An Analysis of Provincial Health Expenditures in Canada

by

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1. INTRODUCTION

Over the past twenty years, debates around the provision of social programs have been a constant theme at political tables in Canada. With huge budget deficits, the federal and provincial governments have had to find ways to reduce their expenditure. Reduction in social programs is one way of reaching this goal. In 1980, federal health transfers to provinces accounted for 43% of provincial government health expenditures. By 1995, this ratio was brought down to 33%. The decline in the federal share of health expenditures started in the mid 1980s. Provinces had to adjust and find ways to provide a constant level of services, despite their own budget crises and sometimes, harsh economic conditions (National Health Expenditure Trend, CIHI, Tables B14, B15, 1999).

Health care services being fully insured and universally provided in Canada, are extremely expensive and are one of the major sources of expenditure for the governments (the national average is around 41% (National Health Expenditure Trend, CIHI, 1999) of total provincial budget expenditures). Moreover, with an ageing population that will require an ever-increasing amount of health services, many analysts are worried that the current resource allocation will not be enough to ensure the level and quality of services to which Canadians have become accustomed. Finding the determining factors contributing to hikes in costs and expenditure is thus essential to any policy prescription.

Many stakeholders and politicians claim that there are great disparities in the provision of health services among provinces, even though the *Canadian Health Act* stipulates a common level of services to be ensured. It is possible that different provinces may make different choices in the provision of social programs such as health since it is in their jurisdiction to do so. Nevertheless, the federal government, with its transfer payments and broad policy actions, can certainly have a strong influence on the way the provinces will make their choices.

It is the increased pressure on the health care system coupled with decreases in real public health expenditures that has brought the issue of health care funding to the boiling point in political and economic circles. Any increase in health expenditures means there is less for everything else; that is, the increase comes at an ever-higher opportunity cost. This is why it is so important to evaluate if in fact the share of income spent on health care is really decreasing in the public sector, and what parts of our health care system take the greater share of these expenditures. One contribution of this paper, therefore, is to examine the evolution in health care expenditure over the past two decades and see if in fact, the reduction of federal health transfers is coupled with a reduction in total health expenditures.

The rapid growth of public expenditure in the post-war era as well as the public finance crises during the 1980s and 1990s sparked a large number of studies on

the determinants of public expenditure. Both economists interested in public finance, and political scientists interested in the possible impact on policy outcomes of political factors, have been interested in this topic. These analysts have come to rely heavily on statistical quantitative measures of government activity, and to seek out quantitative indicators for the relevant explanatory factors. This paper is a contribution to that literature. It is based on previous work of Simeon and Miller (1980) and Atkinson and Bierling (1998). It examines disparities in provincial health expenditures using Dispersion Indices. Finally, the third contribution of this paper is to try and provide explanatory determinants of health care expenditures.

2. LITERATURE REVIEW

Simeon and Miller (1980) studied government expenditures in eleven policy areas over the period 1956-1974. They studied interprovincial expenditure variations among the ten Canadian provinces in these policy areas using Dispersion indices[1] to describe the situation and a regression model to explain the sources of disparities among provinces. Their main conclusion is that for the 1956-1974 period, there is a very high degree of convergence among provinces in their spending patterns. They found that the growing similarity is strongest in total government activity, and in the largest and most expensive fields of health, education and welfare.

For each of the areas they studied, their basic hypotheses were that gross per capita expenditures are a function of:

- Income;
- Equalization payments;
- Election year;
- Political party in power; and
- Province

After looking at gross data and determining that disparities among provincial health expenditures were decreasing over time, they used these hypotheses to determine the factors affecting health expenditures.

[1]The Index of Dispersion will be explained later as I use a similar methodology in Sections 3 and 4.

In the period studied by Simeon and Miller, grants from the federal government played an important role in the health field. The National Health Grant Program was introduced in 1948 and the Hospital Insurance and Diagnostic Services Program began in 1957. Medicare was introduced in 1969, so that by then Ottawa was paying a large share of all major aspects of medical and hospital care. Given this heavy federal involvement in the health field, particularly hospital care, it would be expected that differences in per capita spending amongst the provinces would be small (after account is taken of transfer payments). The facts point to this conclusion. The dispersion indices for health expenditure declined sharply throughout the period despite short-term fluctuations.

In Simeon and Miller's regression, it is shown that income is a significant determinant of health spending while federal transfers are, but not to the same extent. A variable that denotes election year also has a statistically significant coefficient, as the one denoting the political party in power in each province. These results are consistent with political science theories that stipulate that during an election year, government spending increases, and that the liberal and new democrat parties tend to spend more on health care than conservative ones.

Simeon and Miller give three reasons that account for the convergence found.

> *First, given the overwhelming importance of wealth in explaining differences among units in other settings, it could be that provinces have become more similar because their economic circumstances have converged. But the large and continuing disparities in Canada lead us to*

> *qualify this explanation. There is some evidence that richer provinces may have more freedom of action in some fields such as recreation and culture. There is also evidence that poorer provinces depend on government to promote economic development and to overcome unfavourable market forces more than do stronger provinces. But overall differences in wealth have remarkably little to do with convergence* (Simeon and Miller, 1980, p. 275).

The second reason that can explain convergence in health expenditures, according to Simeon and Miller is the activity of the federal government which takes two forms, general equalization payments to provinces and shared cost programs. The former acts to bring provincial revenues to the national average, regardless of their initial wealth; the latter, through its provision for matching funds for specific purposes, provides an incentive for provinces to act in designated fields. The overall impact of federal grants is simply to break the bond between the strength and wealth of a provincial economy and its access to public revenues.

Finally, they explain convergence in expenditures by the convergence in citizens' demand and the process of interprovincial communication and the demonstration effect. This process compels the citizens of different provinces to demand what the other provinces have, bringing all the provinces to similar levels of service provision.

Since the Simeon and Miller's study, cost shared programs have been eliminated and the introduction of the *Canada Health and Social Transfer* (CHST)[2] has

[2] CHST will be described in more delails in Section 2.

given provinces more flexibility in the way they allocate social expenditure. With CHST, provinces receive one single transfer for health and social services. They are free to allocate the funds as they wish as long as they meet the CHA requirements. Under the previous method, EPF and CAP, health transfers were well specified. This may cause increasing divergence in health care spending. However, it is not possible to obtain conclusive results about the CHST since its implementation was only three years ago.

Following Simeon and Miller's work, Atkinson and Bierling (1998) examined the question of whether the provinces are becoming increasingly similar in their total spending and in the level of spending devoted to particular functional areas. Using various measures of spending, they trace the pattern of provincial spending between 1971 and 1994. They then show, using Dispersion indices, that in some areas there has been a persistent movement toward similar levels of spending and similar spending priorities, while in other areas a divergent or indeterminate pattern has been established.

Atkinson and Bierling employed two measures of spending priorities, and the results have not always been consistent with each other. Proportionate measures, as spending ratios are constrained by growth or contraction in other areas. In recent years, growing levels of debt servicing have provided additional constraints. Thus, while it is possible to spend more in absolute terms in particular functional areas, these increases may be neutralized in proportionate

terms. This explains why in their conclusion, the tendency towards convergence in provincial total spending has been generally less pronounced when using proportionate measures.

Atkinson and Bierling's general conclusion is that the 24-year period studied is not one unbroken pattern. In some cases the provinces reverse their initial convergent direction and become increasingly different from one another. They suggest that the role of federal-provincial fiscal relations and the impact of changing economic conditions may explain these patterns.

When looking more closely at health care expenditures, Atkinson and Bierling note great convergence patterns. They show that provinces have become increasingly alike in terms of the relative importance of health care in the formation of provincial budgets. However, they cannot show any clear pattern on a per capita spending basis. They identified the capacity of some provinces to increase per capita spending without increasing the relative importance of health vis-à-vis other spending areas as a source of discrepancies in their results.

Atkinson and Bierling focused on describing patterns of convergence and divergence in provincial spending priorities. They have canvassed some of the more intriguing explanations for these patterns, but no rigorous tests have been applied. "*What we can safely conclude is that certain key policy areas have been subject to a significant convergence in spending levels, notwithstanding moves*

by the federal government to disentangle itself from provincial spending decisions" (Atkinson and Bierling, 1998, p. 86). Looked at another way, they provide little support for Simeon and Miller's idea that the federal government is the driving force for convergence in health spending. According to Atkinson and Bierling, the provinces have converged despite the federal government.

They conclude by stating that " *if we are to understand provincial spending decisions, and resulting patterns of convergence and divergence, we will have to identify other variables. And, because we have found that convergence is by no means the overall, invariable pattern, it will be necessary to appreciate that the impact of these variables are likely to be contingent on the spending areas and the period chosen*" (Atkinson and Bierling, 1998, p.86).

