	563	746	95	841	_0	0	0	23	1	24	100
407	42	449	465	95	560	20	2	- 22	0	55	55	197
-145	15	158	405	22	427	0	0	0	0	0	0	240
186	18	204	<u>∡</u> 47 7/7	30	410	15	0 5	0	Ö	0 0	0	202
147	18	163	367	43	410	10	0	20		- O	4	301
208	<u>∠</u> 8 10	200	174	্র হহ	207	0	0	ŏ	~	O	ō	191
£1.4 507	10	200 275	70	دد ج	207	ŏ	0	ŏ	0	Ő	Ő	109
277		000	157	10	140	- হহ	4	77	54	494	540	1.6.1
307	40	407	107		707	00	- T	O	226	130	358	- C - C
12	15	27	50	29	79	õ	ŏ	ŏ	195	29	284	17
54	10	62	278	39	317	ŏ	ŏ	ŏ	109	125	234	- ao
89	28	117	205	44	249	32	10	42	109	42	151	241
110	19	129	174	36	210	0	0	Ö	18	44	62	372
114	17	133	382	68	450	ō	ō	ŏ	õ	- O	ō	614
215	31	246	242	38	280	ō	ō	ō	Ō	ó	Ō	649
121	17	138	257	26	283	0	0	Ó	Ō	Ō	0	305
243	29	272	375	40	415	7	2	9	12	O	12	436
237	41	278	390	57	447	Ō	0	0	0	\odot	0	876
87	16	103	469	81	550	19	Ō	19	0	96	96	422
232	17	249	286	34	320	0	0	0	O	0	0	356
42	3	45	137	29	166	0	0	0	0	0	0	87
102	15	117	124	28	152	0	0	Q	Ō	0	0	279
104	16	120	95	41	136	O	Ó	Ō	8	ć	14	186
545	40	585	148	5	153	0	O	0	408	112	520	461
795	57	852	229	11	240	0	Q	0	Q	0	0	486
259	34	293	341	48	389	Ō	Ō	0	0	0	0	410
91	18	109	134	36	170	0	0	0	Ó	0	Q	73
273	31	304	510	89	599	0	Q	0	O	0	0	271
116	13	129	551	88	639	0	0	0	O	O	0	336
199	16	215	289	38	327	Ō	Q	Õ	O	58	58	283
174	21	195	204	31	235	Ō	Ō	0	O	O	0	457
159	19	178	325	19	344	0	0	0	Q	Q	Q	188
352	32	384	436	59	495	0	O	Q	O	O	Ŏ	509
169	15	184	52	25	77	0	Ō	Ó	0	Ō	0	266
281	28	309	196	23	219	0	Q	0	0	O	0	413
116	10	126	299	93	392	0	50	50	0	159	159	279
267	29	296	191	29	220	0	0	0	O O	0	0	242
78	11	89	145	20	192	4	1	3	Q •	2	<u> </u>	71
183	15	198	53	10	63	46	5	51	1	1	100	104
383	39	422	39	2	41	¥	S	14	110	12	1.4	100
269	22	291	127	14	141	0	0	0	0	141	141	.~ T≾A
- - - -	0	4	1	1	170	-0 	0	0	100	170	U • • • • •	ن •
19	10	40 1055	11/	13	107	Z1		28 0	147	177 A	J/I 0	01 177
1004	21	1022	41	0	102	U U	U	0	0	0	0	ようご

.

	SDo	SDt	SDa	SAo	SAt	SAa	RW	RWC	RWC	ACo	ACt	ACa	PLX
	A "7 Q	10	 5/2	546	L 4	410	1 7	 0	1 7		 0	0	 QД
	704	47	701	570	00 00	612 610	- 0	0		0 0	0	o O	77
	704	17	130	147	111	274	ŏ	ŏ	0	0	Ő	- D	
	754	54	910	100	21	277	ŏ	ŏ	ŏ	Ó	л¢	49	143
	037		070	15	يد يد 1	14	ŏ	ŏ	0	103	ر ب ج	106	270
	201	20	777	-7	С		ŏ	ŏ	ŏ	100	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0.01	エノ ちつ
	674 520	ा जन्म	100	316	53	740	0	0	0	0	0	ŏ	00
	10	00	10	10	15	307	Ő	ŏ	0	28	37	ن 45	00
	445	111	756	エノ マウマ	47	744 744	10	8	19	16	30	49	73
	720	-11 77	750	1		200	Õ	0	10	- 0	0	ŭ	12
	1138	49	1207	92	17	109	ŏ	ŏ	ŏ	ŏ	ŏ	õ	117
	479	13	451	7	10	17	o o	ŏ	õ	ŏ	ő	õ	21
	1749	179	1907	583	80	443 	ŏ	ŏ	õ	õ	ŏ	ŏ	114
11 A.	1053	101	1154	145	28	193	ŏ	ŏ	ŏ	ŏ	ŏ	ů Ŭ	85
	1000	 0	0	0	Ū.	0	ŏ	ŏ	ŏ	õ	ŏ	ŏ	0
	37	11	48	300	85	385	Ř	2	11	õ	õ	õ	223
	51	R	59	59	17	76	õ	õ	ō	ŏ	ŏ	ŏ	167
	1452	148	1800	162	20	182	12	2	14	690	194	884	225
	0	- io	0	3	3	6		õ	ō	0	- o	0	
	165	26	191	523	66	589	19	2	21	ò	113	113	446
	93	9	102	212	28	240	0	0	0	Ō	0	0	210
	119	10	129	283	36	319	42	5	47	335	40	375	127
	221	10	231	Ō	Ō	Ō	0	O	0	0	O	0	5
	31	16	48	216	87	303	0	0	0	Q	10	10	64
	Ō	0	Ó	94	21	115	Ō	Ō	Ō	32	991	1023	7
	0	0	0	0	Ō	ō	0	0	0	629	336	965	0
	6	2	8	67	28	95	19	5	24	166	364	530	12
	538	32	570	10	0	10	Ŏ	Ō	0	0	53	53	20
	900	22	922	0	O	0	Ö	O	0	Ō	O	0	33

