

**REGIONAL INCOME DISPARITIES**

**IN**

**CANADA**

**BY**

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## ABSTRACT

An important problem existing in Canada today is that of unequal regional economic development. It is a basic problem of some regions having more and other regions having less.

In a country where economic growth is quite often viewed as an accumulation of regional economies, it is important to identify the inequalities that exist between and within these regions. Of the numerous forms of economic disparities, income is generally considered the most prevalent.

The majority of research performed on this topic of regional income disparities tends to deal with either regional productivity levels or regional income distribution and redistribution.

This study however, is concerned with disposable income levels that exist throughout and within Canada's regions, in an attempt to determine that the quality of life is not equitable across these regional borders. The main observations of the study were that, definite disparities exist not only between Canada's regions but, within them as well. Also, that metropolitan areas of the country experience a better quality of life, based on calculated welfare statistics, than do non-metropolitan areas. Finally, it was evident that Canada's economic disparities in most recent years have remained relatively constant.

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## CHAPTER ONE: INTRODUCTION

Canada is the second largest country in the world and the largest in the Western Hemisphere. Ranging from terrain as diverse as the great Rocky Mountains in the West, to the long rolling plains and prairies in the Mid-West, to the fertile regions of the Great Lakes, the rocky waterways of the East and on to the expanded wilderness of the North, Canada's territory is an amalgamation of very different physical landforms. As well as being physically distinctive, Canada is also spatially separated. The mass of land on which the country is situated consumes approximately ten million square kilometers with a distance stretching some 5514 kilometers wide; from the Yukon-Alaska border to Newfoundland's Atlantic shore. Hence, it is for these reasons -- both physically and spatially -- that the country has come to be identified as a distinctively regional nation.

Therefore, as a direct result of Canada's distinctly regional nature, one of the major economic problems it has had to endure is that of unequal regional development. The existence of such disparity within a country is quite often measured in terms of economic production as well as economic

welfare. Since income plays a fundamental role in the social and economic functions of every region within a country, it seems reasonable to incorporate income levels into the study of regional economic disparities in Canada.

An examination of the inequalities of income at the regional scale will provide a general understanding of how income affects a region's welfare. However, to receive better insight into the true disparities that exist between the regions, per capita disposable income is a more appropriate economic statistic to use. That is, per capita disposable income is a measure of the available moneys for the consumption of goods and services or to place in savings, that each person in each region within Canada possesses. Hence, by studying the disposable income levels of the populace of each region in Canada, along with the changing cost of goods and services occurring in each of these regions -- the spatial price index -- over the course of a 17 year period from 1967 to 1983, a better understanding of the growth of disparities in economic welfare throughout the regions of Canada will be determined.

Therefore, the purpose of this paper is to discover the spatiotemporal differences in income levels throughout Canada in order to determine the historically unequal growth that has occurred in economic welfare across the country.



## 1.1 THESIS OUTLINE

This study encompasses a total of four chapters and three appendixes. The first chapter offers a brief introduction to this paper on regional income disparities. It provides the relevant background information for the discussion including Canada's distinctly geographical regional nature and its subsequent regional economic growth and welfare -- in terms of income disparities.

The second chapter consists of a general review of relevant literature that has already been presented on the subject of regional income disparities. Although the majority of studies on this topic pertain to income distribution and transfer payments throughout the regions of a country as opposed to their existing income levels, this chapter focusses on papers that previously discussed the inequalities in income between regions and within regions -- with preferable emphasis on studies concerned with weighted income statistics.

Chapter three provides an outline to the strategy of this paper. The objectives of my research, some definitions of the relevant statistical terms used in the paper as well as the equations that are used to determine the disparity levels, are incorporated into this chapter.

The fourth chapter deals with the analytical portion of



the paper. Here, the data set is manipulated to discover the subsequent results to the previously mentioned hypotheses. Included in this section is a look at the historical trends of income inequalities as well, an analysis of the variations these trends have taken over a period of time. Also, this chapter will provide a summary of the findings from the data manipulation. The fact that over the length of this study the disparities in income levels across Canada's regions has remained relatively constant, will be realized.

## CHAPTER TWO: REVIEW OF RELEVANT LITERATURE

Over the past thirty years a sizable amount of literature has been written on income inequalities in North America. These works have concentrated mainly on regional income distribution and differential trends.

Research dedicated to income distribution tends to dwell on the unequal distribution of income that occurs around the world--from Asia to Europe and North America (Atkinson, 1975; Kusnic and DaVanzo, 1982; Schultz, 1982). As well, some studies emphasize the use of tools like the Lorenz curve and Gini index to form a better understanding of the existing inequalities of distribution (kakwani, 1980). Similar tools such as the neo-classical and keynesian theories are summarized to further explain the inequality of income distribution (Pen, 1971).

However, as concern for economic development steadily grows, a closer look at the trends of regional differences in income levels has taken place. For, not all regions within a country are equally well off and the disparities of these regions can often take several forms (Armstrong, 1982). Hence, trends in regional differences of income levels have

been studies for several countries, most notably the United States (Hanna, 1957; Easterlin, 1960). More importantly, these studies make use of per capita income differences in order to gain better insight into the actual levels of disparities.

Therefore, it is understandable that regional income inequalities play an important role in the economic development of all countries of which Canada is no exception. Because of her geographic design distinct regions are made evident and Canadians are aware of the fact that they live in a regional country (Green, 1974; Firestone, 1974; Phillips, 1982). A region being defined by an essentially homogeneous area whose boundaries are developed from geographic, economic or political and social criteria (Firestone, 1974; Lithwick, 1978; McCann, 1987). Furthermore, it is apparent that the most obvious measure of inequality throughout these regions is disparity in income (Phillips, 1982).

Of initial importance to any study is McInnis (1966) whose doctoral dissertation "Regional Income differentials in Canada, 1910-11 to 1960-62," offers a strong base from which my paper may follow. McInnis studies the long-term historical trend in the differences in income in Canada's five regions: Quebec, Ontario, British Columbia, the Prairie provinces and the Atlantic or Maritime provinces. He argues that a study of regional income variability, in per capita income, of Canada's five regions is of primary interest to the economic growth

process of a country that is often viewed as a collection of regional economics.

In his study McInnis concludes that the variability in per capita income among the regions has remained relatively constant. There has been no significant convergence to or divergence away from the national average (McInnis, 1966). However, this conclusion is taken from unweighted comparisons of regional income levels and their variance from the national average. If a better indication of regional disparities is desired, the per capita income must be adjusted. That is, not all regions are of the same size and, income levels will affect variably sized regions differently. Therefore, my study, like that of Easterlin (1960) in the United States, will take population size into consideration and determine differential trends from newly weighted regional income levels. (Easterlin, 1960).

According to Stager (1985), regional income disparities can be determined by various methods and the use of income levels as comparisons to the national average (as McInnis and many others have done) has been repeatedly worked (Stager, 1985). Since per capita income of a region is influenced greatly by the size of the population, it would seem more than feasible to present a study on the inequalities of changing regional incomes and population (Easterlin, 1960; Stager, 1985).

However, for the purpose of my research, a historical



look at regional income trends is essential as it provides a base to which will be added an analytical study of more recent and weighted regional income levels in order to identify differential trends.

A major problem when searching for regional studies and data is that most research is carried out for migratory and mobility patterns. Very few studies on regional income differentials exist that consider price levels into their findings of disparities (McInnis, 1966). This is especially true for Canadian research. However, Statistics Canada releases studies that determine the economic well-being of families as a result of family income and the price index. They report that if prices rise, the purchasing power of the dollar shall decrease as well as the well-being of the family unit (Minister of Supply and Services, 1984). This can be carried over to a regional perspective in that, the higher the price index of a province rises, the more inferior the purchasing power of the region's per capita income will be. Hence, the well-being of the region will also suffer--as compared from one year to the next or from region to region. It is this type of analysis that I will pursue once the historical differential income trends are examined in my study.

Therefore, to look for some guidance, Hurwitz and Stalling (1957), have been of some help. Their paper attempts to examine state per capita income levels over time that have



been adjusted by state price indexes (Hurwitz and Stalling, 1957). Their study is sufficient for background research and ideas however, as previously stated, it is an American not Canadian study. As well, it compares the price indexes to incomes of the regions (states) but it doesn't actually combine the two as one value and compare it between regions and over time as I shall do. However, Hurwitz and Stalling (1957) dedicate a portion of their paper to rural and urban differentials in income and price. This type of analysis plays an important role in examining regional disparities as inequalities exist both between regions and within them as well.

According to Brewis (1970), disparities in income exist across regional boundaries and between provinces but, greater disparities are evident when examining individual regions. That is, between urban and rural areas within the province (Brewis, 1970). Therefore, this assumption is incorporated into my study to further the awareness of regional income inequalities throughout Canada.

An important economic problem existing in Canada today is that not all regions are equally well off. Disparities between the provinces and within the provinces are increasingly evident (Armstrong, 1982). These regional income inequalities are more noticeable throughout Canada than in most countries (Marr and Paterson, 1980). Therefore, with the help of the previously mentioned literature in this paper, I

will attempt to examine the regional income disparities that were in existence throughout Canada between 1967 and 1983.

### CHAPTER THREE: RESEARCH STRATEGY

#### 3.1 INTRODUCTION

Most literature on regional income disparities tends to discuss the unequal distribution of income to each of the regions throughout Canada. They focus on subsidies, grants and transfer payments that the Federal Government gives to each province. Such studies are carried out in order to determine the uneven economic development that occurs in and within each province. By studying income levels over a period of time, the economic growth -- or in some cases decline -- of a region, can be made evident.

In this study however, an analysis of the total average real disposable income per capita that each region spends (or has) will be conducted. That is, it will look at the regional disparities in disposable income levels in order to identify the uneven growth in economic welfare that is experienced by each and within each province. Therefore, the purpose of this

paper is to examine the spatiotemporal disparities in real disposable income per capita among Canada's regions.

### 3.2 OBJECTIVES

In order to fulfill this spatiotemporal analytical requirement, a number of objectives are present -- bearing in mind that the purpose of this study is to examine historical trends in income levels and determine subsequent levels of growth in the economic welfare of each region over a 17 year span.