3. PROVINCIAL HEALTH EXPENDITURES

3.1. Data

Most of the health data used in the present study come from a publication of the *Canadian Institute for Health Information* (CIHI) entitled National Health Expenditure Trends. The data included in this publication come from the national Health Expenditure (NHEX) database for which CIHI is responsible. The NHEX database is based on a system of classification that is consistent with international standards[3] for the reporting of health expenditures.

It is important to note that comparisons in terms of dollars spent for health care are not accurate comparisons of services provided. The same amount spent does not mean that identical health services are provided. Other factors such as the urban/rural mix, the age distribution, and the level of unionization of health workers may affect the way each province allocates its health dollars.

CIHI is a federally chartered but independent, not-for-profit organization that plays a critical role in the development of Canada's health information system. It brings together programs, functions and activities from the Hospital Medical Records Institute, The Management Information System Group, Health Canada (Health Information Division) and Statistics Canada (Health Statistics Division) under one roof. Among its core functions, CIHI is responsible for collecting, processing and maintaining data for a comprehensive and growing number of

health databases and registries, covering health human resources, health services and health expenditures.

Most ministries, health care facilities, health-related organizations and associations, the research community, as well as the private sector rely on CIHI to gather health-related data. CIHI is the most reliable source of up-to-date, accurate health-related data available in Canada.

National Health Expenditure estimates are compiled based on information from the following sources:

- Provincial Government Sector
- Federal Direct Sector
- Workers Compensation Boards
- Municipal Government
- Private Sector.

The other sources of information include Statistics Canada, OECD Health Data (a database prepared yearly by the OECD that permits for international health expenditure comparisons). Note that throughout this essay, all the data provided will be in real dollars (1986) unless otherwise specified. Political facts are drawn from the Canadian Political Almanac 1998.

[3] The OECD Health Data database, widely used for international comparisons is based on this same system.

3.2. Economic and Demographic Evolution

Government expenditures, as well as private expenditures are affected by the general economic and social situation prevailing in a given period. In order to make sound comparisons in provincial health care expenditures, it is essential to have a general understanding of the evolution of provincial economic indicators. This will provide some explanations of the different observations noted later.

Table 1: *Real Per Capita Provincial GDP*

(1986 constant dollars)

	1975	**1980**	**1985**	**1990**	**1998**
Nfld.	8036	8649	13271	14804	15051
PEI	8142	9242	14333	15947	17566
NS	9275	9834	16152	17221	17399
NB	9427	10250	14659	16100	17032
Que	12040	13634	18021	19477	19862
ON	14969	15680	22959	24174	24683
Man	12465	13265	19382	19981	21355
Sask	14617	15757	18023	19523	22565
Alta	19055	25163	25691	26186	29311
BC	14277	17051	20405	21865	21435

Provincial real GDP increased sharply in each province over the past twenty years. Note that the Atlantic Provinces have the lowest per capita GDP over the entire period while Alberta remains, by far, the richest province in terms of per capita GDP. The growth rate of GDP is also different in each province. Ontario, Manitoba, Saskatchewan, Alberta and British Columbia experienced greater growth of their GDP over the past two decades.

Table 2: *Per capita Total Provincial Government Expenditures*

(1986 constant dollars)

	1975	1980	1985	1990	1998
Nfld.	2752	4491	5185	5589	6019
PEI	3434	4871	4800	5183	5509
NS	3770	4175	4521	4705	4951
NB	3066	4392	4469	5040	5873
Que	2951	4976	5448	5546	6362
ON	3028	4508	4456	4506	4982
Man	2912	4551	5116	5427	5682
Ask	2770	4410	4756	5884	5766
Alta	2699	4200	4971	5806	5344
BC	2778	3277	3705	4618	5891

Table 2 represents per capita total provincial government expenditures excluding debt charges and services. Note that government expenditures are increasing throughout the period except for Saskatchewan and Alberta. These two provinces reduced their per capita expenditures in the period 1990-1998. According to these figures, the budget restrictions of the 1990s did not in fact reduce per capita expenditures. One explanation to this may be that in times of difficult economic conditions, social expenditures that cannot be avoided tend to increase. Hence, social security, health services, and employment insurance tend to be a greater burden, even when the other spending are reduced.

3.3. Total Health Expenditures

Many indicators can be used when evaluating expenditures of a country or province. Total and gross numbers give an order magnitude of total expenditures but provide little grounds for comparison. Moreover, different bases of comparison can lead to different conclusions as will be discussed later.

Over the past twenty years, provinces increased their health expenditures by a factor greater than 5. Health care is the sector of provincial expenditures that experienced the sharpest and most constant increase over the years. While other sectors experienced restraints, while economic downturns affected the economy and, despite great cuts in health expenditures, the health care sector remains the most expensive for provinces, apart from debt services.

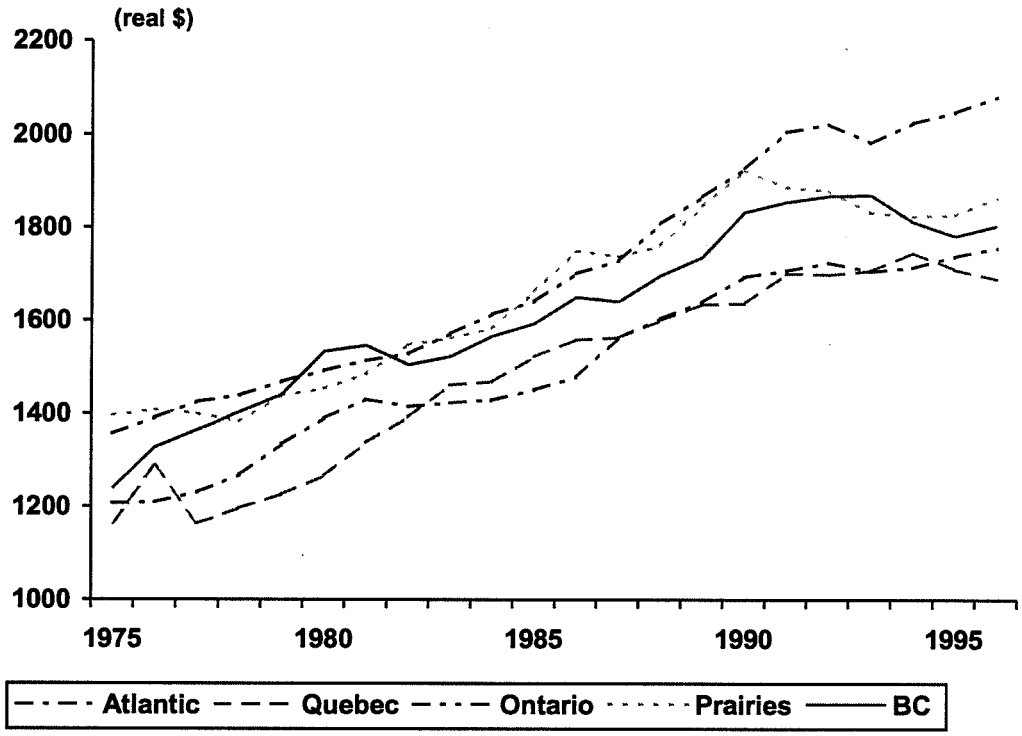
3.4. Per Capita Total Health Expenditures

Even though total expenditures can be useful to get a general idea of the magnitude of expenditures, it may lead to false conclusions if one does not take into account the size of the population – total expenditures do not permit for any useful comparisons. More descriptive analysis is necessary in order to evaluate more accurately disparities between provinces in health expenditures. As a first of several sets of observations, I now turn to per capita total health expenditures. These observations give a better sense of what amount is devoted, on average, for each individual for health services. Note in Figure 1 that over the past 20 years, provincial health expenditures followed similar patterns despite great

disparities among provinces. There is an overall increase over the past twenty years in every province, despite some decline in the Prairies and British Columbia in the 1990s.

In 1975, Alberta was the province spending the most per capita on health care with $1509 per habitant while New Brunswick spent the least with $1065 per habitant. In 1996, Ontario was spending the most ($2082 per person) and Quebec the least ($1689 per person). In 1975, the difference between the province spending the least and the one spending the most on health care in per capita terms was $444 per capita and in 1996, this difference was $393. New Brunswick is the province that experienced the greatest growth in per capita health care expenditures in the period, and Alberta went from the highest to third spender in 1996. Note as well, in Figure 1, the decline happening in the 1990s, reflecting budgetary restrictions in public expenditures. Despite the fact that all provinces increased health expenditures, there remain great differences among provinces in terms of per capita expenditures.