	PLX	PLXa	AF'T	APTt	APTa	RH	RHt	RHa	ΣN	INT	INT	OTH	OTHt
	17	33	0	0	0	Ō	0	0	0	2	2	0	4
	Ö	0	0	0	Ö	· `0	Q	Ō	0	Q	Ŏ	0	Ō
	0	0	Ō	0	0	0	Ó	0	0	1	1	0	0
	384	525	1	2348	2349	5	83	88	0	4	4	0	22
	152	231	2	1377	1379	4	61	65	0	3	3	9	70
		. 0	ō	0	Ö	Ō	o	õ	ō	0	Ö	Ó	1
	71	116	o o	ò	ŏ	1	Ō	1	ō	1	1	15	164
	ō		, o	429	429	ō	0	Ō	ŏ	0	Ó	o	Ö
	ō	ō	ō	58	58	ŏ	Ó	ŏ	ō	4	4	1	42
	39	53	ō	ō	0	ò	0	0	Ō	2	2	27	80
	119	226	ō	ō	ō	ō	Ó	Ō	ō	1	1	6	48
	743	1015	1	550	551	1	0	1	0	3	3	8	89
	241	408	1	102	103	ō	ō	ō	ō	ō	ō	20	63
	100	203	õ	135	135	ò	ō	ō	ō	ō	ō	6	67
	565	1010	ō	436	436	ò	0	0	ŏ	0	0	21	82
,	82	165	ō	- 611	611	ō	0	Ō	Ó	0	Ó	2	14
	258	463	ō	246	246	ō	-0	ō	õ	1	1	29	102
	145	337	ŏ	254	254	ò	õ	ŏ	ŏ	ō	ō	29	48
	281	516	õ	7	7	3	a 4	7	ŏ	2	2	21	104
	306	510	1	181	182	ŏ	ó	ó	ŏ	õ	ō	34	177
	78	58	ō	82	82	ŏ	ŏ	ŏ	ŏ	2	2	13	31
	0	0	ŏ	2383	2383	ŏ	ŏ	ŏ	ŏ	ō	õ	õ	ō
	358	471	ŏ	924	924	7	59	66	ŏ	3	ž	15	136
	154	199	ŏ	2016	2016	2	18	20	õ	Ř	ž	10	64
	204 91	170	ŏ	740	740	ō	- C	4	ŏ	1	1	- 7	109
	255	770	ŏ	700	700	ŏ	78	20	ŏ	357	757	1 4	115
	224	140	ŏ	107	107	ŏ		20	ŏ	007	007	27	205
	24.4 40	1/17	1	950	051	ŏ	ő	~ ^	ŏ	ŏ	ŏ	~~	110
	320	771	ŏ	700	701	1	7	9	ŏ	7	~	42	109
	307	751	Š	4.7	4.7	å		ິ 1	ŏ	7	् र	72	107
	470	1707	Ň	170	174	Š		Ô	Ä			20	102
	407	1070	Š	10	10	Š	11	17	ŏ		د م	40	170
	407 547	1004	~	140	140	× 1	11	10	0		~	47	100
	04/	1084	Š	.142	144	1	, O		0	, r	, T	20	100
	2/4	020 577	~	120	100	Š	0	ő	ő	0	0	31	100
	200	100/0	~	1005	1205	-		• • •	0	Ő	0	20	101
	464	1026	0	1203	1203	ਹ 7	11	10	0	0	0	22	100
		0/0	Š	3/0	370	् व	70	70	×	0	0	20	129
	330	742		306	308		34	マロ	0	<u>ک</u> ر •			150
	770	1981	Ť	204	203	13	£0	37	0	1	1	27	108
	328	/41	0	198	188	1	1	Z	0	0	0	52	15/
	449	1024	0	0	0	0	5	5	0	0	<u> </u>	19	70
	488	956	1	1128	1129	1	1	2	0	4	4	21	166
	396	/49	0	12	12	1	20	21	0	1	1	15	102
	571	1358	1	71	72	0	0	0	0	0	0	20	128
	330	611	0	104	104	1	7	8	Ō	1	1	10	49
	551	1016	0	62	62	6	6	12	Ó	2	2	10	74
	345	653	1	25	26	1	13	14	0	5	5	24	97
	136	239	0	399	399	1	1	2	0	O	Ō	12	192
	59	61	0	362	362	0	8	8	0	27	27	1	9
	17	18	0	1769	1769	0	_2	2	0	26	26	2	1131
	50	61	2	6645	6647	4	38	42	0	2	2	3	315
	77	90	0	1181	1181	0	0	0	0	1	1	1	5
	44	46	0	4811	4811	0	0	Q	0	0	O	3	2144

	PLX	PLXa	APT	APTt	AFTa	RH	RHt	RHa	IN	INT	INT	отн	OTHt
	174	213		1898	1899	5	133	138	0	2	2	4	84
	108	186	ō	34	34	5	11	16	0	1	1	4	17
	155	251	Ó	134	134	Q	1	1	0	0	0	5	51
	196	434	ō	19	19	0	5	5	0	1	1	16	66
	229	605	1	743	744	0	0	0	0	3	3	14	122
	165	331	0	36	36	0	0	0	1	0	1	20	48
	201	360	0	21	21	0	0	0	0	0	0	12	43
	132	322	Ó	283	283	0	0	0	0	0	0	4	56
	83	175	Ō	41	41	0	0	0	0	0	0	7	50
	160	369	1	239	240	1	1	2	0	Ó	0	20	25
	297	517	ō	609	609	0	58	58	Ō	0	0	14	57
	167	317	ŏ	222	222	ŏ	1	1	0	1	1	25	80
	141	338	ō	1269	1269	1	ō	1	Ō	0	0	40	223
	152	378	ŏ	0	i	ō	ō	ō	ō	0	0	19	83
	107	369	ŏ	7	7	ō	ō	Ō	0	0	0	25	81
	182	494	ō	432	432	ō	3	3	0	0	0	18	144
	289	610	ŏ	84	84	Ŏ	ō	ō	Ó	1	1	11	67
	244	435	ő	1085	1085	ť	Ó	1	ō	2	2	14	68
	144	755	ŏ	51	51	õ	1	ĩ	ō	ō	ō	2	10
	379	100 100	1	597	598	ă.	ŝ	11	ŏ	7	7	2	9
		12	ō	301	301	õ	õ	ō	ŏ	ò	ò	2	339
	<u>ь</u>	81	ŏ	166	166	õ	ŏ	ō	ŏ	ō	Ó	10	101
	191	271	õ	587	587	ŏ	õ	õ	ō	1	1	10	87
	449	000	~	2497	2495	14	202	216	ō	11	11	13	133
	740	1112	<u>л</u>	1626	1630	13	76	89	ŏ	3	3	7	266
	501	1115	-7 0	125	125	1	2	ري ج	ŏ	5	5	23	169
	462	1101	0	120	20	ò	ō	0	ŏ	ŏ	ŏ	16	86
	402	1101	~	15	15	ŏ	ő	ŏ	ŏ	1	1	20	88
	273	270	~	10	10	~	Š	2	ŏ	1	1	20	95
	3/3 66/	809	0	101	604	Š	6	- -	ŏ	1	1	45	179
	228	1402	0	100	400	~			Š	ŏ	ò	41	1 E 7
	287	709	0	109	107		0	~	Š	ŏ	ő	-7-C -	1005
	505	891	1	200	201	1 T	4	•	0		4	10	175
	120	207	0	1/	17	1	0	1	0	- -	1 ()	10	170
	<u>۲</u> 6۵	675	0	45	40	0	ъ • ??	8	0	0 5	~	10	17
	300	486	2	4019	4021	2 4	10	10	0	· ·		4 1	4
	<u>89</u>	850	1	139	140	د م	4	~	Ú Ó	1	1	0 70	175
	372	858	0	121	121	0	· ·	0	0	بند 	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	+0	112
	343	/53	0	28	28	د	1	4	0	د ^	ා ර	¥د. ح	110
	61	134	0	0	0	0	0	0	0	0	0 ~	* 7	27 21
	102	373	0	,	,	0	Ų →		0	~ ~	0	14	01
	236	572	0	697	697	0 Q		/	0	0 	0	20	00
	180	463	0	20	20	0	Q Q	O Ô	0	•	U 4	23	20
	305	762	0	11	11	0	0	Q C	0	1	1	10	04
	89	277	0	0	0	0	0	0	0 ^		Ý.		11
	360	869	0	7	7	0	1	1	0	1	1	13	/6
	319	585	0	43	43	1	7	8	0	0	0	12	127
	388	801	6	683	689	0	6	6	Q	1 -	1	28	117
•	169	448	0	378	378	0	0	0	Ö	0	0	9	19
	277	519	0	268	268	0	1	1	0	7	7	17	136
	153	244	1	56	57	1	4	5	0	1	1	5	16
	298	432	1	457	458	3	12	15	0	2	2	2	12
	168	267	5	1435	1440	7	33	40	0	2	2	9	31
	270	399	0	1884	1884	0	0	0	0	0	0	1	4
	7	10	0	1423	1423	0	0	0	0	0	0	0	0
	118	179	0	1698	1698	0	Q	Ó	0	1	1	1	509
	235	368	0	55	55	0	0	0	0	0	0	0	0