The first of these goals is to determine whether or not disparities in income do exist in Canada and if so, do these levels show any real significant trends. Inequalities have been evident among Canada's provinces for a number of years with some dating as far back as the mid 1920's (McInnis, 1966). Hence, it is important to Canada's economic development to see if such trends in income differentials still exist today.

The second objective is to prove that even greater disparities are evident between the metropolitan and non-metropolitan areas of each region. Most studies examine the inequalities that are apparent across regional boundaries and between provincial lines, however more importantly they neglect the fact that disparities also exist within these regions -- between metropolitan and non-metropolitan areas.



The third goal of this paper is to determine which regions are the strongest and weakest, in terms of their economic inequality, over time. That is, which regions possess the highest and lowest disparity levels -- true average real disposable income per capita -- throughout Canada, and how have they changed over the 17 year span of the study.

The fourth and final objective of this study is to discover whether any real convergence or divergence of disparities between the six regions has occurred from the beginning and up to the end of the entire data set. That is, have the existing disparities in economic welfare between the regions continued to increase, decrease or have they remained constant throughout the 17 years of the study.

### 3.3 USABLE DATA SET

In attempting to attain these objectives, the research has been mainly an analysis as opposed to a collection or testing of data. The data set, taken from summarized tables of Canadian census statistics, was graciously given to me by Professor Y.Y. Papageorgiou. The tables, consisting of metropolitan and non-metropolitan statistics of each province in Canada -- from 1967 to 1983 -- have been manipulated in order to obtain a more representative value of income disparities.



The data set incorporates statistics from all ten Canadian provinces yet, fails to look at the two isolated territories of the Yukon and the North West. This collection of statistics focusses on 25 metropolitan centers within the country, as well as accumulated figures representing the entire non-metropolitan areas of the 10 provinces. Hence, these statistics list the population, disposable income per capita and the spatial price index for all 25 metropolitan Canadian cities and the 10 non-metropolitan areas that exist within the country's 10 provinces.

#### 3.4 DEFINITION OF STATISTICAL TERMS

It is important at this point to offer some definitions of the terms that were discussed under data set and who's numerical representatives are visible in figure 1.1. Hence, the following are given to hopefully clear up any misconceptions about the data being used to measure the disparities in income levels across Canada, in this study:

(i) Disposable Income per capita: is quite often referred to in this text as simply disposable income. This statistic represents the total personal income that is available for the consumption of goods and services or to place in savings, once personal taxes have been deducted. (In fig.1.1, the disposable income per capita is represented by DY/C).

(ii) Spatial Price Index: is a technical device used for comparing changes in the retail price of goods and services over different time periods or in different geographical locations. In the context of this study the spatial price index is measured in constant 1981 dollars with the city of Montreal, Quebec equalling the base price index in that year of, \$100. (In fig.1.1, the column representing the spatial price index is listed as XSPI).

(iii) Real Disposable Income: is the new value of disposable income that is received when disposable income is adjusted to allow for variations in the cost of living. That is, in order to compare flows of income levels at different points in time, in different locations within a country, the values are adjusted using the spatial price index. In mathematical terms,

$$\frac{\text{DISPOSABLE INCOME}}{\text{SPATIAL PRICE INDEX}} * 100 = \text{REAL DISPOSABLE INCOME}$$

(In fig.1.1, the real disposable income is designated by the heading, RDY/C).

Figure 1.1 represents the previously defined statistics as they were listed, for the province of Quebec. It shows the existing data for the 5 metropolitan cities and one non-metropolitan area found in that region. Similar statistics to those given for Quebec are available for the remaining 9

provinces and over a 17 year period.

FIGURE 1.1

| PLACE       | PROVINCE | YEAR | POP'N    | DY/C | XSPI  | RDY/C |
|-------------|----------|------|----------|------|-------|-------|
| Chicoutimi  | Quebec   | 1967 | 125.693  | 2100 | 37.30 | 5630  |
| Montreal    | "        | "    | 2557.920 | 2260 | 38.52 | 5868  |
| Hull        | "        | "    | 127.297  | 1990 | 36.27 | 5487  |
| Quebec City | "        | "    | 455.889  | 1990 | 37.69 | 5280  |
| TRivieres   | "        | "    | 102.679  | 1925 | 36.53 | 5269  |
| Non-metro   | "        | "    | 2492.522 | 1405 | 38.52 | 3647  |

### 3.5 METHODOLOGY

#### 3.5.1 THE MEASURE OF DISPARITY

In order to incorporate all these statistical values into one set of data that can be used to measure disparities in economic growth and well-being, some manipulations or calculations had to be carried out.

Disposable income per capita as a lone measure, does not afford a great determinant of economic inequality. Hence, something must be done to make this statistic more identifiable. Therefore, the disposable income levels have been adjusted to provide a better indicator of the unequal economic growth and welfare that each region within Canada has experienced. That is, not all regions across this vast country are the same size nor is every Canadian able to pay the same price for goods and services. Nothing remains

constant over time and through space therefore, the disposable income levels will variably affect the different sized regions as well as the purchasing power of the population within these areas. Hence, two weights have been applied to the data.

The first of these weights -- as has been previously discussed -- was to divide the spatial price index into the disposable income and then multiplying this figure by 100 in order to get a new statistic called real disposable income per capita. This figure represents the true purchasing power of consumer goods that each person's disposable income is worth.

The second weight was to take the population of each metropolitan and non-metropolitan area and multiply it by its respective real disposable income and then divide that figure by the total population of the area. What was eventually calculated was the true average real disposable income per capita of each region. This figure is representative of the true value that a persons' disposable income is at, once it has been adjusted for the cost of living within the region as well as for the total population that lives there. Such values of disposable income have been calculated for both metropolitan and non-metropolitan areas within each region. Therefore, using the province of Quebec as an example of how the metropolitan true average real disposable income values were calculated, it is better understood how in mathematical terms the formulae looks like this;



$$\begin{array}{cccccccccccc}
 \overset{m}{N} & * & \overset{m}{RY} & + & \overset{m}{N} & * & \overset{m}{RY} & + & \overset{m}{N} & * & \overset{m}{RY} & + & \overset{m}{N} & * & \overset{m}{RY} & + & \overset{m}{N} & * & \overset{m}{RY} \\
 \underset{c}{N} & & \underset{c}{RY} & & \underset{mo}{N} & & \underset{mo}{RY} & & \underset{h}{N} & & \underset{h}{RY} & & \underset{q}{N} & & \underset{q}{RY} & & \underset{t}{N} & & \underset{t}{RY}
 \end{array}$$


---


$$\begin{array}{cccccc}
 \overset{m}{N} & + & \overset{m}{N} & + & \overset{m}{N} & + & \overset{m}{N} & + & \overset{m}{N} \\
 \underset{c}{N} & & \underset{mo}{N} & & \underset{h}{N} & & \underset{q}{N} & & \underset{t}{N}
 \end{array}$$

=TARDY/C

Where, N = population                      m = metropolitan area

RY = real disposable income

TARDY/C = true average real disposable income/capita

And, c = Chicoutimi

mo = Montreal

h = Hull

q = Quebec City

t = Trois Rivières

It is this final statistic -- true average real disposable income per capita -- that can be used to measure a region's well being. Therefore, it is also this statistic that will be used as the measure of disparity in the comparison between and within the provinces, for this study.

### 3.5.2 MEASURE OF VARIANCE

Using a statistic like true average real disposable income per capita to measure levels of disparity, is sufficient in attaining the first three goals of this study, as outlined earlier in the paper. However, in order to meet



the requirements of the last objective, another calculation is in order. This new measure -- variance -- will provide the necessary data to determine whether any convergence, divergence or constancy has occurred in the disposable income levels over time. That is, by taking a measure of variance it can be identified whether or not the degree of uneven economic welfare between the regions, is increasing, decreasing or remaining relatively constant. In order to produce this measure of variance, the following calculation was done;

$$\frac{\sum_{i=1}^{35} N_i (Y_i - Y)^2}{\sum_{i=1}^{35} N_i - 1} = \text{VARIANCE}$$

Where, 35 = the number of metropolitan and non-metropolitan areas considered in the study.

i = the year (i.e. i=1 represents 1967).

N = the population of all 35 areas or all 6 regions.

Y = real disposable income.

Y = average real disposable income weighted by the population.

Therefore, it is through this measure of variance that we are able to see how the economic inequalities in income have remained relatively constant throughout Canada's regions over the 17 year span of the data set.

### 3.5.2 REGIONAL SEPARATION

As a direct result of Canada's distinctively regional geographic development, her economic growth has also been shaped regionally. In most instances it would be logical then to do a study on Canadian disparities through a provincial perspective incorporating all ten provinces and the two territories. However, in order to simplify matters I have chosen to reduce the study to six regions.

Where obvious similarities exist in terms of geographic location and physical development, some provinces have been united to form a region. The six regions that will be considered in this analysis are: 1. the Maritimes (including Newfoundland, Nova Scotia, Prince Edward Island and New Brunswick); 2. Quebec; 3. Ontario; 4. the Mid-West (including Manitoba and Saskatchewan); 5. Alberta; and 6. British Columbia.

Therefore, it is through an analysis of these six regions that the inequality in economic welfare across Canada will be determined. However, it is imperative at this point to note that the economic variables used in this study -- true average real disposable income per capita -- do not adequately explain all the disparities that exist between and within Canada's provinces. This data does not take into consideration income distribution and redistribution within

the regions nor does it account for differences in the social characteristics of the inhabitants of any particular region, even though both play an intricate role in the quality of life experienced by all Canadian's. However, this study does allow for great insight into the severity of the income disparities that do exist throughout Canada.

#### CHAPTER FOUR: ANALYSIS AND DISCUSSION

The growth of the Canadian economy, like that of most developed Nations, has been a topic of interest and undoubtedly much concern, in a number of intellectual, political, professional and social discussions. The majority of this curiosity lies with the uneven development that has taken place over the years as well as with the regional nature that has accompanied this evolutionary, economic process.

These problems of regional growth and development have existed in Canada for quite some time. And so, the economic maturation of Canada has been looked at from several different perspectives. Ranging from differences in wages and productivity levels, to labour force participation rates, unemployment status, and to inequalities in the general welfare of a region's existence, the disparities that do exist within Canada's National borders, and further still within her regional borders, cannot be overlooked.