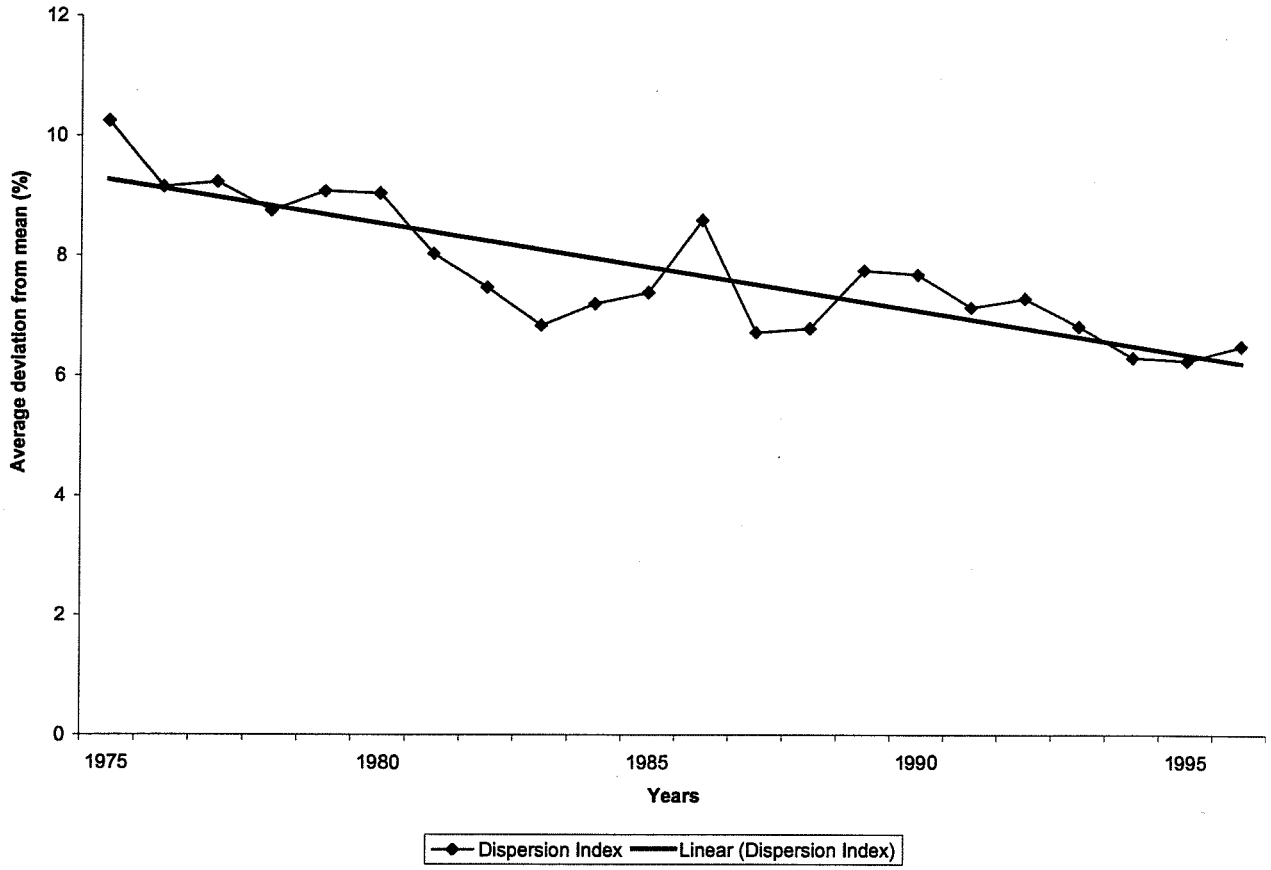
Figure 1: *Total Per Capita Health Expenditures*



The fact that great disparities in per capita health expenditures remain present despite equalization payments and the implementation of the Canada Health Act may be attributed to many factors. It is clear that western provinces spend more per capita than their eastern counterparts. Moreover, western provinces are, in general, richer than the Atlantic Provinces, according to per capita GDP as shown in Table 1. This may show that health services is a normal good and that health expenditures will be higher in regions where income is higher. The other factor explaining such a disparity may be that different provinces have different levels of productivity in the health sector. That is that similar services are provided throughout the country but that expenditure data cannot capture this

phenomenon. Finally, remuneration level of health care professionals varies considerably across provinces. For example, a nurse in Quebec will earn, in general, around $10,000 less than her Ontario counterpart (Canadian Nursing Association, Speech Delivered at 1999 Health Care Leadership Conference, Quebec City, June 6, 1999). This will thus affect health care expenditures as well.

Figure 2: *Dispersion Index – Per Capita Health Expenditures*



While gross observations permit us to make some inferences about a phenomenon, basic statistical tools permit greater accuracy in the analysis of the same observations. I now turn to the use of the Dispersion index as another, more rigorous measure of disparities. The Dispersion index is a more satisfactory way of measuring similarities and differences among provinces. This index neutralizes variation in the size of expenditures at a given time or in a given functional area, thus providing a comparable measure. Plotting the

Dispersion index over time and regressing the index on the year provides, in Figure 2, an indication of the degree to which the provinces have come to resemble one another in term of the presence in provincial economies. (Atkinson and Bierling, 1998). It is obtained by dividing the standard deviation across provinces by the national mean and multiplying the result by 100.[4]

The Dispersion index for per capita health care expenditures among provinces has been generally decreasing over the period studied even though we notice some periods of slight increases. This indicates convergence among provinces. Note however, that the Dispersion index remains quite high, above 6%, in the late 1990s, indicating that great disparities remain present.

Atkinson and Bierling have obtained similar, but stronger results in their study of expenditures in Canadian provinces. They found that health and education show a great degree of convergence while for other social spending, the results are not as significant. It is also important to note that different indicators may lead the observer to totally different conclusions.

[4] The unweighted means and standard deviations are used in the calculation of the Dispersion Index. Lower values of the index indicate relatively low levels of dispersion among the provinces. Some refer to the index as Coefficient of Variation, but in keeping in line with the work of Atkinson and Bierling, I refer to it as the Dispersion Index.

3.5. Health Expenditures and the Size of the Economy

Provincial health expenditures as a percentage of their respective Gross Domestic Products followed similar patterns in the past twenty years. The ratio slightly increased in the 1970s and 1980s and was reduced in the 1990s. The reduction in the 1990s is mainly due to budget restrictions at the provincial levels as well as at the federal level.

Table 3: *Provincial Health Expenditures as % of GDP*

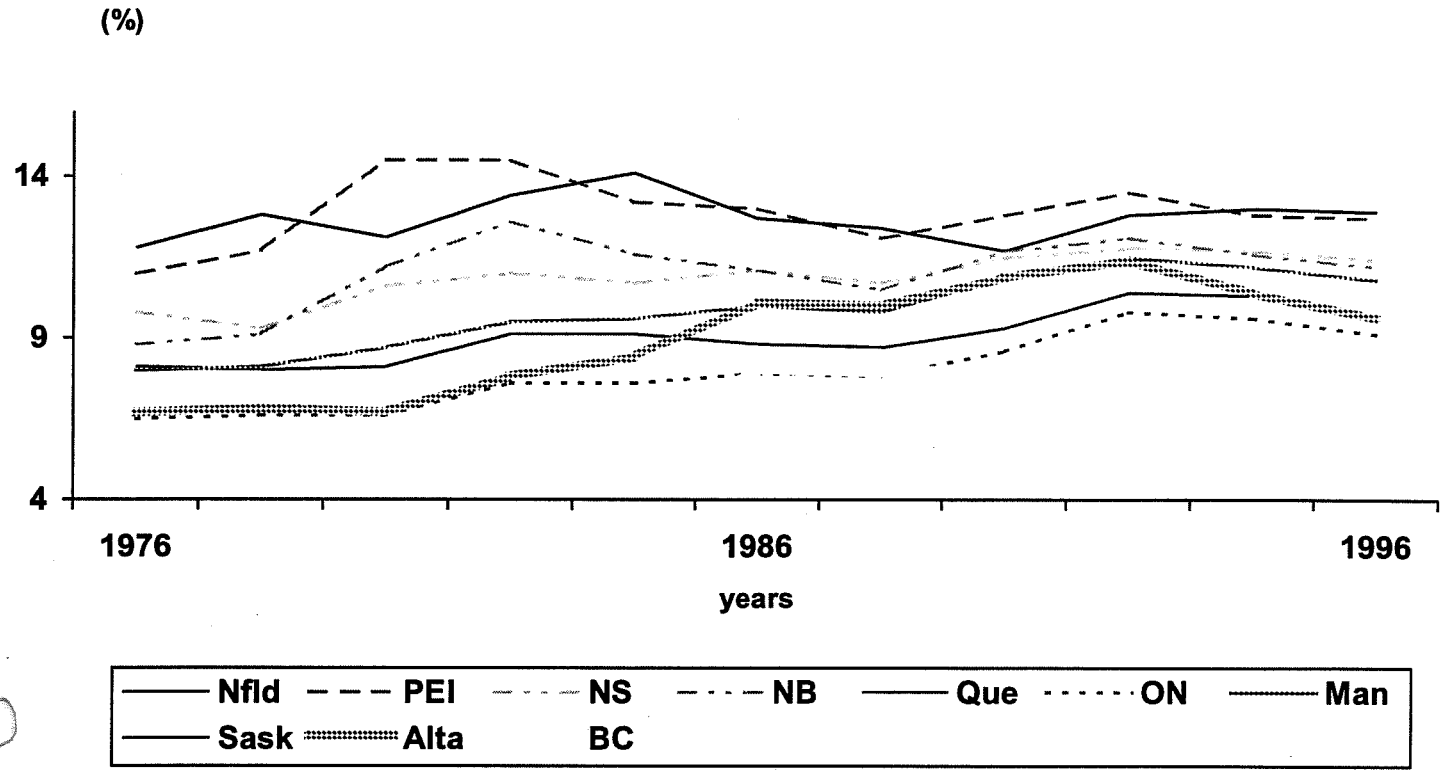
	1975	1980	1985	1990	1996	Max Ratio
Nfld.	11.8	13.3	12.3	12.8	12.9	1983
PEI	11.0	13.5	13	13.1	12.7	1982
NS	9.8	10.9	11.1	11.6	11.4	1987
NB	8.8	11.4	11.1	12.0	11.2	1982
Que	8.1	8.4	8.8	10.0	9.7	1989
ON	6.5	6.8	7.9	9.4	9.1	1992
Man	8.0	8.8	10.0	11.4	10.8	1992
Ask	6.7	6.7	10.1	11.3	9.6	1992
Alta	5.5	5.3	8.0	8.6	7.4	1992
BC	7.1	7.7	8.8	10.0	10.2	1996
Average	8.3	9.3	10.1	11.0	10.5	
Range	6.3	8.2	4.4	4.5	5.5	
Std Dev	2.03	2.85	1.76	1.47	1.67	