PLX	PLXa	APT	APTt	APTa	RH	RHt	RHa	IN	INT	INT	OTH	OTHt
146	240	0	434	434		0	0	0	0	0	5	22
99	176	Õ	513	513	0	0	0	Q	0	0	10	75
291	389	0	5147	5147	Ō	Ō	0	0	7	7	12	247
501	644	0	475	475	Ó	0	Q	1	1	2	7	92
191	218	3	951	954	0	1	1	0	0	0	2	7
146	198	0	35	35	0	0	Ō	0	1	1	2	49
190	278	0	1522	1522	0	0	0	0	102	102	2	66
35	43	1	5438	5439	0	0	0	0	2	2	4	41
172	245	0	1460	1460	0	1	1	0	Ō	0	6	71
74	86	0	258	258	0	0	0	0	0	0	0	1
182	299	0	723	723	2	0	2	0	2	2	9	47
10.1	122	0	0	0	0	0	0	0	0	0	0	0
177	293	Û	272	272	0	0	0	0	1	1	11	84
280	365	Ó	260	260	0	0	0	0	0	0	10	79
0	0	0	0	0	0	0	0	0	0	0	0	4
234	457	0	1298	1298	0	1	1	0	3	3	22	104
303	470	1	3384	3385	2	25	27	0	7	7	2	72
371	596	12	960	972	0	1	1	0	2	2	10	40
Q	Q	0	555	555	0	1	1	0	3	3	3	441
405	851	0	103	103	1	15	16	0	4	4	22	68
196	406	0	682	682	0	2	2	Ö	2	2	8	87
189	316	0	352	352	1	8	9	0	3	3	5	98
2	7	0	135	135	Ō	0	0	0	0	Q	3	28
91	155	0	17	17	0	0	0	0	Ō	0	8	69
9	16	0	783	783	0	0	0	0	0	Ó	2	0
0	0	0	166	166	0	0	0	0	0	0	0	47
39	51	0	1169	1169	5	123	128	0	8	8	3	69
13	33	1	2580	1581	0	0	0	0	1	1	0	2
11	44	1	985	986	0	0	0	0	1	1	5	98

OTHa	TTLo	TTLt	TTLa	BPU	TRAC	ARate	CRat	Ratedi	Cown	Cten
4	128	80	208	1	1	61.5	63.2	-1.6	120	75
0	0	244	244	2	2	0.0	91.1	-91.1	205	30
0	0	1	1	3	6	0.0	0.0	0.0	0	Ŭ
22	199	2850	3049	4	4	6.5	7.3	-0.8	210	2670
79	180	1778	1958	5	5	9.2	10.3	-1.1	210	1835
1		166	166	8	8	0.0	0.0	0.0	0	15
179	102	260	362	11	11	28.2	28.6	-0.4	110	280
	123	429	552	12	12	22.3	47.7	-25.4	105	110
43	170	741	540	15	15	TTT	26.7	6.5	140	380
107	170	213	. 705	16	14	44 7	38.0	67	150	240
107	104	213	000	10	10	44.7	20 1	-75	405	270
07	0/0	4574	0510	21	21	37 5	707.1 70 7	-0.9	070	1570
7/	741	10/1	1500	20	21	27.0	20.0	-0.0	1030	1370
	70/	75/	1046		. 44	20.0		-0.2	1030	705
107	8/9	306	1233	23	23	/1.2	/3.3	-2.1	1570	320
103	13/0	1241	2811	24	24	33.9	38.3	-0.8	19/0	1205
16	638	822	1460	25	25	43.7	43.4	0.3	645	845
131	1380	928	2308	26	26	24.8	5/.4	2.4	1345	1000
77	909	590	1499	27	27	60.6	59.9	0.7	920	615
125	1064	567	1631	28	28	65.2	66.7	-1.4	1070	535
211	950	1253	2203	29	29	43.1	43.9	-0.8	980	1250
44	147	1057	1204	30	30	12.2	12.5	-0.3	150	1055
Ó	0	2528	2528	31	31	0.0	1.0	-1.0	25	2490
151	325	1537	1862	32	32	17.5	15.2	2.2	330	1840
74	197	2328	-2525	33	33	7.8	8.2	-0.3	205	2310
116	222	1471	1693	36	36	13.1	14.2	-1.1	225	1365
129	519	1326	1845	37	37	28.1	27.5	0.7	460	1215
227	403	687	1092	38	38	36.9	38.7	-1.8	385	615
122	198	1270	1468	39	39	13.5	14.0	-0.5	190	1175
151	947	556	1503	40	40	63.0	74.7	-11.7	960	325
127	694	448	1142	41	41	60.8	72.6	-11.9	690	255
114	987	895	1882	42	42	52.4	53.7	-1.3	1005	860
219	711	649	1360	43	43	52.3	57.3	-5.0	750	565
128	918	834	1752	44	44	52.4	54.3	-1.9	955	810
186	569	665	1234	45	45	46.1	41.5	4.6	600	845
93	695	478	1173	46	46	59.2	62.4	-3.1	730	440
177	1063	1886	2949	47	47	36.0	39.2	-3.1	1075	1670
157	652	877	1529	48	48	42.6	45.7	-3.0	660	790
	649	903	1552	49	48	41.8	45.7	-3.9	660	790
187	944	1389	2355	51	51	41.0	40.4	0.4	975	1435
209	798	714	1512	52	52	52.8	55 A	-7.8	795	630
89	1011	554	1565	53	57	64.6	67 2	-7 6	1005	490
197	754	1820	2574	54	50	29.2 20 7	30 7	_1 ⊿	800	1810
117	469	550	1019	55	55	44 0	45 5	0.5	480	580
140	1012	707	1000	54	50		57 1	7.0	1050	045
1-70	1012	504	0/0	50	57	14 7	17 C	J.0 _1 1	1000	700
07	4407		1400	U/ 50	57	40./ 10 1	4/.0	-7.0	430	473
101	000 705	101	1420	28 50	38 50	40.1 EE /	JI.Y	-3.8	6/0	630
121	703	268	1074	27	37	00.4	60.2 20 2	-4.8	680	400
204	308	/63	1071	60	60	28.8	27.2	-0.5	310	755
10	10	524	534	61	61	1.9	3.0	-1.2	15	480
1133	107	3115	3222	62	62	3.3	4.1	-0.8	115	2660
318	273	7165	7438	63	63	3.7	4.0	-0.3	285	6840
6	42	1285	1327	64	64	3.2	3.8	-0.7	50	1255
2144	9	6999	7008	65	65	0.1	1.1	-1.0	75	6865

OTHa	TTL.o	TTL.t	TTLa	BPU	TRAC	ARate	CRat	Ratedi	Cown	Cten	
88	578	2664	3242	చద	66	17.8	15.6	2.3	545	2950	
21	532	228	760	67	67	70.0	66.7	3.3	500	245	
56	519	564	1083	68	- 68	47.9	46.B	1.1	510	585	
82	794	490	1284	71	71	61.8	61.7	0.2	780	485	
136	1523	1317	2840	72	72	53.6	53.4	0.3	1510	1315	
68	553	337	890	73	73	62.1	65.1	-3.0	570	300	
55	811	409	1220	74	74	66.5	68.4	-1.9	810	375	
60	886	603	1489	75	75	59.5	60.5	-1.0	880	575	
57	871	312	1183	76	76	73.6	74.8	-1.2	860	290	
45	1106	547	1653	77	77	66.9	68.2	-1.3	1105	520	
71	1209	1255	2464	78	78	49.1	50.3	-1.2	1240	1225	
105	1459	615	2074	79	79	70.3	70.0	0.3	1435	610	
263	1130	1827.	2957	80	80	38.2	39.5	-1.3	1165	1785	
102	793	272	1065	81	81	74.5	78.9	-4.4	785	210	
106	720	243	963	82	82	74.8	81.7	-7.0	760	170	
162	859	827	1686	83	83	50.9	52.5	-1.5	850	770	
78	868	504	1372	84	84	63.3	65.3	-2.0	875	470	
82	592	1450	2042	85	851	29.0	30.1	-1.1	615	1425	
12	736	249	985	86	86	74.7	77.7	-3.0	750	215	
11	802	1499	2301	87	87	34.9	54.5	-19.6	1190	995	
341	270	782	1052	88	88	25.7	21.0	4.7	255	960	
111	284	464	748	89	89	38.0	43.9	-5.9	305	390	
97	531	1038	1569	90	90	33.8	34.8	-0.9	520	980	
146	705	3631	4336	91	91	16.3	16.8	-0.5	700	3485	
273	698	2810	3508	92	92	19.9	21.4	-1.5	740	2715	
192	1136	887	2023	93	93	56.2	58.7	-2.6	1110	780	
102	1122	676	1798	94	94	62.4	63.0	-0.6	1140	675	
108	703	440	1143	95	95	61.5	60.8	0.7	720	465	
119	1097	542	1639	96	96	66.9	69.4	-2.5	1100	480	
174	1548	1390	2938	97	97	52.7	50.2	2.5	1600	1590	
110	1038	666	1704	98	98	60.9	64.7	-3.8	1055	575	
1117	898	1853	2751	99	99	32.6	34.0	-1.4	900	1745	
154	286	305	591	100	100	48.4	53.2	-4.8	295	260	
197	523	671	1194	101	101	43.8	48.5	-4.7	550	585	
8	401	4399	4800	102	102	8.4	9.1	-0.7	425	4260	
63	1572	747	2319	103	103	67.8	67.9	-0.1	1585	745	
223	1558	738	2296	104	104	67.9	71.7	-3,9	1560	615	
150	1047	573	1620	105	105	64.6	66.1	-1.5	1055	535	
36	305	144	449	106	106	67.9	70.0	-2.1	315	135	
73	1066	283	1349	107	107	79.0	82.1	-3.0	1075	235	
105	1023	1126	2149	108	108	47.6	49.3	-1.7	1050	1080	
48	794	337	1131	109	109	70.2	72.5	-2.3	805	305	
64	845	423	1268	110	110	66.6	74.3	-7.7	840	290	
18	679	138	817	111	111	83.1	87.6	-4.5	670	100	
89	1310	536	1846	112	112	71.0	74.5	-3.6	1230	420	
139	500	536	1036	113	113	48.3	47.6	0.6	500	550	
145	924	1246	2170	114	114	42.6	46.6	-4.0	945	1090	
28	703	878	1581	115	115	44.5	44.0	0.5	715	915	
153	717	747	1464	116	116	49.0	50.4	-1.4	700	690	
21	325	264	589	117	117	55.2	51.9	3.3	340	315	
14	423	812	1235	118	118	34.3	40.2	-5.9	510	765	
40	661	1727	2388	119	119	27.7	27.0	0.7	590	1590	
5	526	2335	2861	122	122	18.4	23.6	-5.3	650	2095	
ő	13	1431	1444	123	123	0.9	1.8	-0.9	25	1385	
510	471	2541	3012	124	124	15.6	20.2	-4.5	590	2335	
0	1234	347	1581	125	125	78.1	80.1	-2.0	1265	315	
-											