Therefore, it is apparent that the country's economic prosperity -- if such a strong word may be used -- is a compilation of the regional economic growth that has occurred



among the Canadian provinces over the years. Hence, it is imperative that some recognition of these developmental dilemmas be expressed. Through a discussion of the uneven growth in economic welfare that occurs in Canada's distinct regions, this paper is an attempt to make these dilemmas more visible.

As was previously mentioned in chapter three, weighted disposable income levels were used with respect to population and price indexes in order to derive at regional levels of well-being that could be analyzed to reveal existing economic disparities. The income levels have been calculated and measures of variance determined. Hence, it is the intent of this chapter to present this newly acquired data in an interpretive and illustrative manner that is in synthesis with the four objectives of this paper, outlined in chapter three.

#### 4.1 OBJECTIVE ONE:

The initial goal of this study is to determine whether disparities in per capita disposable income exist in Canada, and if so, do these levels reveal significant trends. Keeping in mind however, that reference to disparities in disposable income really means the weighted statistic that was calculated using populations and price indexes to get true average real disposable income per capita -- a measure of disposable income that reveals each region's well-being with respect to their

cost of living and population size. In order to illustrate the extent of the existing inequalities in welfare across the regions, table 1 will be used to explain the disparities.

**TABLE 1**

TRUE AVERAGE REAL DISPOSABLE INCOME PER CAPITA  
ALL OF CANADA  
1967 - 1983

| REGION    | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------|------|------|------|------|------|------|------|
| MARITIMES | 4522 | 4425 | 4631 | 4816 | 5249 | 5602 | 5733 |
| QUEBEC    | 4696 | 5001 | 5166 | 5319 | 5501 | 5965 | 6155 |
| ONTARIO   | 5512 | 5723 | 5906 | 6003 | 6511 | 6852 | 6963 |
| MID-WEST  | 5556 | 5670 | 5730 | 5587 | 6034 | 6459 | 6695 |
| ALBERTA   | 5255 | 5277 | 5455 | 5451 | 5852 | 6198 | 6370 |
| B.C.      | 4998 | 5019 | 5184 | 5217 | 5783 | 6006 | 6101 |
| CANADA    | 5090 | 5186 | 5345 | 5399 | 5822 | 6180 | 6336 |
|           | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
| MARITIMES | 5930 | 6150 | 6886 | 7024 | 7206 | 7120 | 7011 |
| QUEBEC    | 6422 | 6697 | 7438 | 7550 | 8016 | 7912 | 8034 |
| ONTARIO   | 7305 | 7577 | 8232 | 8427 | 8641 | 8692 | 8698 |
| MID-WEST  | 7562 | 7694 | 8728 | 8192 | 8706 | 8627 | 8866 |
| ALBERTA   | 6915 | 7183 | 8051 | 7753 | 8080 | 8338 | 8469 |
| B.C.      | 6341 | 6658 | 7145 | 7433 | 7816 | 8000 | 8020 |
| CANADA    | 6746 | 6993 | 7747 | 7730 | 8077 | 8115 | 8183 |
|           | 1981 | 1982 | 1983 |      |      |      |      |
| MARITIMES | 7018 | 6952 | 7140 |      |      |      |      |
| QUEBEC    | 7893 | 7740 | 8141 |      |      |      |      |
| ONTARIO   | 8510 | 8474 | 8578 |      |      |      |      |
| MID-WEST  | 8710 | 8818 | 9525 |      |      |      |      |
| ALBERTA   | 8638 | 8386 | 9285 |      |      |      |      |
| B.C.      | 7943 | 7942 | 8209 |      |      |      |      |
| CANADA    | 8119 | 8052 | 8480 |      |      |      |      |

Table 1 outlines the disparities in income for each region over the 17 year span of the study and will provide initial insight into the uneven welfare growth occurring within Canada. According to the data, the average Canadian

disposable income has risen from \$5090 per person in 1967 to \$8480 in 1983. However, this average increase of \$3390 per person was not felt equally across the regions. That is, where regions like the Mid-West and Alberta showed large increases in per capita disposable income of around \$4000, the area of the Maritimes enjoyed only slightly better than a \$2000 rise. Hence, it is apparent that some regions are growing at better rates than others.

Furthermore, the table shows that, in 1967 the Maritimes had an income level of roughly over \$4500 per person whereas, Ontario and the Mid-West were experiencing rates just better than \$5500 a person -- a mere \$1000 per person different. Although this might not seem like much, it definitely is. In 1971 the situation was similar except the gap begins to widen. Ontario is now receiving about \$6500 in disposable income but, the Maritimes is barely reaching \$5000. The difference has now increased to \$1300 a person in income rates. And this situation only gets worse for, in 1976 the gap between the region with the highest disposable income levels and the region with the lowest has widened to approximately \$2000 per person. Yet, matters only seem to worsen again in that, by the end of the study period (1983), the region experiencing the highest income levels -- the Mid-West -- has passed the lowest growing region -- the Maritimes -- by almost \$2500 per person. Therefore, with help from this table it is obvious that disparities in the growth

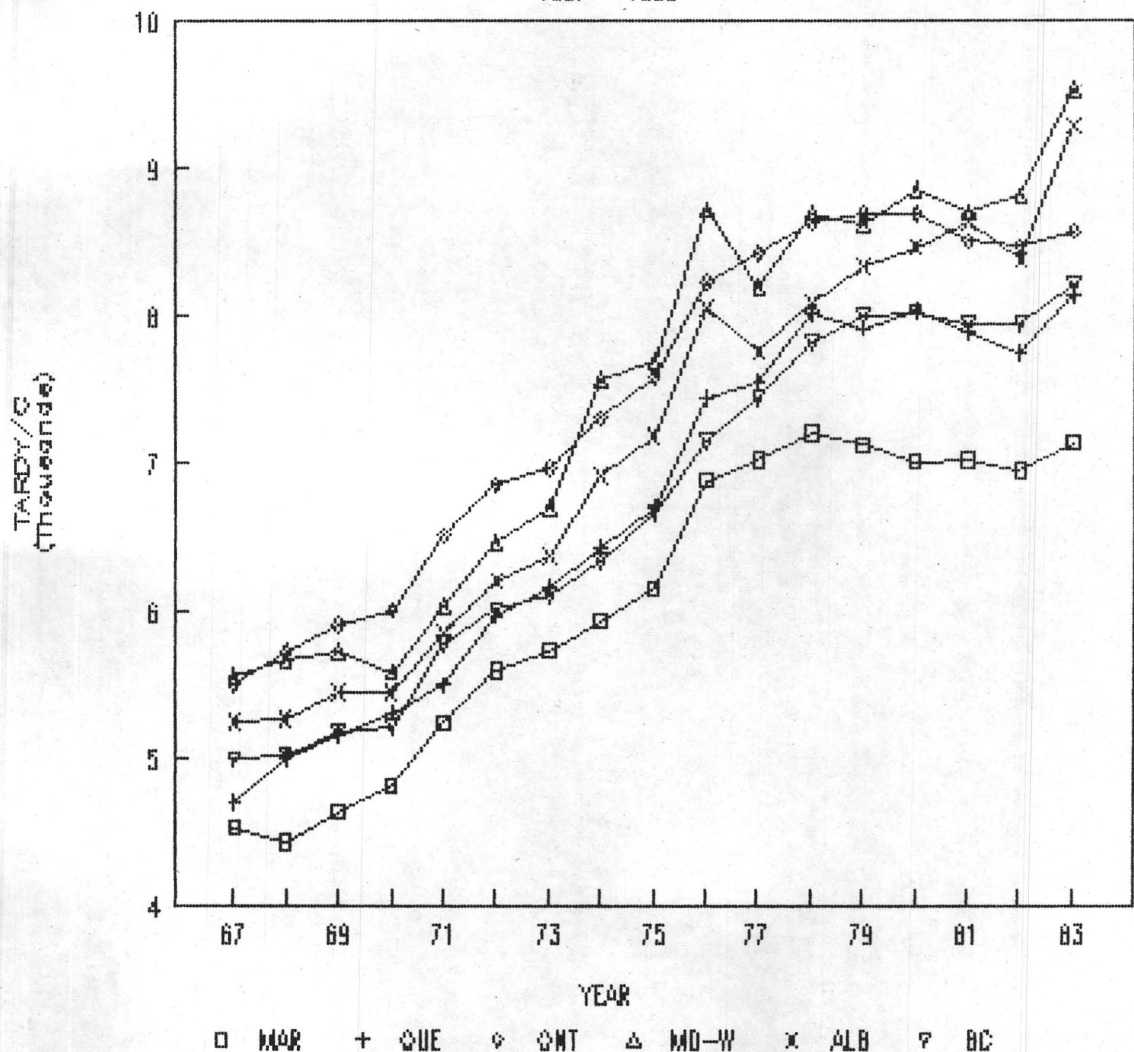
of economic welfare amongst the regions of Canada does exist.

In order to identify the apparent trends existing in the calculated disposable income levels, it would be best to refer to graph 1 which plots the data from table 1.

GRAPH 1

## DISPOSABLE INCOME LEVELS IN CANADA

1967 - 1983



This graph of the disposable income levels is



beneficial as it shows the flows in income distribution across the regions as well as simplifying the unevenness with which these levels increase.

From the graph it becomes evident that the disparity levels do show significant trends in their regional behaviour. All regions seem to flow at an increasing rate and in somewhat similar patterns. Every region raises considerably from 1967 up to 1976. But, from then on they seem to level off except for the odd pronounced increase or decrease as occurred in the Mid-West and the Alberta regions between 1981 and 1983.

However, it is also apparent in graph 1 that the regions flow in different patterns as well. Some regions tend to develop more closely to one region than another. For instance, Ontario and British Columbia show very similar growth patterns yet, Ontario's level is much higher than British Columbia's. As well, the Maritimes and Quebec seem to emulate one another quite closely. Both regions trail the rest of Canada in terms of welfare prosperity and coincidentally both seem to rise and fall in equal proportions during the same years. Likewise, the western provinces of Alberta and the Mid-West take similar courses in their economic growth. They fluctuate with great frequency much unlike the remaining regions. Instead of showing a more controlled flow from year one to year seventeen, these two regions provide much greater shifts in their disposable income growth rates than the rest of Canada.