In Table 3 above, we notice that the range in provincial health expenditures as a share of provincial revenues is decreasing over time -- the standard deviation is decreasing -- while the national average of health care expenditures as a percentage of GDP increased by over 2% in the past 20 years. This is another indication that provinces are moving towards a similar point in the provision of health care, that is, the disparity in their spending is decreasing. However, provinces may seem to become increasingly similar because they all go through a "global crisis" – they all had to reduce their expenditures in the same fashion.

The total spending of provincial governments, relative to the size of their economies, became increasingly similar during the period studied. As the last column in Table 3 indicates, bigger spenders on health as a share of their revenues (Newfoundland for example) typically reached their peak levels earlier in the series, while provinces that spent less at the outset (Alberta as a case point) arrived at their highest levels at, or very near, the end of the period. Regardless of where the provinces reached their peak, the range and the standard deviation declined throughout the period, providing another indication of convergence in health expenditures.

However, there are still some great differences, especially between the Atlantic region and the other provinces. While Atlantic Provinces rarely spent less than 10% of their revenues on health, the other provinces rarely spent more than 10% of their GDP on the provision of health services. This may be explained by the fact that since they are smaller provinces, they cannot benefit as much from economies of scale present in the larger provinces like Ontario and Quebec. They are thus constrained to provide services similar to their counterparts as stipulated by the Canada Health Act. Atlantic Provinces spent the greatest part of their revenues on health in the 1980's while the other provinces did so in the late 1980's and early 1990's for the most part.

Figure 3: *Provincial Health Expenditures as % of GDP*

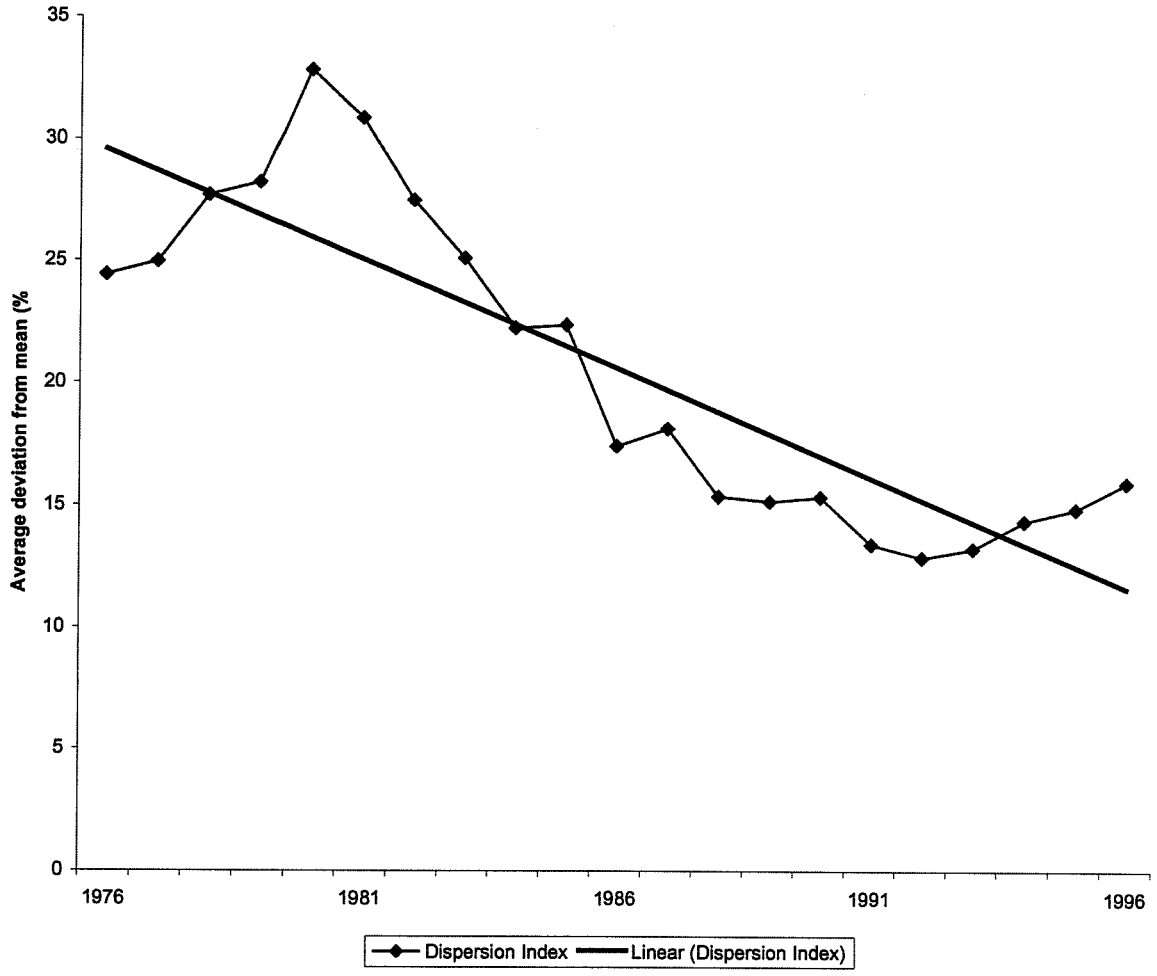


In 1975, Newfoundland was the province spending the most on health in terms of its provincial GDP (11.8%) while Alberta was spending the least (5.8%). This is not surprising given the fact that economic activity is much stronger in Alberta than in Newfoundland. In 1996, the same provinces were at the outset (12.9% and 7.4%) but the difference between these two provinces was reduced from 6.3% to 5.5%, a reduction of almost 1%. This reduction is rather small when compared to the 5.5% gap that still exists. However, if we do not take into account the Atlantic Provinces, the greatest gap between the "outsets" provinces

is only 3.4% of GDP, between Manitoba and British Columbia. The Atlantic provinces tend to spend more on health as a percentage of their income because they rely more heavily on federal transfer payments and, since they are smaller economies, the cannot benefit as much of economies of scale as larger provinces do.

While the share of provincial GDP devoted to health care increased on average by 2% between 1975 and 1996, this ratio remains much lower than what it is in the United States. The Canadian average for 1998 is forecast at 9.1%, including the three territories. Note that Canada spends about the same as the G-7 average on health as a share of its revenues. (*OECD Health Data*, 1998)

Figure 4: *Dispersion Index – Health Expenditures as a Share of GDP*



In Figure 4 above, we clearly see that the Dispersion index for health expenditures as a share of provincial GDP has been decreasing over the past 20 years, another sign that provinces are following similar paths in the provision of health services. However, we notice that the Index is decreasing until the early 1990s but starts increasing again since then. The increase in the disparities of

the 1990s may be attributed to budget cuts. These fiscal restrictions affected all the provinces, but in different years and to different degrees. Alberta and Ontario were among the first provinces to cut on health spending with the Klein and Rae governments. This explains, at least in parts, the greater disparities of the 1990s in terms of health expenditures as a share of total revenues.