•

отна	TTLO	TTLt	TTLa	BPU	TRAC	ARate	CRat	Ratedi	Cown	Cten
27	1141	717	1858	126	126	61.4	67.5	-6.1	1130	550
85	1330	844	2174	127	127	61.2	61.1	0.1	1335	845
259	649	5866	6515	128	128	10.0	10.6	-0.6	695	5880
99	956	1195	2151	129	129	44.4	46.1	-1.6	995	1160
9	987	1187	2174	131	131	45.4	47.1	-1.7	1015	1135
51	755	270	1025	134	134	73.7	73.7	0.0	755	265
68	926	1969	2895	135	135	32.0	32.2	-0.2	925	1950
45	78	5568	5646	136	136	1.4	1.5	-0.1	85	5550
77	1073	1878	2971	137	137	36.1	39.0	-2.9	1150	1800
1	733	366	1099	138	138	66.7	70.9	-4.2	730	300
56	1358	1040	2398	139	139	56.6	58.0	-1.4	1375	990
0	666	124	790	140	140	84.3	85.1	-0.8	655	115
95	2478	753	3231	141	141	76.7	77.7	-1.0	2515	725
89	1313	748	2061	142	142	63.7	65.0	-1.3	1335	715
4	0	4	4	406	14	0.0	0.0	0.0	0	0
126	590	1739	2329	407	10	25.3	26.4	-1.1	610	1700
74	282	3816	4098	408	7	6.9	7.3	-0.4	300	3825
50	2763	1738	4501	409	50	61.4	63.1	-1.7	2820	1650
444	6	1003	1009	411	35	0.6	1.1	-0.5	10	920
90	1176	802	1978	415	69	59.5	63.5	-4.0	1165	670
95	523	1006	1529	416	70	34.2	34.2	0.1	555	1070
103	912	741	1653	417	1201	55.2	53.9	1.3	900	770
31	877	452	1351	4189	130	66.5	68.3	-1.7	915	425
77	319	293	612	4001	18	52.1	54.9	-2.8	335	280
2	135	1804	1939	4023	17	7.0	7.3	-0.3	140	1790
47	629	336	965	4045	13	65.2	53.0	12.2	575	510
72	278	1807	2085	4134	34	13.3	11.4	2.0	285	2220
2	569	2681	3250	4203	133	17.5	18.9	-1.4	605	2595
103	939	1117	2056	4212	132	45.7	46.4	-0.8	945	1090
										and the set

.