Therefore, it is obvious from both table 1 and graph 1 that disparities in the disposable income levels across Canada do exist and that these growths in economic welfare reveal rather interesting and significant trends.

#### 4.2 OBJECTIVE TWO:

Now that the fact has been established that disparities in economic growth do exist regionally across Canada -- the extent to which this occurs will be discussed later -- it is of great importance that the inequalities in development within these regions be expressed as well. That is, the attempt of the second objective is to prove that even greater disparities in disposable income levels are visible within the regions. In order to do this, each area was analyzed from a metropolitan, non-metropolitan perspective.

According to the data obtained, the existing inequalities at the interregional level are not as extensive as those that occur at the regional scale. However, it is important to note that disparities within a regional -- no matter how big or small -- are more detrimental to those that reside in that region. When the statistics are taken and compared on a regional basis, we are assuming that everyone within a region has or is close to having the value displayed by the regions average. (For example, in 1980 British Columbia had a disposable income level of \$8020 therefore, we assume

that each person within that region had an average standard of welfare of \$8000. And, in that same year Quebec registered a disposable income of \$8034 and so we also assume that each person in this region experiences that average level of welfare. Comparing the two we see that they only differ slightly from one another hence, both regions are experiencing about the same level of well being.) Therefore, from this example it is clear how in a regional analysis everyone within a region is assumed to have the same average disposable income level.

However, when an analysis is done on an intraregional scale we are able to see just how significant the differences are in disposable income values among the people of the region. Hence, at times the regional value can be somewhat misleading. Thus, a close look at the income differentials of a region like Quebec will support the belief that large discrepancies do occur in the welfare of people who reside in different parts of any particular region.

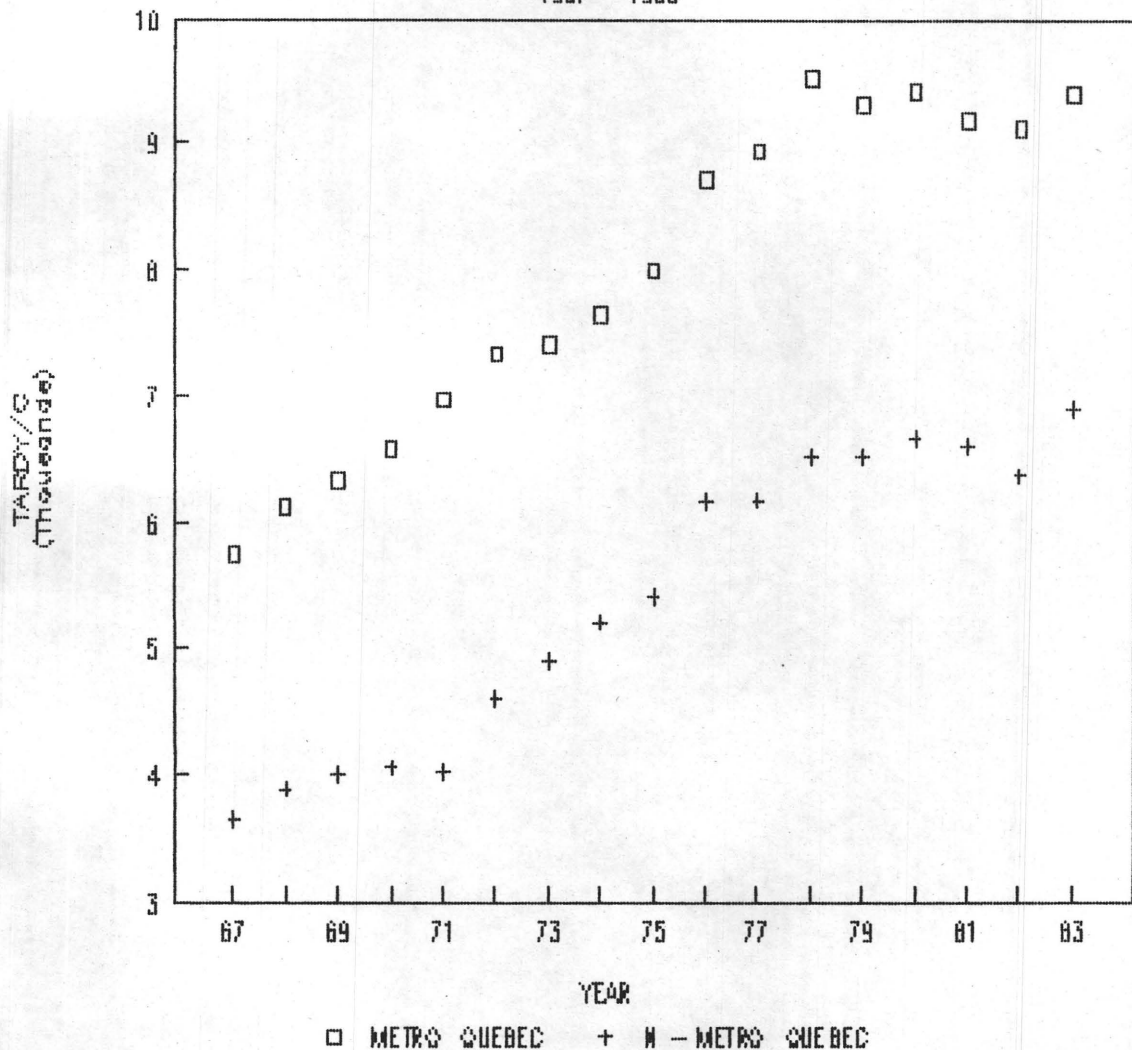
As is evident in graph 2 on the following page, disparities do occur in the levels of disposable income that people receive when living in the metropolitan and non-metropolitan areas of Quebec. Although the graph displays each area increasing its economic well-being at similar levels throughout the 17 year span, it is highly visible that each areas growth is uneven by a wide range of income. In 1971, Quebec's metropolitan areas were experiencing a disposable

income of almost \$7000 a person but, its non-metropolitan areas were only receiving slightly over \$4000 per person. This means that there is a discrepancy occurring where metro residents in the Quebec region have close to \$3000 more in disposable income than their non-metro dwelling neighbors.

GRAPH 2

## DISPOSABLE INCOME LEVELS IN QUEBEC

1967 - 1983



This disparity in income levels within this region's metro and non-metro population continue to occur up to 1983.



And this means that taking into consideration the population levels and the cost of goods and services within each of these areas of the Quebec region -- as the true average real disposable income per capita values do -- that, the people living in metro Quebec have a better state of welfare than those living in non-metro Quebec.

Similar disparities between the metro and non-metro areas of Canada's remaining regions are occurring. Some provinces, like British Columbia, are not experiencing these levels at such a great extent as Quebec is. However, the regions of Alberta, the Mid-West and the Maritimes do show significant inequalities in welfare growth between their metro and non-metro populations. Graphs to illustrate these disparities are included in appendix 1. Upon reviewing them, the extent to which these inequalities exists intraregionally will be enhanced.

Furthermore, in tables 2 and 3, also available in appendix 1, the disparity in disposable income between metro and non-metro areas at the national scale is also quite clear. In 1967, the average Canadian metropolitan disposable income level was \$5771 per person and the non-metropolitan value registered just less than \$1000 a person at \$4409. Here, the inequality does not seem like much. However, by 1987 Canada experienced one of its worst discrepancies as the metro disparity value was \$9228 and the non-metro level was only \$6927. This measured out to be \$2301, an increase that was

closely sustained from 1978 until 1983. This means that, at the national scale as well as the intraregional scale, people living in the metropolitan areas of their respective provinces are enjoying better economic well-being than those Canadians living in non-metropolitan Canada.

#### 4.3 OBJECTIVE THREE:

From the previous discussions, graphs and tables, it is evident that disparities in disposable income exist in and within Canada's regional borders. Until now the explanation has centered around the determination that disparities are apparent in Canada's economy as well as how these inequalities are shared by and within every province of this country. However, it is the goal of this section to discover which of Canada's regions are the strongest and weakest in terms of their economic growth. That is, which regions possess the highest and lowest disposable income levels -- welfare levels -- and how have these values changed over the 17 years of this study.

In order to attain this objective it is possible to refer to the graphs and tables of appendix 1. However, for further simplification of all this data, a table has been arranged which ranks the regions in terms of their levels of metropolitan, non-metropolitan and overall economic prosperity. As well, two graphs have been added to the

appendix which illustrate the metropolitan and non-metropolitan disparity in income for Canada's regions. Through the data in table 4 and both graphs, (available for review in appendix 2), it is easy to see which regions have been experiencing the greatest and/or worst well being in terms of unequal levels of disposable income, over the course of this study.

When looking at the metro statistics an obvious order of regions is visible. For the majority of years, Ontario and the Mid-West regions remain the strongest provinces, always maintaining a disposable income value above the Canadian average. Consistently they trade places between the top two rankings. Trailing these two regions slightly is Alberta, who also maintained a disparity value generally higher than the Canadian average over the 17 year span. Of some importance here is the fact that from 1979 on, Ontario begins to fade and Alberta assumes the number two ranking as the region that is experiencing the second best disposable income level in the country.

As for the remaining regions, Quebec has closely followed Ontario's rise in metropolitan economic stability. However, and this may come as a surprise, British Columbia has struggled with the Maritimes to keep from becoming the worst region in Canada in terms of economic welfare. Until 1977 the two regions remained very close maintaining poor levels of disposable income in their metro areas but, from 1978 to 1983,

British Columbia managed to increase its metro income level to rest just below the Canadian average of \$9567 per person.

With respect to non-metropolitan income values, the trend remains somewhat the same. Ontario and the Mid-West continue to provide great economic strength as Canada's two most consistently well off regions, variably trading places a number of times during the study period. Again, both regions constantly experience disposable income values above the Canadian average. Although Ontario appears to reveal its non-metro economic superiority over the long term, the Mid-West rises dramatically in 1973 and maintains this high value for three consecutive years, only to fall and rise several more times.

Again, as was evident in the metropolitan findings, Alberta lags closely behind the top two regions throughout the majority of the 17 years. During the first seven years, from 1967 to 1973, it struggled to increase its economic welfare, much the same as the Mid- West did. The most significant rise however, occurs from 1982 to 1983 as it takes over the second position as one of Canada's more well off non-metropolitan regions.