3.6. Health Expenditures and Provincial Budget Expenditures

Table 4: *Health Expenditures as a Share of Total Expenditures*

	1975	1980	1985	1990	1996
Nfld.	36.1	37.2	34.9	33.1	33.0
PEI	36.1	40.4	42.3	31.5	34.9
NS	49.3	41.1	43.6	34.8	35.7
NB	33.9	36.8	38.7	37.1	37.7
Que	41.3	33.0	34.4	37.5	38.0
ON	43.9	45.4	49.1	45.4	46.0
Man	44.3	44.0	41.4	39.3	40.4
Ask	37.8	35.9	32.1	37.4	38.3
Alta	42.1	36.7	33.2	41.9	44.1
BC	44.9	47.4	45.5	45.8	47.5
Average	41.0	39.8	39.5	38.4	39.6
Std Dev	4.85	4.66	5.74	4.81	4.87

Looking at Table 4 and Figure 5 we see that provincial disparities seem more important when we look at health expenditures as a percentage of total provincial expenditures. Moreover, standard deviations are not decreasing over time, indicating constant or growing disparities. Eastern provinces spend less than the other provinces on health services when compared to total expenditures.

The evolution of this indicator through time seems to be rather stable in each province however.

In general, most provinces spend less or about the same amount on health today than in 1975, when compared to total provincial expenditures. Note that the ratio health care expenditures to total expenditures increased in the 1970s and 1980s but declined in the 1990s, reflecting public finance crises and budget cuts. However, so far, these observations are the ones that show the greatest disparities among provincial health care expenditures. In 1975, New Brunswick was spending 33.9% of its total budget expenditures on health care while British Columbia was spending 44.9%, a difference of 11%. By 1996, Newfoundland was spending 33% of its total expenditures on health care and British Columbia 47.7%, bringing the difference up to 14.5%.

Figure 5: *Health Expenditures as a % of Total Expenditures*

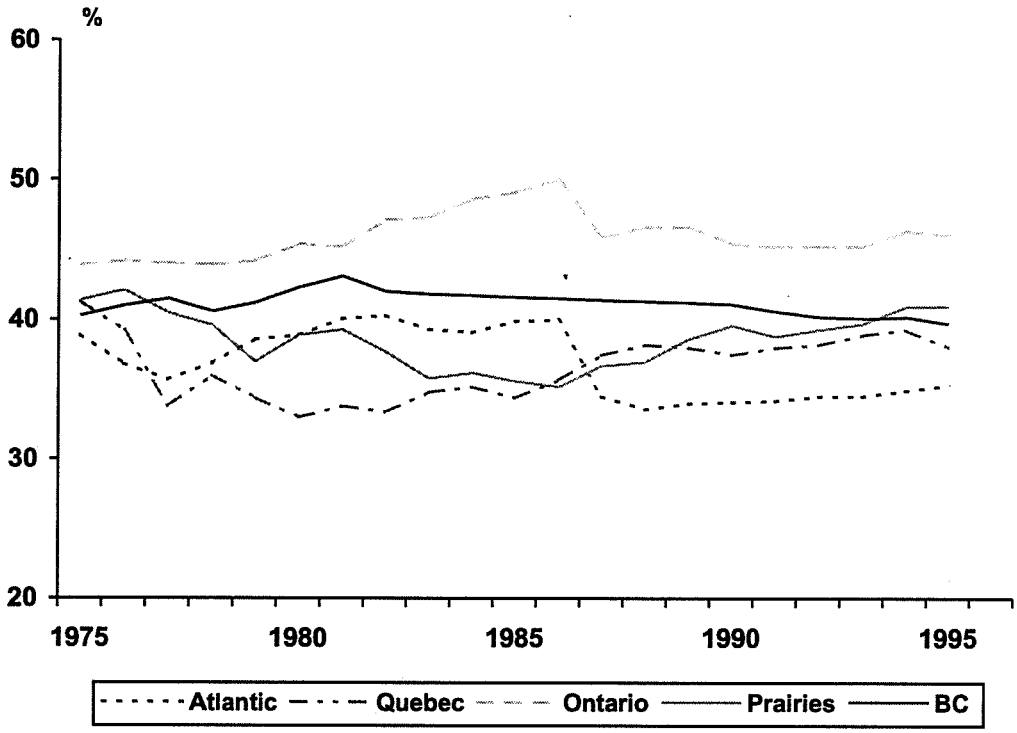
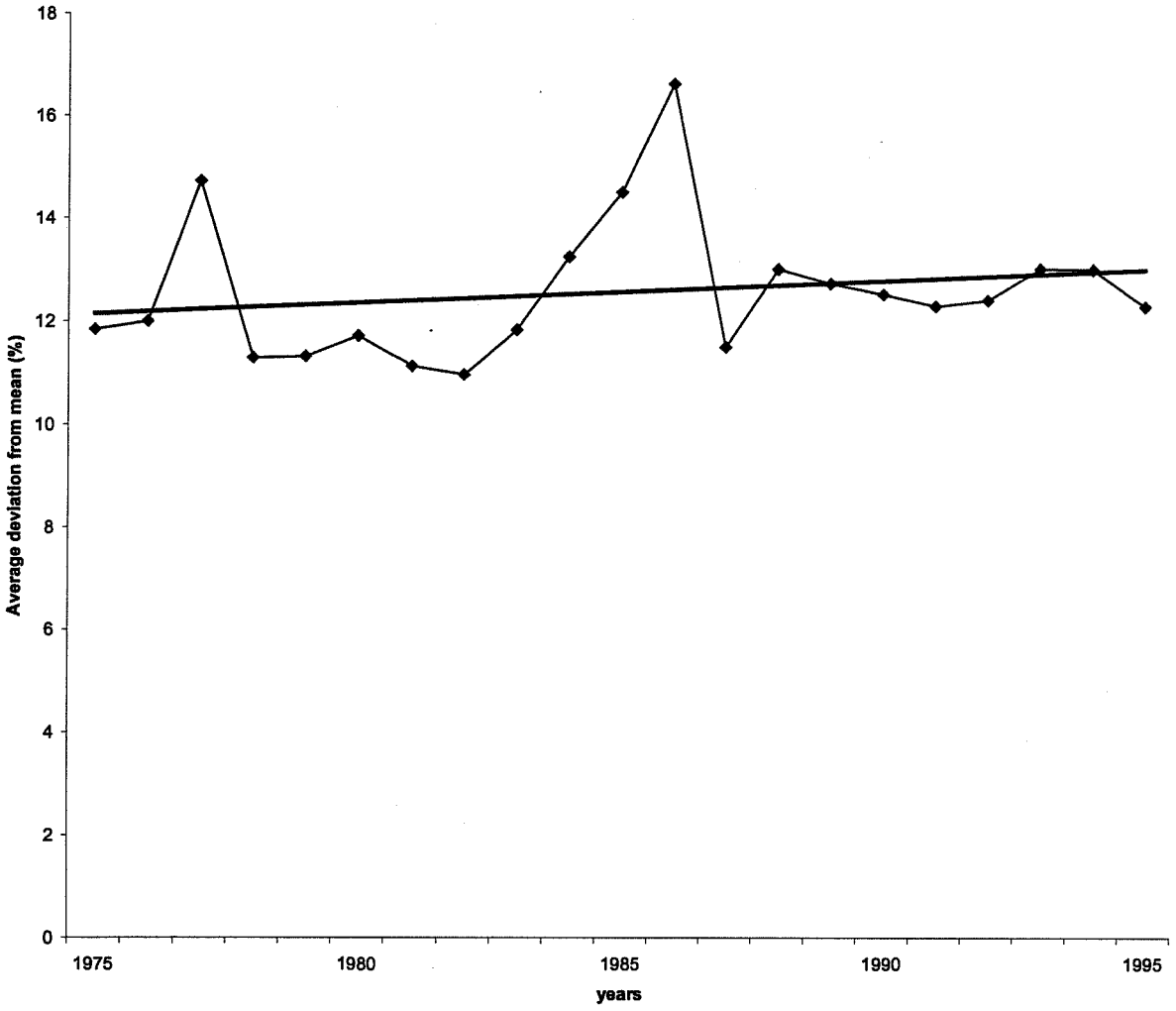


Figure 6: *Dispersion Index – Health Expenditures as a % of Total Expenditures*



As Figure 6 indicates, the disparity index for provincial health expenditures as a share of total expenditures remained fairly stable over the past 20 years, with a small increasing trend. The greatest variations in the disparity index occurred in the 1970s and 1980s to stabilize around 12% in the 1990s. This may indicate

constant and persisting disparities among provinces. However, as noted by Atkinson and Bierling (1998), it is also possible that a province, due to varying economic conditions, can vary its health expenditures while keeping its ratio to total expenditures unchanged. However, the 20-year period studied in this paper is not one unbroken pattern. In some cases, the provinces reverse their initial direction and become increasingly different from one another in the face of deteriorating economic conditions. Greater amounts devoted to debt servicing are certainly a reason for this reduction of health expenditures in terms of total budget expenditures.