	1	71al	71te	71ow	81rat	81all	81ten	81own	TRAC	Und	Unit	Ctot
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	230	105	130	64.86	185	65	120	1	9	18	190
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5	225	80	145	70.21	235	65	165	2	8	19	225
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ο.	0	0	Ŏ	ERROR	0	0	0	6	ō	1	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0	2900	2635	265	7.75	3095	2850	240	4	6	164	2885
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1135	935	200	11.24	1690	1505	190	5	-4	-87	2045
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0	0	0	0	ERROR	0	0	0	8	ò	151	15
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	360	200	160	34.29	350	235	120	11	-4	-23	385
12.51531551001005.0055055375-10-31617516034051.471552754358753441961525086571.105403108422535-23-1219351550249037.5577016802445150081221015475150567.449506501572121520223890335122072.95870440131027803112415551135269057.811475147029601485-25-225580775137542.1851584513562345-37-2261425775222564.041485101525001605262281060470153064.24910126521701200403015083598515.23125890101525151003110238023900.42516101615251510037275960123522.273306801005975971038415635104537.714654509201580113736	ō	0	0		EBBOR	0	0		17	õ	377	220
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	55	õ	55	5.00	100	100	5	15	ँ	15	525
375 34 4 19 415 250 865 71.10 540 310 845 2535 -23 -1 21 935 1550 2490 37.55 770 1680 2445 1500 8 1 22 1015 495 1505 67.44 950 650 1595 1215 20 2 23 890 335 1220 72.95 870 440 1310 2780 31 1 24 1555 1135 2690 57.81 1495 1470 2946 1485 -25 -2 25 580 795 1375 42.18 515 845 1355 2345 -37 -2 26 1425 795 2225 64.04 1485 1015 2500 1535 -36 -2 27 910 525 1435 63.41 940 590 1530 1605 26 2 28 1060 470 1530 69.28 1070 775 1840 2230 -27 -1 29 960 1205 2170 44.24 910 1225 2170 1200 4 0 31 10 2380 2390 0.42 5 1610 1615 2515 10 0 31 10 2380 2390 0.42 5 1610 1615 2170 -308 -14 3	5	435	275	155	51.47	340	140	175	16	-3	-10	795
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	845	310	540	71.10	865	250	615	19	4	34	875
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5	2445	1680	770	37.55	2490	1550	935	21	-1	-23	2535
121520223B90335122072.95B70440131027803112415551135269057.811495147029601485-25-225580795137542.1851584513652345-37-2261425795222564.041485101525001535-36-227910525143563.4194059015301605262281060470153069.28107077518402230-27-1299601205217044.24910126521701200403015083598515.231258901015251510033175223024057.2812511701300158011373613551475179518.1129021852475251510033175223024057.281251170130015801137361355140539.714654509201580113736137275960123522.273306801005975971038415635104539.714654509201360108<	5	1595	650	950	67.44	1505	495	1015	22	1	8	1500
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	о. Э.	1310	440	870	72.95	1220	335	890	23	2	20	1215
1485 -25 -2 25 580 795 1375 42.18 515 845 1365 2345 -37 -2 26 1425 795 2225 64.04 1485 1015 2500 1535 -36 -2 27 910 525 1435 63.41 940 590 1530 1605 26 2 28 1060 470 1530 69.28 1070 775 1840 2230 -27 -1 29 960 1205 2170 44.24 910 1265 2170 1200 4 0 30 150 835 985 15.23 125 890 1015 2520 8 0 31 10 2380 2390 0.42 5 1610 1615 2170 -308 -14 32 325 1475 1795 18.11 290 2185 2475 2515 10 0 33 175 2200 2405 7.28 125 1170 1300 1580 113 7 36 130 1380 1510 8.61 190 570 755 1675 170 10 37 275 960 1235 22.27 330 680 1005 975 971 10 37 275 960 1235 14.01 130 830 940 1285 218 17 40	5	2960	1470	1495	57.81	2690	1135	1555	24	1	31	2780
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1365	845	515	42.18	1375	795	580	25	÷2	-25	1485
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	2500	1015	1485	64.04	2225	795	1425	26	-2	-37	2345
1605 26 2 28 1060 470 1530 69.28 1070 775 $184c$ 2230 -27 -1 29 960 1205 2170 44.24 910 1265 2170 1200 4 0 30 150 835 985 15.23 125 890 1018 2520 8 0 31 10 2380 2390 0.42 5 1610 1615 2170 -308 -14 32 325 1475 1795 18.11 290 2185 2475 2515 10 0 33 175 2230 2405 7.28 125 1170 1300 1580 113 7 36 130 1380 1510 8.61 190 570 755 1675 170 10 37 275 960 1235 22.27 330 680 1005 975 97 10 38 415 635 1045 39.71 465 450 920 1360 108 8 39 180 1100 1285 14.01 130 830 960 1285 218 17 40 985 440 1425 69.12 975 570 1545 950 192 20 41 715 390 1100 65.00 740 645 1380 1870 12 1 42 <td>3</td> <td>1530</td> <td>590</td> <td>940</td> <td>63.41</td> <td>1435</td> <td>525</td> <td>910</td> <td>27</td> <td>-2</td> <td>-36</td> <td>1535</td>	3	1530	590	940	63.41	1435	525	910	27	-2	-36	1535
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1840	775	1070	69.28	1530	470	1060	28	2	26	1605
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- D	2170	1265	910	44.24	2170	1205	960	29	-1	-27	2230
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1015	890	125	15.23	985	835	150	30	ō	4	1200
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1615	1610	5	0.42	2390	2380	10	31	ŏ	8	2520
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- -	2475	2185	290	18.11	1795	1475	325	32	-14	-308	2170
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1300	1170	125	7.28	2405	2230	175	33	<u></u>	10	2515
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- -	755	570	190	8 61	1510	1380	130	36	7	113	1580
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1005	680	330	22.27	1235	960	275	37	10	170	1675
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	920	450	445	39.71	1045	635	415	38	10	97	995
12852181740985440142569.12975570154595019220417153901100 65.00 740 645 138018701214210257001725 59.42 107084019101310504437554601210 62.40 79561514101760-8-044915640156058.6595039513451445-211-1545615835145042.41580665125011703046730455119061.346755601235274520474710901745283538.45108015852670144584648690775146047.2670071514151445107748670910158042.4167556512402415-60-2519701215220045.0010159702000143082652780625140555.5279549012901475705531055445149570.55740154022751495-31-1548051835263530.5574015402275	5	960	830	130	14.01	1285	1100	180	39	ŝ	108	1360
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- 5	1545	570	975	69.12	1425	440	985	40	17	218	1285
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5	1380	645	740	65.00	1100	390	715	41	20	192	950
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	í.	1910	840	1070	59.42	1725	700	1025	42	1	12	1870
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Ś	1410	615	795	62.40	1210	460	755	43	4	50	1310
1445 -211 -15 45 615 835 1450 42.41 580 645 1250 1170 3 0 46 730 455 1190 61.34 675 560 1235 2745 204 7 47 1090 1745 2835 38.45 1080 1585 2670 1445 84 6 48 690 775 1460 47.26 700 715 1415 1445 107 7 48 670 910 1580 42.41 675 565 1240 2415 -60 -2 51 970 1215 2200 45.00 1015 970 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1495 70.57 1005 405 1440 2605 -31 -1 54 805 1835 2635 30.55 740	- 7	1345	395	950	58.45	1540	640	915	44	0	-8	1760
1170 3 0 46 730 455 1190 61.34 675 560 1235 2745 204 7 47 1090 1745 2835 38.45 1080 1585 2670 1445 84 6 48 690 775 1460 47.26 700 715 1415 1445 107 7 48 670 910 1580 42.41 675 565 1246 2415 -60 -2 51 970 1215 2200 45.00 1015 970 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1495 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	5	1250	665	580	42.41	1450	975	615	45	-15	-211	1445
2745 204 7 47 1090 1745 2835 38.45 1080 1585 2670 1445 84 6 48 690 775 1460 47.26 700 715 1415 1445 107 7 48 670 910 1580 42.41 675 565 1240 2415 -60 -2 51 970 1215 2200 45.00 1015 970 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1475 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	5	1275	540	475	A1 74	1190	455	730	46	10	 T	1170
1445 84 6 48 690 775 1460 47.26 700 715 1415 1445 107 7 48 670 910 1580 42.41 675 565 1240 2415 -60 -2 51 970 1215 2200 45.00 1015 970 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1475 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275		2670	1585	1090	38 45	2935	1745	1090	40	7	204	2745
1445 107 7 48 670 910 1580 42.41 675 565 1240 2415 -60 -2 51 990 1215 2200 45.00 1015 990 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1495 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	- 5	1415	715	700	47 74	1440	エノマン	2010	10	Ĺ	01	1/15
2415 -60 -2 51 970 1215 2200 45.00 1015 970 2000 1430 82 6 52 780 625 1405 55.52 795 490 1290 1475 70 5 53 1055 445 1495 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	- 5	1740	710	× 00	47.20 17 11	1590	77J 010	670 670	-+0 A0	7	107	1443
1430 82 6 52 780 625 1405 55.52 795 490 1290 1495 70 5 53 1055 445 1495 70.57 1005 405 1410 2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	Ś	2000	000	1015	45 00	2200	1715	000	970) 5 1		-40	2440
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	· •	1290	77V 400	705	40.VV 55 57	1405	121J 275	770	50		-ov an	1413
2605 -31 -1 54 805 1835 2635 30.55 740 1540 2275	/ `	1410	405	1005	70.57	1105	020	1055	02 57	5	- a∠ 70	1/05
- YOAA -OT -T 94 OAA TOAA YOAA AAAAA XAAA YAA TO4A YAA	, 5	2075	1540	740	70.3/	エサブゴ	1075	1000 1000	с.) #сл	ئى 1	*	1473
1055 _74 _7 55 105 510 1005 10 35 570 F75 1105	د خ	1105	1040	749	00.00 10 75	1005	T000	705 000	04 66		-31 _74	2003
	5	1076	000 970	1000	47.23	1016	710	470	50 64	-10	-204	1000
	-	1005	414	1070	50.00	000	710	1100	57	-10	40	2010
100 47 J J/ 400 400 720 J0.00 40J 613 1073 1074 1076 960 4690	Ś	1500	01J 050	480 705	50.00	720	400	400	37	3 0	47	1300
1170 143 13 50 735 540 1205 54 72 735 615 1555	-	1555	015	ノビジ ツマに	54 74	1705	67J 540	07V 775	00 50	7 1 र	147	11300
100 11 1 1 10 20 145 000 10.0 70 100 10 100 100 100 100 100 100 100	, ,	1000	400	700	30./0 30./0	127J 000	200	730	37 40	د <u>ب</u>	14-3	1040
	, 5	770	710	010	02.0J 7 11	700	000	020 +0	60 21	-	10 11	1000
975 47 1 1 1 2 3 4 3 3 3 3 3 3 3 3 4 3 5 3 4 5 5 5 5 5	ן ר	1450	1415	20 76	2.11 0.05	470	963	10	01	ਰ 17	55 707	470
	./ 	1000	1010	00 109	0.70 0.70	2040	2010 22.0	20	02	τ¢	44/	21/3
	<u>.</u>	47/0	4070	100	2.00 4.10	1000	1175	190	63	4	. JU8	1210
	, \	5000	730	ుర • జ	4.10	LLOE	11/3	20	64	1	1/	1010
	,	3700	1000	노니	0.00	0070	6660	40	00	Ŧ	00	Q740