During the entire study, British Columbia shows more economic strength in its non-metro areas than it did at any time in its metropolitan districts. Its level of disposable income fluctuates from a second ranking to a fourth ranking over the study. Consistently, British Columbia's disparity



levels are above the Canadian average and probably the most stable of all the regions, next to Ontario.

Last in the analysis are Quebec and the Maritimes. Both regions demonstrate the worst possible disparity figures in all Canada. Between 1967 and 1977 these two areas remained relatively equal in terms of economic welfare but, after 1978 a definite decrease in the Maritimes combined with an accumulative increase for Quebec, caused a separation between these two eastern regions from their seemingly assimilated past. With a marginal rise in Quebec from 1982 to 1983, the two regions have become more distant than ever before even though both find their welfare situation falling far behind the rest of Canada.

Therefore, the result of this previous analysis brings to the fore the existing economic disparities of each region in order to determine who, overall, are the strongest and weakest. That is, in looking at the regions as wholes and combining metro and non-metro welfare values, the actual position of each region within the economy or their rank will be determined.

Overall, the ranking from best to worst is very similar to what has occurred in the metro and non-metro areas of each region. From 1967 to 1973 Ontario boasts the best level of disposable income of all the provinces. However, by 1974 the Mid-West region had taken over this position and relinquished it for only three of the remaining ten years of the study,

1977 to 1979.

Staying relatively close without ever jeopardizing the two top regions' positions, was Alberta. Having surpassed Ontario only twice in the entire 17 years, in 1981 and again in the final year of the study, Alberta ended up with a total true average disposable income level of \$9285 per person. The next best value to the Mid-West which recorded this studies highest value in 1983, \$9525. Next, of course was Ontario with a final income level of \$8578, a value that was down from its previous high of \$8698 back in 1980.

British Columbia, the fourth ranked region, struggled constantly with Quebec from start to finish. It was only in the final four years of the study that it showed superiority over Quebec even though it finished with a disposable income of \$8209 compared to Quebec's close, \$8141.

As for the Maritimes, from beginning to end it trailed the field of six regions. Never once did it give up its hold on last place and the worst overall economic welfare experienced by any region within the country.

Therefore, by ranking the regions in order of those who are experiencing the better levels of disposable income to those that are experiencing the worst, the disparities that have existed in Canada's regional economic welfare are evident. Ontario, although it does taper off in the 1980's, enjoyed consistently the best welfare of any region across Canada. Similarly, the Maritimes constantly experienced the

weakest income levels of any region in the country.

The major surprise, to me anyway, was the activity of the Mid-West and British Columbia. By today's standards most would expect their levels to be reversed. However, the main reason that the Mid-West is high and British Columbia records lower levels is that the cost of living is much, much greater in British Columbia than it is in the prairie provinces of Manitoba and Saskatchewan. Because the disposable income levels are adjusted by the cost of living (i.e. the spatial price index), the Mid-West region has experienced a disposable income level in 1983 that exceeds any other region in the nation.

#### 4.4 OBJECTIVE FOUR:

Upon completion of the first three goals of this paper, it is at this point that the fourth and final objective becomes relevant. It was determined that all the regions of Canada are not developing evenly. That is, differences in economic well-being -- determined by the use of weighted disposable income levels -- have been experienced across the nation. Therefore, in looking at the spatiotemporal aspects of these disparities, it is important to note whether any convergence or divergence in the inequalities of the six regions has occurred over the 17 year span of this study.

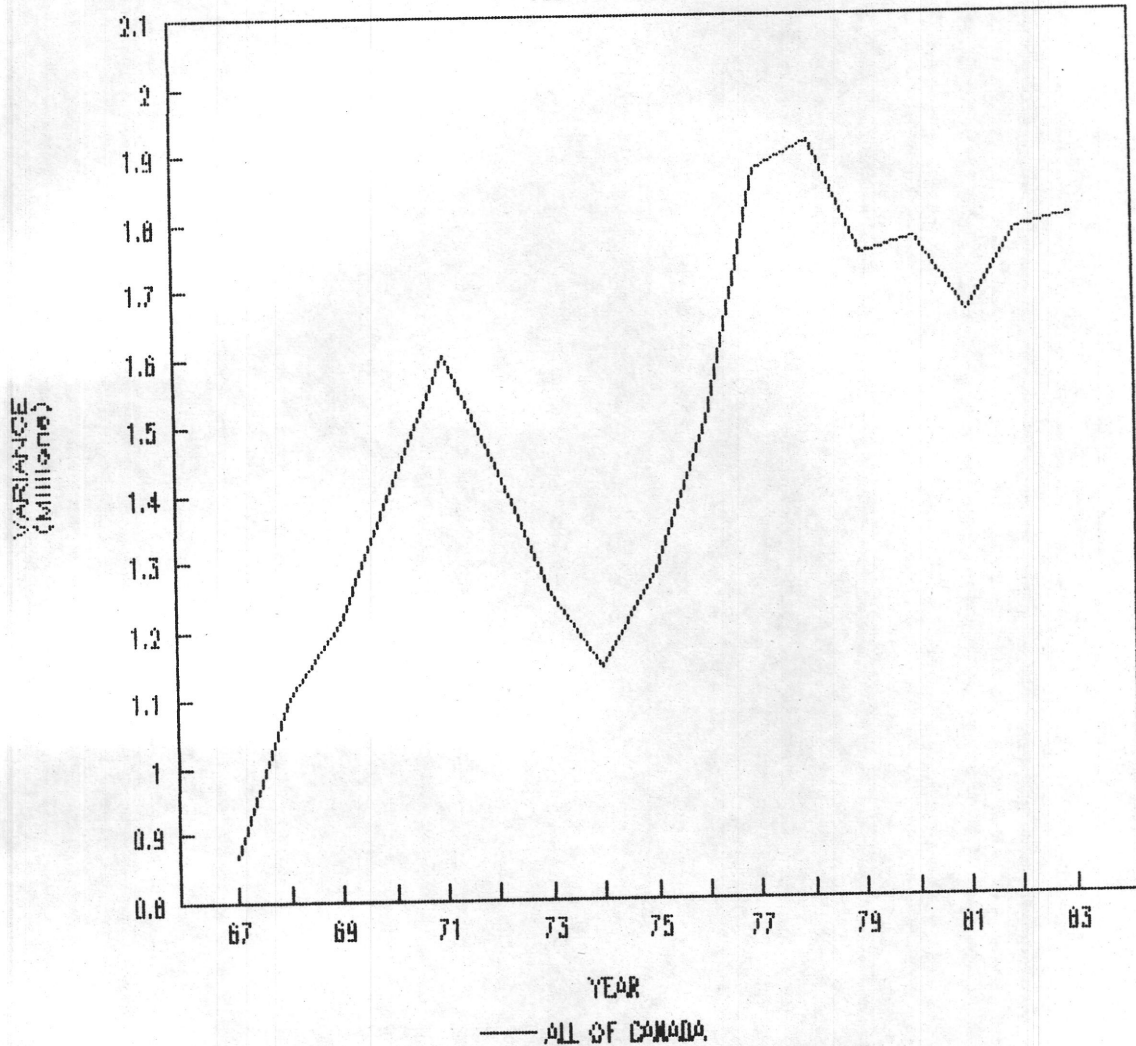
Thus, the measures of variance, as outlined in chapter

three, were calculated and graph 13 shall illustrate the data.

GRAPH 13

## VARIANCE IN DISPOSABLE INCOME LEVELS

1967 - 1983



According to graph 13, the disparities in disposable income levels across Canada's six regions have been more divergent than convergent. As disposable income levels grew



from 1967 to 1971, the inequalities increased among the regions. However, in 1972 and 1973 the gap lessens slightly and the unevenness is not as great. Yet, this only lasts a short time for, between 1975 and 1977 the disposable income levels take a dramatic increase and show their divergent behaviour. From 1978 on, amid a few minor fluctuations of decreasing, increasing, decreasing and then increasing again, the levels of variance tend to remain rather constant.

Constant in the sense that each region experiences a similar level of disparity that they had achieved in the previous years hence, their disposable income levels are not coming closer together nor are they moving further apart. Instead, we find that nearing the end of the study, the regions seem to be maintaining an even spread in income and in so doing, are perpetuating the existence of disparities in the levels of well-being among the six Canadian regions.

Similar graphs illustrating the metropolitan and non-metropolitan variances in disparities are available in appendix 3. In the metro graph this idea of constancy is visible throughout the entire data set except for small rises and falls in 1976 and 1979 respectively. On the whole, the disposable income values remain relatively similar. As for the non-metro data, the scenario changes. Fluctuations are evident throughout these disposable income levels, constantly increasing then decreasing and then increasing its spread year after year. Through these two graphs it's evident that in

Canada, living in metropolitan communities, preferably in either Ontario, Alberta or the Mid-West, almost guarantees a more stable economic existence than if one was to reside in a rural environment.

Thus, on the whole it is evident in these variance graphs that the disparities between the six Canadian regions are, although somewhat divergent in the first 10 years of the study, rather constant in the degree with which they are experiencing inequalities in disposable income levels over the remaining 7 years of the data set.

#### 4.5 SUMMARY

The problem of Canada's uneven economic development has been an issue in economic and social science literature for a number of years. Since income plays an important role in a region's growth, it seems imperative to discuss income levels in this study on the inequalities of economic welfare existing within Canada's geographical regions. Therefore, the purpose of this paper is to examine spatial and temporal trends in disposable income levels in order to determine the existing disparities in economic well-being across Canada.

A number of calculations have been performed in order to arrive at a value that will allow a comparison of provincial welfare, better known as the true average real disposable income per capita, over time and through space.

From the graphs and tables that were created to simplify the visible disparities, some objectives have been fulfilled.

Through the data it has been made clear that Canada does experience disparities in her economic well being, not only at the regional scale but, at the intraregional scale as well. Metropolitan Canada has experienced higher levels of disposable income and greater economic stability than non-metropolitan Canada has. As a result, those people living in metro cities throughout Canada have enjoyed greater well-being in terms of economic growth and development.