Using simple graphs and dispersion indices, we have seen that the disparity between provinces has tended to decline after 1975. However, disparities remain quite large. Moreover, depending on the chosen indicator, results can be different. It is thus impossible to be conclusive about provinces becoming increasingly similar in their health spending patterns.

The income of a province, economic conditions, demographic variables, political ideologies, as well as federal transfers are factors affecting health care expenditures. It is an impossible task to capture the exact effect of all these factors, or even to identify all the possible influences on health care spending. However, one may venture in explaining some sources of variations by a more rigorous statistical methodology, as I do later in this essay.

4. Health Expenditures by Use of Funds

When one studies the evolution of health expenditures, total expenditures are not sufficient to capture the reality even though many conclusions can be drawn from aggregate or total expenditures. It is not possible to find the reasons for changes in spending patterns without knowing to what sectors the money goes and the amount that each sector receives.

The increases in health spending shown in the previous section all reflect growing provincial budgets, but how do different health areas fare relative to one another? That is as a percentage of total health spending. Health expenditures by use of funds is a step toward desegregation of data in order to evaluate what might be the causes of constantly increasing health care costs. It is also useful in the evaluation of provincial disparities to see if the provinces change their resource allocations in the same fashion. If they do so, it is an indication of growing similarities between provinces.

4.1. Evolution of Health Expenditures by Sectors

The *Canadian Institute for Health Information* differentiates between seven sectors of health expenditures. 'Hospital', 'Physician' and 'Drug' expenditures are common classifications. 'Other Institutions' are institutions providing health care that are not considered hospitals such as nursing homes, and residential

care facilities. The 'Other Professionals' category includes dentists, physiotherapists, eye care and other care providers that are not considered acute care and that are not included under the 'Physician' category. 'Capital' expenditures include hospital infrastructure, clinics, equipment and so on. And 'Other Health Expenditures' include home care, ambulance services, health promotion activities, as well as many other activities that are not included in the previous categories.[5]

Table 5: *Health Expenditures by Use of Funds – 1975*

(percentage of total)

	Hospitals	Other Inst	Physician	Other Prof.	Drugs	Capital	Others
Nfld.	43.8	6.6	10.1	4.9	16.3	10.9	7.3
PEI	41.3	13.4	11.0	7.2	16.7	2.4	8.0
NS	49.7	5.1	14.1	7.8	7.6	7.6	8.0
NB	49.5	6.9	11.6	7.4	9.4	9.3	5.9
Que	47.4	7.5	14.5	7.8	8.5	4.6	9.7
ON	44.2	11.0	15.9	9.2	8.3	3.7	7.7
Man	45.9	12.1	12.3	7.9	9.4	2.3	10.0
Ask	44.0	11.5	12.3	7.9	7.7	5.2	11.4
Alta	45.2	9.2	14.5	10.1	8.1	3.7	9.2
BC	39.8	7.6	18.0	12.1	9.8	3.8	9.0
Canada	45.0	9.2	15.0	8.9	8.8	4.4	8.8

Table 6: *Health Expenditures by Use of Funds – 1998*

(percentage of total)

	Hospitals	Other Inst	Physician	Other Prof.	Drugs	Capital	Others
Nfld	40.8	11.1	10.9	7.1	14.4	6.0	9.8
PEI	36.5	14.8	10.1	11.1	16.4	1.2	10.0
NS	38.5	13.6	12.7	9.3	16.1	1.1	8.7
NB	41.2	11.1	12.6	8.2	13.9	2.7	10.4
Que	37.4	9.0	12.7	10.9	14.5	3.6	12.1
ON	32.5	8.7	16.2	13.4	15.1	2.4	11.8
Man	34.4	12.6	10.7	10.2	13.8	1.5	16.8
Ask	28.1	14.7	12.2	8.6	12.4	5.3	18.7
Alta	30.4	11.8	11.7	12.6	12.9	1.4	19.2
BC	29.9	11.1	16.8	13.8	11.0	1.9	15.5
Canada	33.4	10.0	14.4	12.1	14.0	2.6	13.5

[5] For complete definitions of the Use of Funds, the reader is invited to refer to Appendix 1 of the paper.

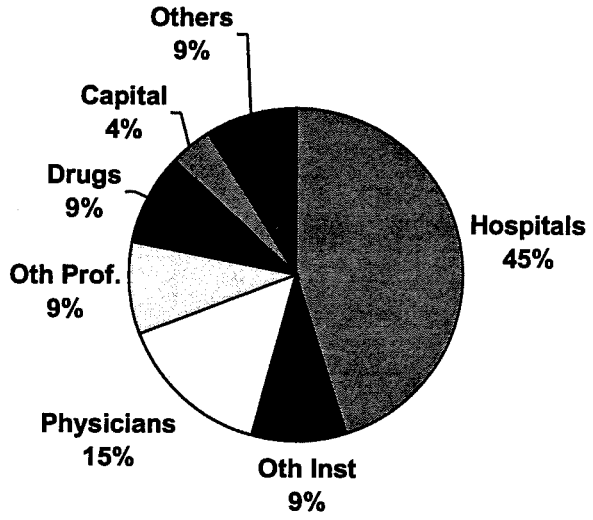
As is easily shown with Tables 5 and 6, the use of health expenditures in the provinces changed considerably in the past two decades. In 1975, over 40% (and almost half) of the sums devoted to health care were directed to hospitals. In 1998, the share devoted to hospitals varies between 30% and 40% of total health care expenditures while physician expenditures remained fairly stable over time. The greatest increase occurred in the 'Drugs' and 'Other Professionals' expenditures' categories, two types of services that, in a lot of cases, are not provided by public provision. In 1998, in Canada, 68% of drug expenditures were paid for by private sources and 90.2% of expenditures on other professionals (dentists, physiotherapists, and chiropractors) were privately funded (CIHI, National Health Expenditure Trends, 1998, p. 41). Note that only Newfoundland and Prince Edward Island kept a rather similar pattern of expenditures over the last twenty years.

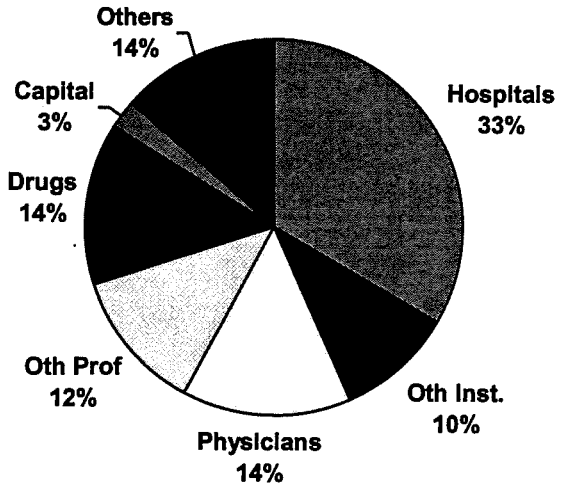
The tendencies observed in Canada are similar to what is observed in the OECD countries. In fact, for health expenditures described by source of funds, Canada is right on the OECD average (OECD Health Data). However, the United States devote more resources to acute care (hospitals) and for Drug expenditures whereas Other Expenditures (home care, prevention, education) accounts for a much lesser amount in terms of total health spending. It is also important to note that most of these countries, except United Kingdom, have a health system that is much more privatized than that of Canada.

Pie charts provide another way to show how the use of funds has changed over the past two decades. Figure 7 provides pie charts for the use of funds in health spending for the years 1975 and 1998. As can easily be noticed, the proportion of health funds allocated to hospitals declined sharply in the past twenty years while the share of total (public and private) health expenditures devoted to drugs and other professionals increased. This may be explained by the fact that in order to reduce their costs, hospitals discharge their patients more quickly than in the past. In that case, the drugs that were provided in hospitals now have to be provided otherwise. One example of this situation concerns women who deliver babies at the hospital; they are now discharged much more rapidly today than ten years ago. In fact, while in the past both the new born baby and the mother were required to stay at the hospital for at least three to four days, *The Globe and Mail* notes that in Toronto hospitals, most of the women and their babies are released within 24 hours. It notes (August 10, p. A2), however, that this increases the chances for the baby to return to the hospital with illness within three months of being released (*Early release of newborns linked to health problems*, The Globe and Mail, Tuesday August 10, 1999, pp. A1-A2). While the early discharge in these cases is supposed to lead to savings, it may in fact be the cause for greater and more complicated medical procedures in the long term. Moreover, the services of other professionals such as physiotherapists are also necessary but found outside the hospital system. These services are generally funded through private channels, which is consistent with the observation that the ratio of public to private expenditures decreased by 6.7% from 1975 to 1998.

Figure 7: *Health Expenditures by Use of Funds – Canada, 1975 & 1998*

1975 and 1998





Even though there has been serious changes in the distribution of health expenditures by use of funds in this period, these changes were similar in most provinces. This is another indication of reduced disparities in health systems across provinces since they tend to change provinces spending patterns in a same fashion. The use of Dispersion indices will give a clearer indication on this front.