	Ctot	Unit	Und	TRAC	81own	81ten	81all	81rat	71ow	71te	71al	
	3500	-258	-7	66	515	2320	2830	18 20	130	1865	2000	
	750	10	í	60	495	270	765	64.71	425	505	930	
	1090	-7	1	49	475	545	1015	46.80	390	725	1110	
-	1245	10	2	71	770	300	1140	40,00	770	780	1550	
	2830	10	0	77	1520	1170	2685	56 61	1550	1250	2795	
	875	15	2	77	590	240	835	70 66	590	405	1000	
	1185	75	र	74	835	215	1145	72.03	850	375	1230	
	1455	74	2	75	820	255	1075	76 28	755	355	1105	
	1150	<u>ज</u> न रर	2	76	885	280	1145	75 97	895	345	1240	
	1620		5	70	1105	470	1570	70 39	1070	595	1670	
	2445	-1	-0	79	1210	1180	2390	50.63	1155	1165	2320	
	2050	74		70	1475	540	2015	73 20	1400	710	2110	
	2000	-7	ō	00	1140	1720	2010	A0 21	1105	540	1665	
	2005	70	7	80 81	805	1720	2000	82 14	820	445	1280	
	930	र र	, д	82	755	190	950	79 47	770	410	1180	
	1620	66	4	20	880	755	1630	57 QQ	905	575	1480	
	1340	30	- -	84	875	460	1340	45 30	900	945	1740	
	2045	-7	_0	05	590	1440	2015	79 79	550	1445	2015	
	945	-0	-0	84	750	275	075	76 97	775	275	970	
	2185	116	5	87	1115	1215	775 7775	47 75	970	1540	2410	
	1215	-163	<u>-1</u> र	89	105	385	490	71 43	50	110	155	
	405	100 53	10	00	200	470	470	30 04	120	495	505	
	1495	74	5	07	420	1010	1430	20 37	375	070	1240	
	4175	1.6.1	Δ	Q1	425	3580	4200	14 99	505	3205	7705	
	7170	57	- -	67	740	2705	7145	71 07	740	2775	3100	
	1000			7 <u>~</u> 07	1145	2703	1070	21.70	1000	1070	2250	
	1010	-10	1	7.0	1170	430	1905	44 00	1015	755	1070	
	1105	-42		74	775	700	1115	64.82 45 80	1210	100	1940	
	1505	-42 54	~~4	70	1170	380	1410	00.7Z	1165	490	1400	
	1000 7106	-747	ు 	70	1470	1490	3140	57 10	1646	440	1000	
	1470		-0	7/	1055	1480	1/05	33.18	1040	670 500	2010	
	1000	10/	2	70	1000	400 1616	1480	77 /5	1040	200	15/5	
	2043	100	4	100	710	1919	2430	37.60	870	0/U 715	1000	
	1176	ుం లా	0	100	280	220	305	36.44	510	010	620	
	TTOO	110	3	101	020 705	320	1035	47./0	020	370	1042	
	4000	110	4	102	370	4270	4670	8.40	410	3870	4280	
	2000		-1	103	1000	730	2290	6/.67 70 /7	11/0	300	1733	
	1505	121	2	104	10/0	405	1555	10.63	1075	700	1450	
	1373	20	~ ~	103	705	470	1000	00.1/	1033	410	1430	
	400	70	-0	100	320	110	440	73.03	340 1106	210	1740	
	1310	- 37 10	د. •	107	100	230	1330	82.71	1120	210	1340	
	1110	17		108	746	1033	2110	30.1Z	1100	780	2000	
	1170	170		1107	780	200	1000	78.30	700	270	1000	
	7/6	130	14	110	720	285	1205	78.00	733	400	1400	
	/00	J2 10/		TTT	690	100	820	84.10	6/0	140	810	
	1050	196	12	112	12/0	360	1640	//./4	1380	640	2025	
	1050	-14	-1	11.5	515	545	1060	48.58	520	640	1165	
	2030	140	<u>/</u>	114	900	1070	1975	40.5/	960	1110	2075	
	1700		د =	110	673 770	385 (05	1080	64.33	615	285	900	
	7040 T040	/4	ت 10	110	730	605 775	1340	34.48	745	6/5	1420	
	1070	-00	-10	110	313	333	1005	48.46	320	410	130	
	12/0	-30	-3	118	460	840	1295	35.52	413	860	1270	
	2180	203	4	117	565	1620	2185	20.86	470	1/65	2235	
	2/00	111	4	122	610	2230	2835	21.52	545	2360	2905	
	1410	54	2	123	15	1440	1460	1.03	10	1450	1460	
	1500	8/	د 0	105	480	∠380 755	2840	10.40	390	2210	2600	
	1000	T	0	173	1223	200	T980	//.33	410	1710	1013	

Ctot	Unit	Und	TRAC	8iown	81ten	81all	81rat	71ow	71te	71al
1675	183	1 1	176	1110		1660	66 87	980	680	1660
2105		-1	127	1725	885	2210	59 95	1785	1005	2290
4500	-45	1	179	440	5975	6540	10.09	415	4480	5295
2140	_0		170	1010	1150	2150	10.07	075	1195	2175
2100	10	1	171	005	1100	2110	14 40	970	1175	2005
1005	17	- -	134	765	270	1075	77 44	755	2005	1040
1023	20		175	200	1940	2750	73.00	733	205	1000
20/0	20		17/	070	1000	2/30 5475	J∠.JJ 1 E1	600	703	4505
0050	~~		130	1100	1445	3833	70.0/	045	1700	4000
2900	×1 (0	1	137	1100	1660	2760	37.86	740	1700	2640
1030	67		108	/33	330	1070	68.67	740	300	1105
2370	28	1	139	1370	1020	2385	57.44	1330	1070	2405
770	20	3	140	650	120	770	84.42	645	135	785
3235	-4	-0	141	2525	720	3245	77.81	2470	795	3265
2055	6	0	142	1325	695	2025	65.43	1300	740	2040
0	4	0	14	0	0	0	ERROR	5	0	5
2310	19	1	10	600	820	1420	42.25	520	425	950
4120	-22	-1	7	275	3715	3985	6.90	295	2970	3265
4470	31	1	50	2780	1745	4530	61.37	2025	1510	3535
935	74	8	35	15	425	430	3.49	20	110	130
1835	143	8	69	1190	670	1860	63.98	1150	1075	2230
1625	-96	6	70	555	1030	1585	35.02	575	1240	1820
1670	-17	-1	1201	760	760	1520	50.00	425	960	1390
1340	11	1	130	930	435	1370	67.88	915	460	1375
610	2	0	18	330	280	610	54.10	335	375	700
1930	9	0	17	45	730	770	5.84	0	0	0
1085	-120	-11	13	480	235	710	67.61	Ō	0	0
2510	-425	-17	34	95	1435	1525	6.23	65	790	860
3200	50	2	133	595	2680	3275	18,17	560	2595	3155
2035	21	1	132	940	1050	1990	47.24	925	985	1910

,

.