Also, it has become evident that some regions have enjoyed better welfare levels than others. Coincidentally, those regions showing the greater economic well-being at the initial stages of the study, were also found to have been able to maintain this standard or close to it by the end of the study. That is, some regions like Ontario and the Mid-West demonstrate great economic superiority in their well-being over others and have been able to preserve this well-being for 17 years.

Significant results have also been discovered based on the data that was used. That is, because the disposable income was weighted by the spatial price index, a region like the Mid-West that would normally show a much lower level of economic prosperity, has tended to rise above all others in economic well-being. Because this region has a much lower standard of living than the average Canadian region -- its

price index and subsequent cost of goods and services -- allows the value of its disposable income to be that much greater than the remaining provinces. Conversely, British Columbia supports a very high standard of living hence, its income levels are decreased in strength and as a result ends up with a welfare ranking not that much better off than the Maritimes of Quebec.

Furthermore, as the data has revealed the existence of disparities across the six regions by measuring the variance, it has also provided us with the diversity with which these disparities occur throughout the regions. Through this new data it has been discovered that over the initial 10 years of the study the disposable income levels tended to increase in value hence, promoting a divergence of the disparity levels. However, in the last 7 year span of the study, the disposable income values of the regions has remained somewhat evenly spread thus, the regional income disparities have remained relatively constant as well.

Therefore, by examining the disposable income levels from a spatiotemporal perspective, the historically unequal development that has occurred in Canada's regional economic welfare has become evident. Even though this study cannot adequately determine all disparities in economic growth, it has provided much needed insight into the inequalities that exist in the Canadian quality of life.



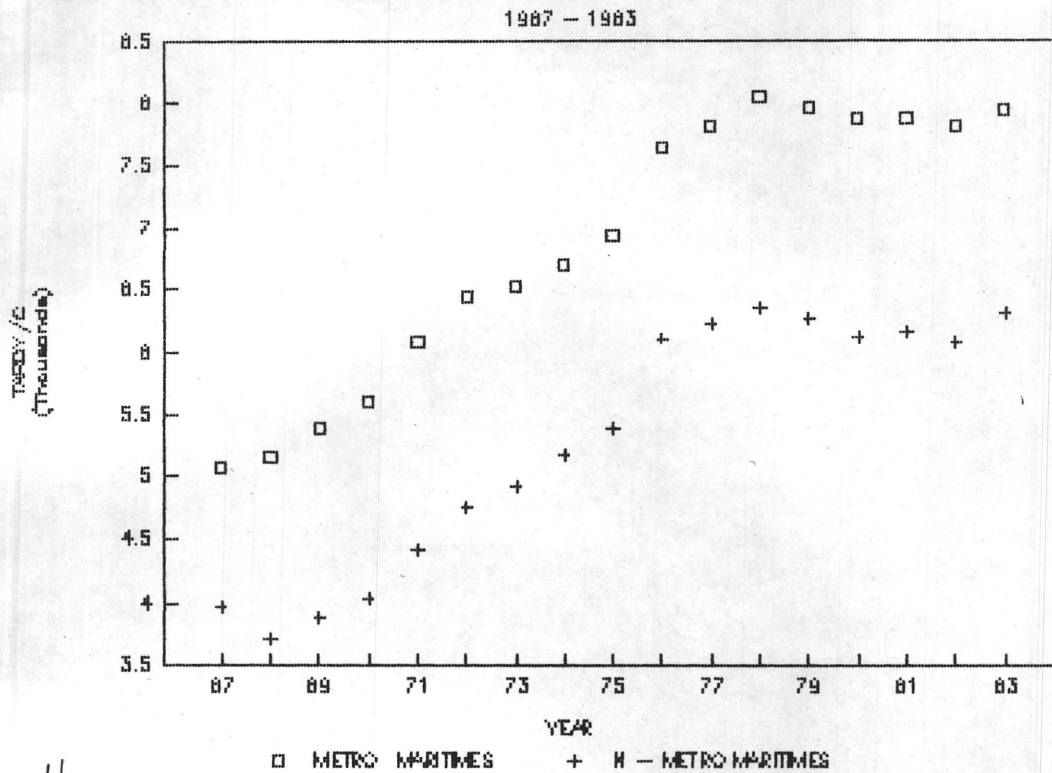
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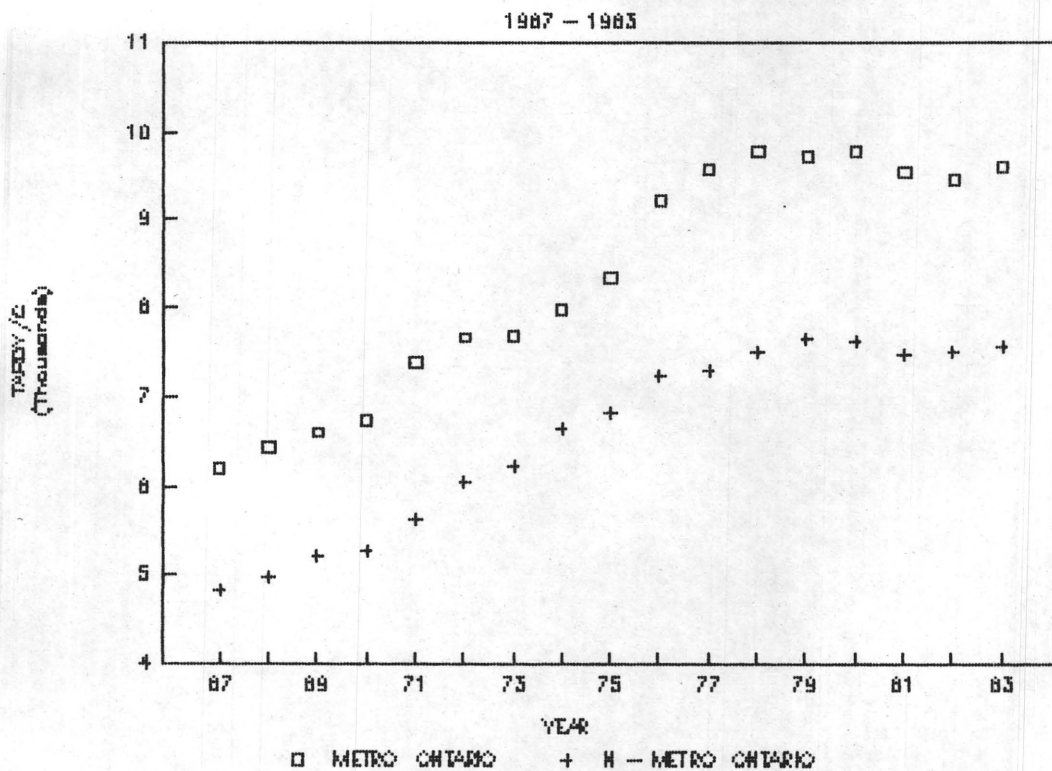
## APPENDIX 1

## 3. DISPOSABLE INCOME LEVELS, THE MARITIMES



4.

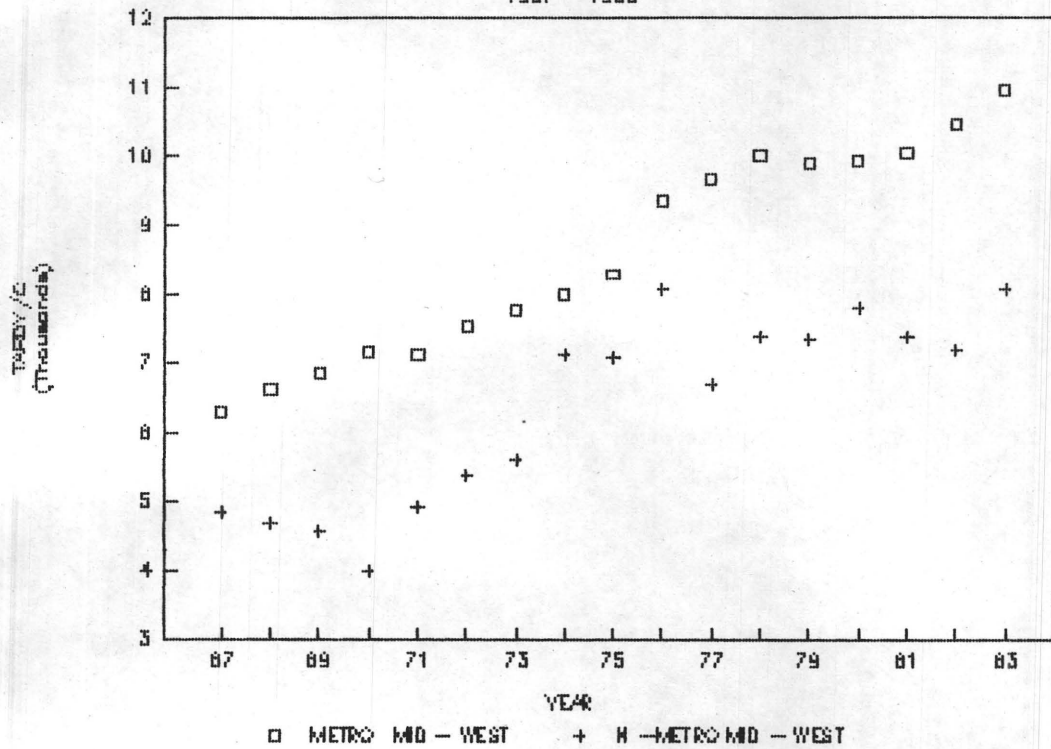
## DISPOSABLE INCOME LEVELS IN ONTARIO



5.