4.2. Dispersion Index in the Use of Funds

Figure 8: *Hospital Expenditures Dispersion Index*

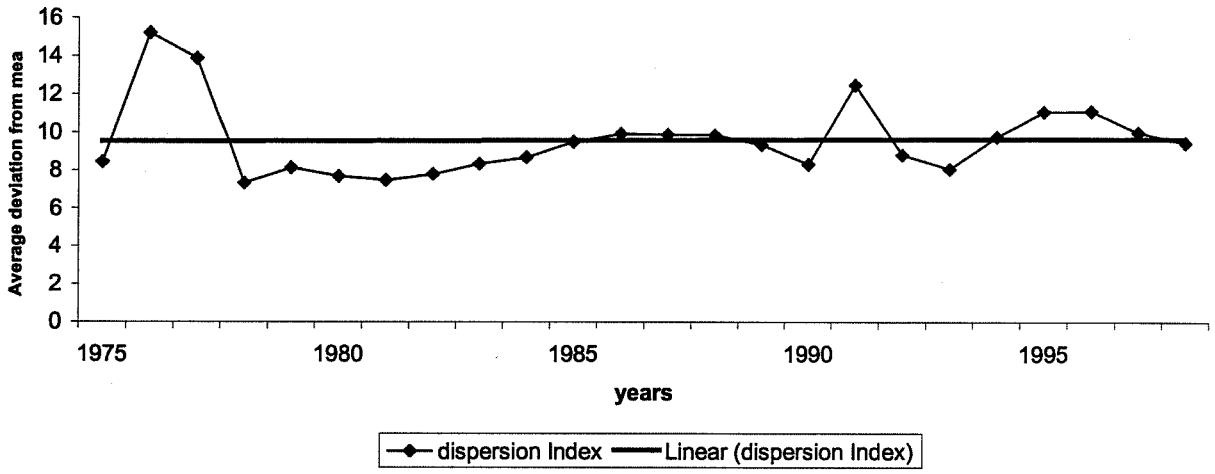
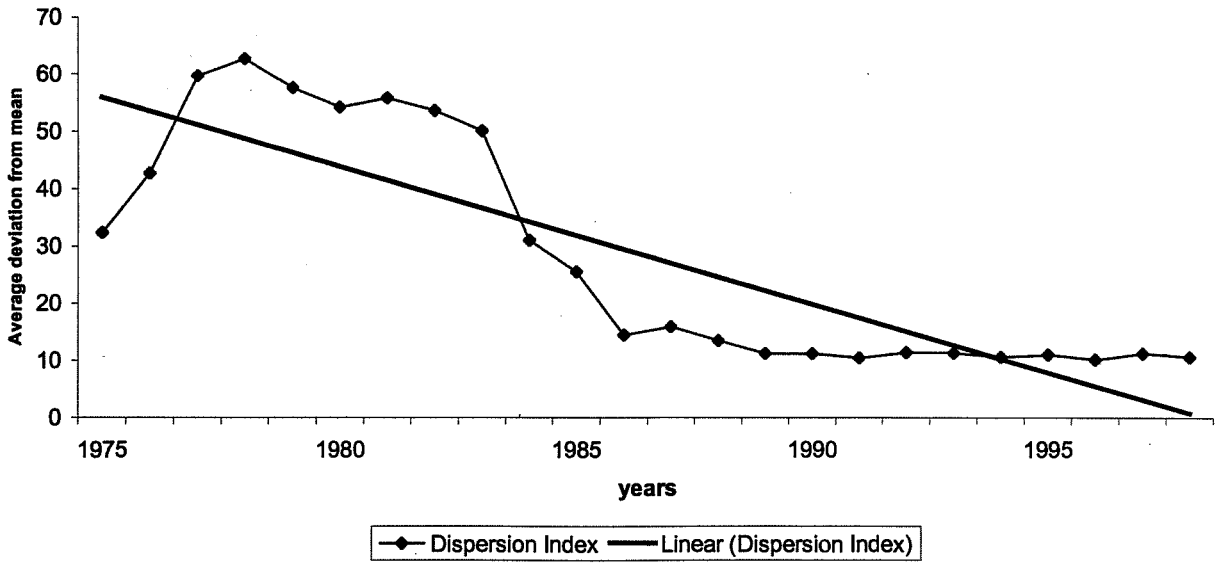


Figure 9: *Drug Expenditures Dispersion Index*



The two sectors of health expenditures that experienced the greatest changes are 'Hospital' and 'Drugs' expenditures. In Figures 9 and 10, we see that the Dispersion index for hospital expenditures remained fairly stable over the time while the one for drug expenditures declined sharply over the same period. This indicates, for hospital expenditures, that despite reduction in funds allocation, these changes have been similar across provinces and that disparities are similar to what they were twenty years ago.

For drug expenditures, the decline in the dispersion index means that the changes that occurred brought the provinces to a more similar level. Note that the expenditures on drugs went from a dispersion index of over 60% in the mid 1970's to around 10% in the 1990s. All provinces changed the weights granted to different health sector expenditures in a similar way. The dispersion indices for the two categories that experienced the greatest changes are stable (hospital expenditures) and declining (drug expenditures). These two facts are more indications that provinces are becoming increasingly alike in health care expenditures.

5. Model and Regression

5.1. Hypotheses

Health expenditures can vary considerably among the Canadian provinces as was shown in the previous sections. Many factors can determine provincial social and health expenditures. Economic conditions, political factors, demographic factors, as well as relations with other levels of governments will influence how a province allocates its resources.

Children under 5 years old and the elderly over 65 years old are the greatest consumers of health services. In 1996, the average expenditures on health care was around $1900 per person in Canada, while expenditures for children were in the order of $3500 and expenditures for people over 65 years old were around $8000 a year. We can thus expect, a priori, that the proportion of the population under 5 years old and over 65 years of age will have a significant effect on health expenditures. As the population is ageing, more resources are devoted to health care. The same is true regarding the population of children, but to a lesser extent since their health care services consumption is much smaller that the one for elders (Health Canada, Health Expenditures and Demographics, Internal document, 1998).

As was previously discussed, the income of a province can also be a determinant of health expenditures. If one believes that health care is a normal good, as

income increases health care demand and expenditures will increase accordingly. However, one may suggest that as income increases, the conditions of life improve and health care services are less demanded.

Even though health care is a provincial responsibility, the federal government, through the enforcement of the CHA and transfer payments, affects provincial expenditures. Provinces have to offer services that are based on the CHA requirements in order to obtain transfers from the federal government. Moreover, when the federal government changes its transfers to provinces, it directly affects the funds available for health services at the provincial level. The provinces then have to reallocate their money in order to offer the same level of services. One might expect that transfer payments would directly affect provincial health expenditures, especially in the Atlantic Provinces where these local economies rely heavily on the transfers from the federal government.

Political factors are also thought to be determinants of health expenditures. A priori, one would expect that liberals and new democrats would tend to spend more on social programs and health care. However, many political observers argue that the differences between right, centre, and left are vanishing in the Canadian political reality and that all the parties tend to implement similar types of policies once elected (Simeon and Miller, 1980). It is also of common knowledge to believe that during an election year, government expenditures (at

least visible) will increase. This is attributed to the desire of the government in power to seek re-election (Simeon and Miller, 1980, p. 256)

Health expenditures, as other any type of expenditures do not change over night and require time and efforts to evolve. For this reason, it is quite probable that the value of expenditures in a given year will be related to that of the previous periods. One last hypothesis of the model is that health expenditures at time t is also affected by the expenditures value at time t-1. As will be shown in the following section, including a LAG variable in the model permits to get rid of the autocorrelation problem in the data as well.

There are certainly other factors affecting health spending. It would be impossible to represent the reality by describing all the possible determinants of health expenditures however. In the following model, I propose to evaluate the above mentioned determinants in each provinces and in Canada as well as analyzing the differences between provinces.

The following model has been estimated for each province, with data for the years 1976 to 1996. Note that all the variables are calculated in logarithms, except for the dummy variables LIBERAL and ELECTION. This will permit for the coefficients to be interpreted as elasticities.

$$(1) HCEXP = \beta 1 + \beta 2 KID + \beta 3 OLD + \beta 4 GDP + \beta 5 TRANSFERS + \beta 6 LIBERAL + \beta 7 ELECTION + \beta 8 LAG$$

Where:

- β_1= intercept
- HCEXP = per capita gross health care expenditures;
- KID = proportion of the population under 5 years old;
- OLD = proportion of the population over 65 years old;
- GDP = per capita provincial GDP;
- TRANSFERS = per capita federal transfers for health;
- LIBERAL = (1 if liberal, new democrats or PQ; =0 otherwise);
- ELECTION = election year (=1 if election year; = 0 if not); and
- LAG = HCEXP at period t-1.