,

71rate	BPU2	88own	88ten	88a11	88rate	71t81	71786	81786
56.52	1	140	82	222	63.06	8.34	6.64	-1.71
64.44	2	11	240	251	4.38	5.77	26.67	20.90
ERROR	3	ō	1	1	0.00	ERROR	ERROR	ERROR
9.14	4	528	2918	3446	15.32	-1.38	-1.86	-0.48
17.62	5	326	1788	2314	14.09	-6.38	-7.35	-0.97
ERROR	8	9	526	535	1.68	ERROR	ERROR	ERROR
44.44	11	177	250	427	41.45	-10.16	-15.87	-5.71
ERROR	12	663	724	1387	47.80	ERROR	ERROR	ERROR
100.00	15	417	326	743	56.12	-95.00	-73.33	21.67
35.63	16	295	244	539	54.73	15.84	2.34	-13.50
63.91	19	701	295	996	70.38	7.19	5.24	-1.96
31.49	21	1088	1571	2659	40.92	6.06	6.77	0.71
59.56	22	1078	510	1588	67.88	7.88	9.11	1.22
66.41	23	958	330	1288	74.38	6.54	6.84	0.30
50.51	24	1723	1217	2940	58.61	7.30	5.97	-1.33
37.73	25	714	814	1528	46.73	4.45	5.71	1.25
59.40	26	1577	915	2492	63.28	4.64	-2.04	-6.69
61.44	27	1024	598	1622	63.13	1.98	-1.50	-3.48
58.15	28	1245	526	1771	70.30	11.13	8.51	-2.61
41.94	29	1325	1114	2439	54.33	2.30	2.01	-0.29
12.32	30	228	1060	1288	17.70	2.91	0.18	-2.73
0.31	31	42	2538	2580	1.63	0.11	0.68	0.57
11.72	32	575	1598	2173	26.46	6.39	3.49	-2 .9 0
9.62	33	339	2386	2725	12.44	-2.34	-1.46	0.87
25.17	36	412	1451	1863	22.11	-16.56	-10.93	5.63
32.84	37	. 679	1325	2004	33.88	-10.57	-5.37	5,20
50.54	38	558	707	1265	44.11	-10.83	-11.85	-1.02
13.54	39	266	1368	1634	16.28	0.47	0.43	-0.04
63.11	40	1150	545	1695	67.85	6.02	11.60	5.59
53.62	41	809	470	1279	63.25	11.38	19.01	7.63
56.02	42	1188	930	2118	56.09	3.40	-2.28	-5.68
56.38	43	845	641	1486	56.86	6.01	0.87	-5.14
70.63	44	1049	962	2011	52.16	-11.98	-16.37	-4.39
46.40	45	688	680	1368	50.29	-3.99	-4.88	-0.89
54.66	46	772	510	1282	60.22	6.69	7.74	1.05
40.45	47	1363	1885	3248	41.96	-2.00	-1.29	0.71
49.47	48	817	896	1713	47.69	-2.21	-3.80	-1.59
54.44	49	748	951	1688	44.31	-12.03	-8.76	3.27
50.75	51	1155	1353	2508	46.05	-5.75	-10.38	-4.63
61.63	52	921	714	1635	56.33	-6.11	-6.03	0.08
71.28	53	1148	632	1780	54.49	-0.71	-4.05	-3.34
32.53	54	914	1849	2763	33.08	-1.98	-1.82	0.16
51.58	55	645	5/1	1216	53.04	-2.33	-6.09	-3.76
55.4/	56	1307	839	2146	60.90	5.41	-3.36	-8.//
44.29	5/	618	512	1130	34.69	5./1	5.49	-2.22
43.89	58	1041	/45	1/86	38.29	4.48	6.04	1.56
4/.2/	37	808	223	1411	50.81	7.47	12.71	3.42
37.24	60	412	//0	1182	ು 4.86	-6.07	~10.00	-3.41
7.46	61	4د ۵/٦	317	231	5.1/ 01 40	-3.36	~4.43	0.73
2.12	62	763	3017	448Z	21.47 0 EA	-1.1/	2.02	3.20
∠	63	007	1045	1000	8.3V	0.32	1.87	1.3/ -0.20
4.01	04 45	157	1240 7014	1424	12.37	-0.31	-0./*	0.40
ل شده ب	00	1 U Z	7014	1700	<u> </u>	0.04	0.00	V. 40

71rate	BPU2	88own	88ten	88a11	88rate	71t81	71786	81786
6,50	66	755	2705	3460	21.82	11.70	9.07	-2.63
45.70	67	593	223	816	72.67	19.01	20.97	1.96
35.14	68	648	917	1565	41.41	11.66	11.65	-0.01
49.68	71	9 09	488	1397	65.07	16.70	11.98	-4.72
55.46	72	1665	1318	2983	55.82	1.15	-2.10	-3.25
59.00	73	649	296	945	68.68	11.66	6.14	-5.52
69.11	74	957	517	1474	64.93	3.82	-0.75	-4.57
68.33	75	1004	690	1694	59.27	7.95	-7.84	-15.80
72.18	76	1007	289	1296	77.70	3.79	2.61	-1.18
64.07	77	1180	540	1720	68.60	6.31	4.14	-2.17
49,78	78	1460	1130	2590	56.37	0.84	0.52	-0.32
66.35	79	1537	628	2165	70.99	6.85	3.65	-3.20
66.37	80	1307	1848	3155	41.43	-26.16	-26.87	-0.72
64.06	81	840	275	1115	75.34	18,08	14.83	-3.25
65.25	82	766	251	1017	75.32	14.22	16.47	2.25
61.15	83	959	847	1806	53.10	-7.16	-8.68	-1.52
51.72	84	9 90	485	1475	67.12	13.57	13.57	0.00
27.30	85	696	1466	2162	32.19	1.49	2.78	1.29
75.77	86	807	217	1024	78.81	1.15	1.95	0.80
36.10	87	989	1441	2430	40.70	11.65	18.36	6.71
32.26	88	354	748	1102	32.12	-10.83	-11.27	~0.44
20.17	89	539	453	992	54.33	12.09	23.72	11.63
30.24	90	663	964	1627	40.75	-0.87	4.54	5.41
15.68	91	1313	3633	4946	26.55	-0.80	1.09	1.89
24.52	92	1003	2755	3758	26.69	-2,58	-3.10	-0.52
54.22	93	1393	897	2290	60.83	5.10	4.51	-0.60
61.68	94	1333	687	2020	65.99	3.14	1.31	-1.84
61.11	95	832	447	1279	65.05	4.81	-0.35	-5.16
72.19	96	1226	569	1795	68.30	-2.00	-2.79	-0.79
71.06	97	1812	1558	3370	53.77	-17.87	-20.82	-2.95
67.53	98	1156	729	1885	61.33	3.51	-2.81	-6.32
57.19	99	1017	1878	2895	35.13	-19.53	-23.16	-3.63
50.00	100	329	307	636	51.73	6.44	3.15	-3.28
47.95	101	657	634	1291	50.89	1.82	0.51	-1.30
9.70	102	503	4415	4918	10.23	-1.24	-0.62	0.61
67.72	103	1786	912	2698	66.20	-0.04	0.16	0.19
68.33	104	1668	732	2400	69.50	2.30	3.40	1.10
71.38	105	1181	593	1774	66.57	-3.21	-5.24	-2.02
78.41	106	352	147	499	70.54	-5.38	-8.41	-3.03
83.96	107	1118	330	1448	77.21	-1.25	-1.89	~0.65
53.53	108	1146	1180	2326	49.27	-3.41	-4.23	-0.82
72.46	109	832	387	1219	68.25	4.04	0.06	-3.98
66.55	110	918	453	1371	66.96	9.80	7.79	-2.01
82.82	111	721	141	862	83.64	1.32	4.76	3.44
68.15	112	1419	597	2016	70.39	9.60	6.40	-3,20
44.64	113	593	546	1139	52.06	3.95	2.98	-0.97
46.27	114	1076	1361	2437	44.15	-0.70	0.29	0,98
68.33	115	798	910	1708	46.72	-3.98	-24.33	-20.35
52.46	116	828	739	1567	52.84	2.01	-2.11	-4.12
43.84	117	389	270	659	59.03	4.63	8.07	3.45
32.68	118	495	796	1291	38.34	2.84	7.48	4.64
21.03	119	845	1788	2633	32.09	4.83	5.97	1.14
18.76	122	707	2303	3010	23.49	2.76	4.88	2.12
0.68	123	30	1468	1498	2.00	0.34	1.09	0.75
15.00	124	619	2556	3175	19.50	1.90	5.17	3.27
25.39	125	1274	355	1629	78.21	52.14	54.68	2.53