## DISPOSABLE INCOME LEVELS, THE MID-WEST

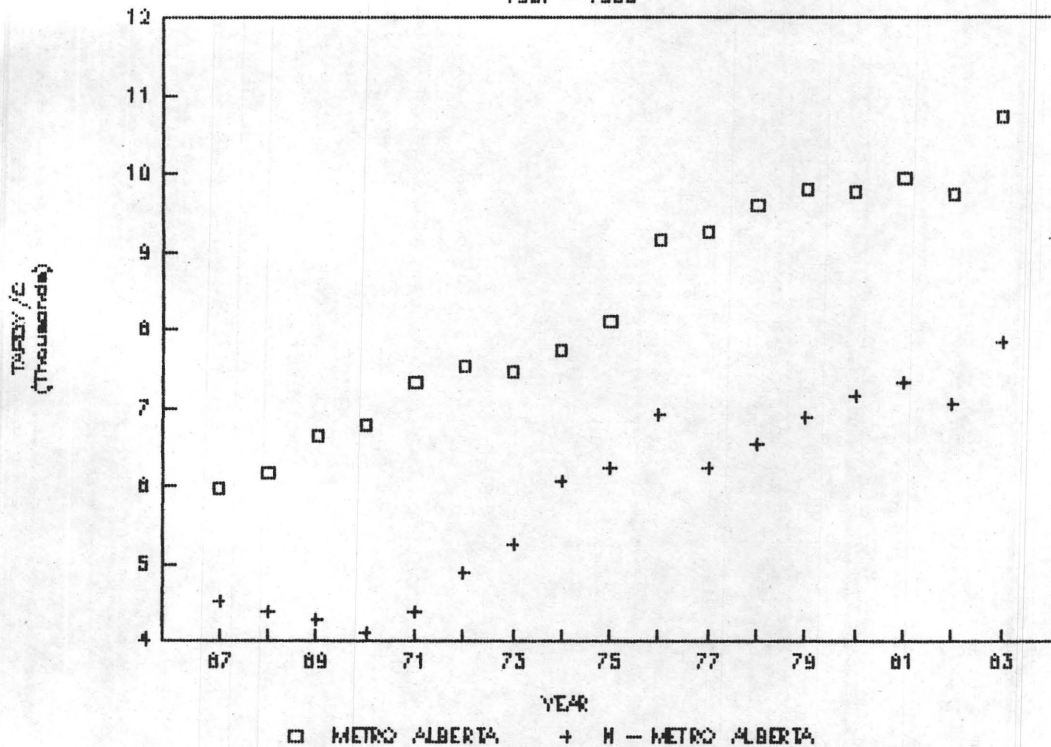
1987 - 1983



6.

## DISPOSABLE INCOME LEVELS IN ALBERTA

1987 - 1983





7.

## DISPOSABLE INCOME LEVELS IN B.C.

1987 - 1983

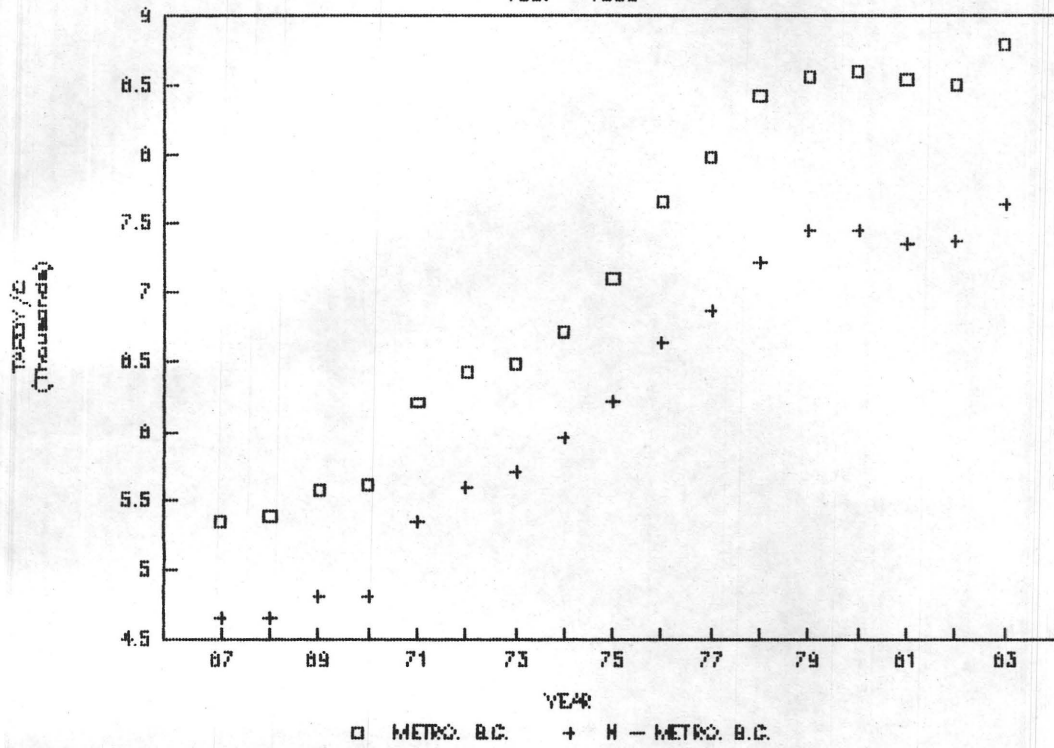


TABLE 2  
TRUE AVERAGE REAL DISPOSABLE INCOME PER CAPITA  
METROPOLITAN CANADA  
1967 -- 1983

| REGION    | 1967  | 1968  | 1969  | 1970 | 1971  | 1972 | 1973 |
|-----------|-------|-------|-------|------|-------|------|------|
| MARITIMES | 5073  | 5146  | 5387  | 5595 | 6093  | 6445 | 6537 |
| QUEBEC    | 5747  | 6118  | 6331  | 6581 | 6975  | 7326 | 7409 |
| ONTARIO   | 6195  | 6448  | 6600  | 6723 | 7384  | 7668 | 7692 |
| MID-WEST  | 6273  | 6634  | 6881  | 7179 | 7137  | 7556 | 7779 |
| ALBERTA   | 5988  | 6177  | 6643  | 6802 | 7335  | 7517 | 7469 |
| B.C.      | 5348  | 5385  | 5565  | 5616 | 6215  | 6426 | 6493 |
| CANADA    | 5771  | 5985  | 6235  | 6416 | 6857  | 7156 | 7230 |
|           | 1974  | 1975  | 1976  | 1977 | 1978  | 1979 | 1980 |
| MARITIMES | 6689  | 6925  | 7656  | 7812 | 8060  | 7959 | 7890 |
| QUEBEC    | 7635  | 7980  | 8707  | 8926 | 9506  | 9298 | 9397 |
| ONTARIO   | 7978  | 8340  | 9234  | 9565 | 9781  | 9726 | 9775 |
| MID-WEST  | 8001  | 8299  | 9351  | 9657 | 10007 | 9890 | 9918 |
| ALBERTA   | 7744  | 8114  | 9173  | 9248 | 9599  | 9792 | 9761 |
| B.C.      | 6723  | 7096  | 7649  | 7989 | 8417  | 8563 | 8597 |
| CANADA    | 7461  | 7792  | 8628  | 8866 | 9228  | 9205 | 9223 |
|           | 1981  | 1982  | 1983  |      |       |      |      |
| MARITIMES | 7874  | 7821  | 7956  |      |       |      |      |
| QUEBEC    | 9176  | 9113  | 9378  |      |       |      |      |
| ONTARIO   | 9542  | 9453  | 9598  |      |       |      |      |
| MID-WEST  | 10035 | 10442 | 10968 |      |       |      |      |
| ALBERTA   | 9932  | 9126  | 10720 |      |       |      |      |
| B.C.      | 8528  | 8505  | 8784  |      |       |      |      |
| CANADA    | 9181  | 9177  | 9567  |      |       |      |      |

TABLE 3  
TRUE AVERAGE REAL DISPOSABLE INCOME PER CAPITA  
NON - METROPOLITAN CANADA  
1967 --1983

| REGION    | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------|------|------|------|------|------|------|------|
| MARITIMES | 3970 | 3705 | 3875 | 4037 | 4405 | 4760 | 4929 |
| QUEBEC    | 3646 | 3885 | 4000 | 4057 | 4027 | 4605 | 4901 |
| ONTARIO   | 4830 | 4997 | 5211 | 5284 | 5638 | 6037 | 6234 |
| MID-WEST  | 4839 | 4706 | 4578 | 3996 | 4931 | 5362 | 5611 |
| ALBERTA   | 4521 | 4377 | 4267 | 4099 | 4368 | 4879 | 5271 |
| B.C.      | 4649 | 4653 | 4802 | 4818 | 5352 | 5585 | 5710 |
| CANADA    | 4409 | 4387 | 4456 | 4382 | 4787 | 5205 | 5443 |
|           | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
| MARITIMES | 5171 | 5376 | 6115 | 6237 | 6352 | 6282 | 6132 |
| QUEBEC    | 5209 | 5413 | 6169 | 6174 | 6526 | 6526 | 6671 |
| ONTARIO   | 6632 | 6814 | 7231 | 7290 | 7501 | 7657 | 7622 |
| MID-WEST  | 7123 | 7089 | 8106 | 6727 | 7404 | 7364 | 7815 |
| ALBERTA   | 6085 | 6252 | 6929 | 6258 | 6562 | 6884 | 7177 |
| B.C.      | 5959 | 6220 | 6641 | 6876 | 7214 | 7437 | 7443 |
| CANADA    | 6030 | 6194 | 6865 | 6594 | 6927 | 7025 | 7143 |
|           | 1981 | 1982 | 1983 |      |      |      |      |
| MARITIMES | 6163 | 6083 | 6324 |      |      |      |      |
| QUEBEC    | 6610 | 6367 | 6904 |      |      |      |      |
| ONTARIO   | 7478 | 7495 | 7558 |      |      |      |      |
| MID-WEST  | 7384 | 7193 | 8082 |      |      |      |      |
| ALBERTA   | 7344 | 7045 | 7850 |      |      |      |      |
| B.C.      | 7358 | 7378 | 7634 |      |      |      |      |
| CANADA    | 7056 | 6927 | 7392 |      |      |      |      |