7irate	BPU2	88own	88ten	88a11	88rate	71t81	71186	81786
59.04	126	1195	713	1908	62.63	7.83	8.43	0.60
56.11	127	1408	840	2248	62.63	3.84	4.98	1.14
11.61	128	871	5890	6761	12.88	-1.52	~1.05	0.47
44.83	129	1014	1254	2268	44.71	2.15	1.24	-0.91
43.39	131	1238	1190	2428	50,99	3.29	3.71	0.42
72.60	134	789	255	1044	75.57	1.06	1.06	0.00
46.39	135	1001	1981	2982	33.57	-13.84	-14.21	-0.37
1.11	136	163	5590	5753	2,83	0.40	0.40	-0.00
35.73	137	1181	1979	3160	37.37	4.13	3.26	-0.87
66.97	138	796	350	1145	69.46	1.72	3.91	2.18
55.30	139	1476	1047	2523	58,50	2.14	2.72	0.57
82.17	140	679	119	798	85.09	2.25	2.90	0.65
75.65	141	2604	738	3342	77.92	2.16	2.09	-0.07
63.73	142	1412	716	2128	66.35	1.71	1.24	-0.47
100.00	406	11	0	11	100.00	ERROR	-100.00	ERROR
54.74	407	948	1821	2769	34.24	-12,48	-28.33	-15.85
9.04	408	435	3836	4271	10.18	-2.13	-1.75	0.38
57.28	409	2956	2149	5105	57.90	4.08	5.80	1.72
15.38	4112	180	1162	1342	13.41	-11.90	-14.32	-2.42
51.57	415	1376	806	2182	63.06	12.41	11.92	-0.49
31.59	416	656	983	1639	40.02	3.42	2.56	-0.86
30.58	417	1120	711	1831	61.17	19.42	23.32	3.89
66.55	4189	931	454	1405	66.26	1.34	1.74	0.40
47.86	4001	402	306	708	56.78	6.24	7.06	0.82
ERROR	4023	403	1814	2217	18.18	ERROR	ERROR	1.41
ERROR	4045	881	483	1364	64.59	ERROR	ERROR	-14.61
7.56	4134	676	1803	2479	27.27	-1.33	3.80	5.13
17.75	4203	656	2689	3345	19.61	0.42	1.16	0.74
48.43	4212	978	1103	2081	47.00	-1.19	-1.99	-0.80

$\begin{array}{c} 88 \\ -99 \\ -4.523 \\ -97 \\ -2.67 \\ 2.67 \\ -1.523 \\ -1.554 \\ $	$\begin{array}{c} 86188\\ -1.58\\ -2.4\\ -3.80\\ -4.58\\ -2.22\\ -0.04\\ -3.22\\ -2.59\\ -2.$	86T88 1.22 1.46 2.92 0.26 5.59 1.92 1.58 1.26 2.76 1.87 0.78 1.22 2.45 ***** 8.90 3.30 -3.48 12.82 3.61 5.82 4.66 11.22 -0.28 4.66 11.22 -0.39 13.94 2.10 1.33
--	---	---

ABBREVIATIONS FOR APPENDIX 1

DEFINITIONS FOR THE PROPERTY FILE TAX RECORDS

SDO	= SINGLE FAMILY DETATCHED OWNED
SDT	= SINGLE FAMILY DETATCHED TENANT
SDA	= SINGLE FAMILY DETATCHED TOTAL
SAO	= SINGLE FAMILY ATTACHED OWNED
SAT	= SINGLE FAMILY ATTACHED TENANT
SAA	= SINGLE FAMILY ATTACHED TOTAL
RWO	= ROW CONDOMINIUM OWNED
RWC	= ROW CONDOMINIUM TENANT
RWA	= ROW CONDOMINIUM TOTAL
ACO	= APARTMENT CONDOMINIUM OWNED
ACT	= APARTMENT CONDOMINIUM TENANT
ACA	= APARTMENT CONDOMINIUM TOTAL
PLX	= DUPLEX OWNED
PLT	= DUPLEX TENANT
PLXA	= DUPLEX TOTAL
APT	= APARTMENT OWNED
APTT	= APARTMENT TENANT
ΑΡΤΑ	= APARTMENT TOTAL
RH	= ROW HOUSING OWNED
RHT	= ROW HOUSING TENANT
RHA	= ROW HOUSING TOTAL
IN	= INSTITUTIONAL OWN

- INT = INSTITUTIONAL TENANT
- INTA = INSTITUTIONAL TOTAL
- OTH = OTHER OWNED
- OTHT = OTHER TENANT
- OTHA = OTHER TOTAL
- TTLO = TOTAL NUMBER OF OWNERS
- = TOTAL NUMBER OF TENANTS $\mathbf{T}\mathbf{T}\mathbf{L}\mathbf{T}$
- BPU = BASIC PLANNING UNIT
- TRAC = CENSUS TRACT NUMBER
- ARATE = OWNERSHIP RATE IN EACH BPU FOR 1986
- CRATE = OWNERSHIP RATE IN EACH TRACT FOR 1986
- RATEDI = DIFFERENCE BETWEEN THE TWO RATES

DEFINITIONS FOR THE CENSUS

COWN = TOTAL NUMBER OF OWNERS IN 1986 FOR EACH TRACT

CTEN = TOTAL NUMBER OF TENANTS IN 1986 FOR EACH TRACT

CTOT = OVER ALL TOTAL FOR EACH TRACT IN 1986

THESE LAST THREE DEFINITIONS APPLY FOR THE 81, 71, AND 88 DATA ALSO.

71T81 = OWNERSHIP RATES FROM 1971 TO 1981.

THIS SAME DEFINITION APPLIES FOR 71T86, 81T86, AND 86T88.



ETOBICOKE

APPENDIX 2





East York













REFERENCES

- Burgess, Ernest W., (1927) "The Determination of Gradient in the Growth of the City" <u>Publications of the American</u> Sociological <u>Society</u> XXI: 178-83.
- Choko, Marc and Richard Harris (1990) "The Local Culture of Property. A Comparative History of Housing Tenure in Montreal and Toronto" <u>Annals of the Association of</u> American <u>Geographers</u> (Forthcoming).
- City of Toronto Planning and Development Department (1986) "Trends in Housing Occupancy" <u>Research Bulletin No.26</u> Toronto.
- City of Toronto Planning and Development Department (1981) Toronto Condominiums: Past, Present and Future. Research Bulletin No.19 Toronto.
- Hamnett, Chris (1984) "Gentrifrication and Residential Location Theory. A Review and Assessment" <u>Geography and the Urban environment. Progress in</u> <u>Research and Applications</u> eds. David Herbert and Ronald J. Johnston. Chichester: Wiley.
- Harris, Richard. (1986) "Boom and Bust. The Impact of House Price Inflation on Homeownership Patterns in Montreal, Toronto, and Vancouver" <u>The Canadian</u> <u>Geographer</u> 30,4:302-15.
- Harris, Richard and Chris Hamnett (1987) "The Myth of the Promised Land. The Social Diffusion of Homeownership in Britain and North America" <u>Annals of the Association of</u> <u>American Geographers</u> 77,2:173-90.
- Ley, David (1985) Gentrifrication in Canadian Cities. Patterns, Analysis, Impacts and Policy. Department of Geography, University of British Columbia.
- Municipality of Metro Toronto. <u>1986 Property File Tax Assessment</u> <u>Data.</u> <u>Housing Inventory and Density: Characteristics by</u> <u>Eight Structure Types.</u> Toronto, 1987.
- Municipality of Metro Toronto. <u>1988 Property File Tax Assessment</u> <u>Data. Housing Inventory and Density: Characteristics by</u> <u>Eight Structure Types.</u> Toronto, 1989.
- Rose, Damaris (1984) "Rethinking Gentrifrication. Beyond the Uneven Development of Marxist Theory" <u>Environment and</u> <u>Planning. D. Society and Space</u> 2,1 (47-74).
- Smith, Neil. (1979) Toward a Theory of Gentrification. Journal of American Planning Association. 45, 538-547.
- Statistics Canada. <u>1971 census of Canada.</u> Vol. 1 Profile series A. <u>Census Tracts: Population and Housing Characteristics:</u> <u>Toronto.</u> (Cat. no. 95-721) Ottawa 1973.
- Statistics Canada. <u>1971 Census of Canada.</u> Vol. 3 Profile series B. <u>Census Tracts: Population and Housing Characteristics:</u> <u>Toronto.</u> (Cat. no. 95-751) Ottawa 1974.
- Statistics Canada. <u>1981 Census of Canada.</u> Vol. 3 Profile series B. <u>Census Tracts: Housing and Demographic Characteristics:</u> <u>Toronto.</u> (Cat. no. 95-977) Ottawa, 1983.
- Statistics Canada. <u>1986 Census of Canada</u>. Profile series Part 1. <u>Census Tracts: Selected Characteristics for Census</u> <u>Tracts. Toronto.</u> (Cat. no. 95-163) Ottawa, 1988.
- Statistics Canada. <u>1986 Census of Canada</u>. Profile series Part 2. <u>Census Tracts: Selected Characteristics for Census Tracts.</u> <u>Toronto.</u> (Cat. no. 95-164) Ottawa, 1988.