APPENDIX 2

TABLE 4  
TRUE AVERAGE REAL DISPOSABLE INCOME PER CAPITA BY RANK  
METRO. / NON-METRO. / ALL OF CANADA  
1967 -- 1983

| REGION    | 1967  | 1968  | 1969  | 1970  | 1971  | 1972  | 1973  |
|-----------|-------|-------|-------|-------|-------|-------|-------|
| MARITIMES | 6 5 6 | 6 6 6 | 6 6 6 | 6 5 6 | 6 4 6 | 5 5 6 | 5 5 6 |
| QUEBEC    | 5 6 5 | 5 5 5 | 4 5 5 | 4 4 4 | 4 6 5 | 4 6 5 | 4 6 4 |
| ONTARIO   | 2 2 2 | 2 1 1 | 3 1 1 | 3 1 1 | 1 1 1 | 1 1 1 | 2 1 1 |
| MID-WEST  | 1 1 1 | 1 2 2 | 1 3 2 | 1 6 2 | 3 3 2 | 2 3 2 | 1 3 2 |
| ALBERTA   | 3 4 3 | 3 4 3 | 2 4 3 | 2 3 3 | 2 5 3 | 3 4 3 | 3 4 3 |
| B.C.      | 4 3 4 | 4 3 4 | 5 2 4 | 5 2 5 | 5 2 4 | 6 2 4 | 6 2 5 |
|           | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  |
| MARITIMES | 6 6 6 | 6 6 6 | 5 6 6 | 6 5 6 | 6 6 6 | 6 6 6 | 6 6 6 |
| QUEBEC    | 4 5 4 | 4 5 4 | 4 5 4 | 4 6 4 | 4 5 4 | 4 5 5 | 4 5 4 |
| ONTARIO   | 2 2 2 | 1 2 2 | 2 2 2 | 2 1 1 | 2 1 2 | 3 1 1 | 3 1 2 |
| MID-WEST  | 1 1 1 | 2 1 1 | 1 1 1 | 1 2 2 | 1 2 1 | 1 3 2 | 1 2 1 |
| ALBERTA   | 3 3 3 | 3 3 3 | 3 3 3 | 3 4 3 | 3 4 3 | 2 4 3 | 2 4 3 |
| B.C.      | 5 4 5 | 5 4 5 | 6 4 5 | 5 3 5 | 5 3 5 | 5 2 4 | 5 3 5 |
|           | 1981  | 1982  | 1983  |       |       |       |       |
| MARITIMES | 6 6 6 | 6 6 6 | 6 6 6 |       |       |       |       |
| QUEBEC    | 4 5 5 | 4 5 5 | 4 5 5 |       |       |       |       |
| ONTARIO   | 3 1 3 | 3 1 2 | 3 4 3 |       |       |       |       |
| MID-WEST  | 1 2 1 | 1 3 1 | 1 1 1 |       |       |       |       |
| ALBERTA   | 2 4 2 | 2 4 3 | 2 2 2 |       |       |       |       |
| B.C.      | 5 3 4 | 5 2 4 | 5 3 4 |       |       |       |       |

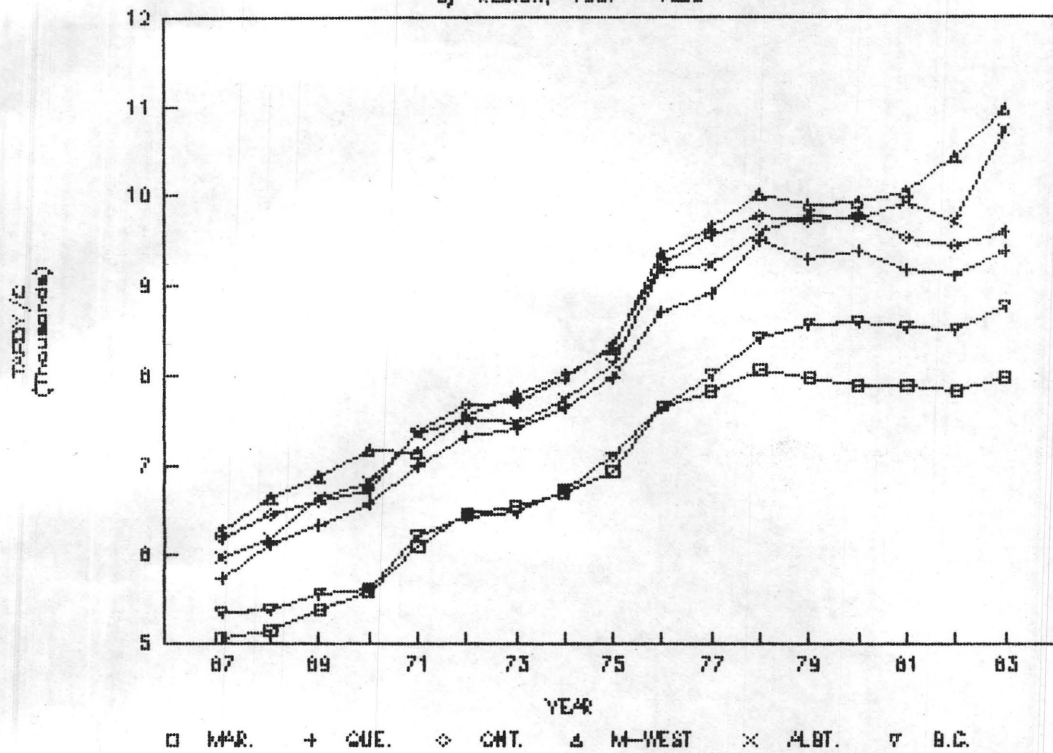


9.

51

## DISPOSABLE INCOME LEVELS, METRO CANADA

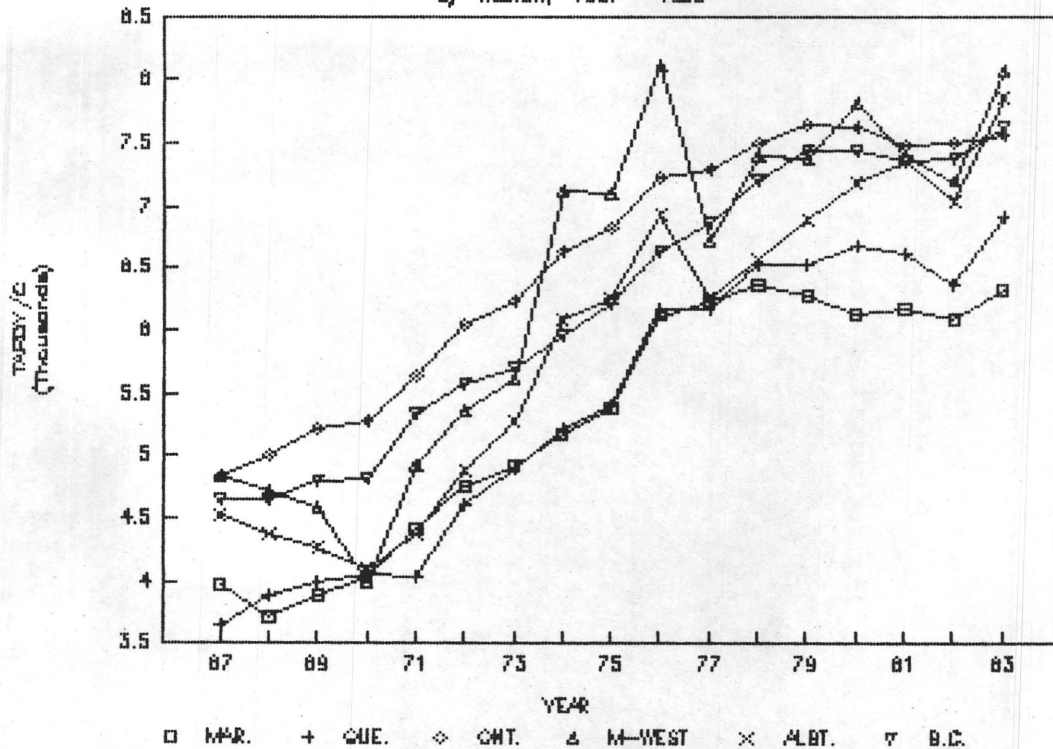
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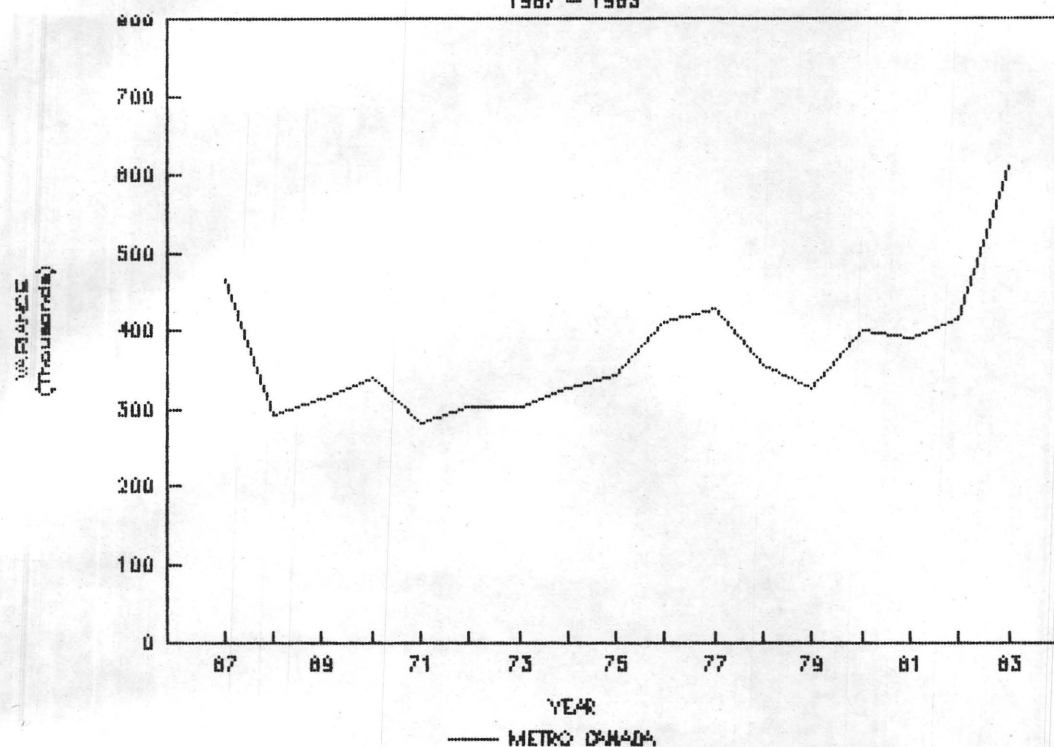
## DISPOSABLE INCOME LEVELS, N-METRO CANADA

by REDMON, 1987 - 1983



## 11. VARIANCE IN DISPOSABLE INCOME LEVELS

1987 - 1983



## 12. VARIANCE IN DISPOSABLE INCOME LEVELS

1987 - 1983