5.2. Results

Before estimating equation (1), I used a Dickey-Fuller procedure to test the stationarity of each series in order to ensure that there is no unit-root problem with the data. For each provincial time series, it is possible to reject the null hypothesis of unit root with a 5% level of significance. We can reject the null hypothesis of a unit root for the series used in this analysis since all the rhos lies between –1 and 1 as shown in table 7 below.

Table 7: *Rho Values of Dickey Fuller Test*

	KID	OLD	HCEXP	GDP	TRANSFER	LAG
Nfld	0.09	0.06	0.16	0.78	0.51	0.05
PEI	0.45	0.87	0.65	0.32	0.64	0.21
NS	-0.1	0.15	0.78	0.65	0.78	0.14
NB	0.05	0.04	0.06	0.12	0.36	0.53
Que	0.01	0.02	0.06	0.88	0.01	0.07
ON	0.16	0.25	0.36	0.77	0.12	0.03
Man	0.56	0.58	0.79	0.89	0.69	0.54
Sask	0.56	0.25	0.41	0.63	0.12	0.09
Alta	0.21	0.45	0.03	0.91	0.16	0.26
BC	0.36	0.09	0.52	0.69	0.03	0.15

The results of the regressions are obtained by running a regression of equation (1) for each provincial data set using a Generalized Least Square (GLS) procedure. The GLS procedure takes account of heteroscedasticity and autocorrelation problems that were identified in a first step using an Ordinary Least Square procedure to estimate equation (1). I also estimated equation (1) for the Canada wide data set with a pooled regression procedure, using dummy variables to represent the provinces. The results of the regressions are presented in Table 8.

Table 8: *GLS regression results by province, Pooled regression results for Canada – Time Period: 1975 – 1996; Dependent variable Total per Capita Health Expenditures*

	KID	OLD	GDP	Transfer	Liberal	Election	LAG	Intercept
Nfld.	0.53 (1.23)	1.27* (3.16)	0.36* (4.56)	1.98* (2.98)	0.23 (0.13)	0.69 (1.29)	2.28* (5.66)	36.96* (3.87)
PEI	1.28 (0.36)	0.98* (3.14)	0.87* (4.15)	1.36 (1.25)	0.69 (0.45)	0.46* (4.66)	3.36* (2.69)	23.15* (4.12)
NS	0.55 (2.09)	0.56* (2.97)	0.25* (4.44)	1.25* (2.96)	0.36 (0.99)	0.89 (2.03)	2.91* (4.22)	46.87* (3.56)
NB	0.32 (1.27)	1.03* (4.65)	0.65* (4.72)	0.65 (1.06)	0.39 (1.06)	0.87* (2.61)	3.21* (4.04)	12.36* (2.96)
Que	0.78 (1.56)	1.14* (3.44)	0.62* (4.62)	0.98* (3.03)	0.92 (1.23)	0.54 (2.01)	3.69* (3.51)	11.49* (3.21)
ON	-1.23 (1.28)	0.65* (2.74)	0.97* (4.82)	1.69 (0.59)	0.16* (2.65)	0.12* (4.32)	3.18* (5.14)	20.03* (5.69)
Man.	1.69 (0.65)	0.87* (3.06)	0.78* (3.95)	2.26 (0.64)	0.39* (3.01)	0.98* (3.51)	1.12* (5.63)	9.82* (3.84)
Sask.	-0.87 (1.05)	1.29* (3.66)	0.36* (5.02)	1.65 (0.91)	0.91* (3.63)	0.26* (3.07)	1.84* (3.57)	11.56* (3.06)
Alta.	0.56 (1.07)	2.75* (3.51)	0.45* (4.05)	0.84 (1.56)	A	0.11 (1.12)	1.53* (4.68)	8.79* (3.25)
BC	1.08 (1.26)	0.26* (3.67)	0.63* (4.18)	0.36 (1.93)	0.36 (1.08)	0.13* (2.85)	1.26* (4.08)	12.39* (2.99)
Canada	1.31 (0.98)	1.08* (3.09)	0.64* (4.06)	0.56* (3.64)	0.21* (2.93)	0.56* (3.10)	2.19* (4.11)	14.65* (3.51)

* Significant at 5% level (2-tail test); number in parentheses are t-statistics.

A) In Alberta, from 1975 to 1996, the only political party that formed majority governments was conservative. It is thus impossible to find a coefficient for this variable for Alberta.

Table 9: *R-squared and F Stats of the Regressions*

	R-sq	F-stat
Nfld	0.79	89.36
PEI	0.80	66.79
NS	0.89	78.69
NB	0.77	76.35
Que	0.63	98.61
ON	0.91	97.14
Man	0.90	88.26
Sask	0.95	65.46
Alta	0.97	97.65
BC	0.79	101.34
Pooled Canada	0.76	114.97

In order to show that the results of the regressions are efficient, several tests were applied. Results of the tests are presented in Table 10 below. In a first step, I tested for autocorrelation, a common problem in time series. Both the correlegrams and the Q-statistics[6] do not show presence of autocorrelation in the residuals. Note that by adding the LAG variable to the model already corrected for autocorrelation in the time series. Secondly, using the White's heteroscedasticity test, I was unable to reject the hypothesis of homoscedasticity. Note that the presence of heteroscedasticity does not make the estimates inconsistent but makes the computed standards errors invalid. In a third step, I tested for the normality of the residuals. I cannot reject the null hypothesis that the residuals are normally distributed using the Jaque-Bera statistics.

In order to test for the stability of the regressions, I used a Chow forecast test. A simple Chow stability test was not possible since the number of obsevations for the second period was not sufficient. As a structural break hypothesis, I used the

[6] The Q statistics is a test for the null hypothesis that there is no autocorrelation up to order k. Q is asymptotically distributed as a chi-square with degrees of freedom equal to the number of autocorrelations.

beginning of budgetary restrictions in government expenditures in 1990. It is possible, for all the regressions, to reject the null hypothesis of structural change in the health care expenditures before and after 1990. It is then possible to conclude that the regressions are stable.

Table 10: *Tests on the Regressions*

	Q-stat	White	J-B	Chow	Wald
Nfld	0.45	2.31	1.56	2.56	3.14
PEI	0.23	2.26	1.65	2.24	2.98
NS	0.56	2.45	1.49	2.06	3.13
NB	0.54	2.46	1.68	2.11	2.89
Que	0.26	2.56	1.79	2.36	2.79
ON	0.36	2.87	1.68	2.14	2.56
Man	0.29	2.10	1.95	2.89	1.79
Sask	0.47	2.11	2.06	2.04	2.36
Alta	0.56	1.98	2.13	1.94	2.26
BC	0.98	1.65	1.69	2.06	2.56
Pooled	0.46	2.03	1.68	1.09	2.79

As a last stage of the diagnostic tests performed on the estimations, I applied a Wald test for coefficient restrictions. More precisely, I was interested in the coefficients of LAG and the intercept. I performed a Wald test specified as follows: coefficient of LAG is equal to twenty and intercept is equal to three simultaneously. If the hypothesis cannot be rejected, it means that the most of the variation in health care expenditures is attributable to the past values of health care expenditures, or that most of the variation is explained by the constant, that is, the explanatory factors of the model are irrelevant. In each case (regressions), it is possible to reject the null hypotheses that $\beta_1 = 20$ and

that $\beta_8 = 3$. Hence, one can assume that the estimations of the coefficients is correct and that no further restrictions should be imposed to the model, based on these hypotheses.

Note finally, that with the Canadian pooled regression, dummy variables were used to denote each province. The t-ratios for these dummy variables were all significant at 5% significance level. The pooled regression thus produces results consistent with the provincial regressions since there are statistically significant differences among provinces in health expenditures. This means that differences in health expenditures can be explained by characteristics that exist within each province.

Referring to Table 8 above, we see that for all the provinces as well as for Canada as a whole, the variables OLD, GDP, LAG, and the intercept have statistically significant and positive coefficients. This is in accordance with the hypothesis that the proportion of the population over 65 years old affects health expenditures. As the population ages, the more health services are required and the more a province spends on health care. The results are also consistent with the hypothesis that health services are a normal good; that is the demand increases as the income increases. The income of a province, thus the economic vitality of the province is a determinant of health expenditures. However, these results can also be explained by the fact that when the income of a government increases, all its major expenditures will tend to increase as a

result of political and public pressures. The fact that the LAG value of health expenditures has statistically significant coefficients across all provinces was also expected. Health expenditures do not vary over night and social policies take time to evolve. It is thus normal that the previous period's expenditures affect the present. Note, however, that I also tried to include a lag value of second order in running the regressions. The results were not as significant in ten out of eleven cases, which leads to the conclusion that only one lag period is sufficient to run these regressions and obtain satisfying and conclusive results. Moreover, the fact that there is no autocorrelation problem is an indication that a lag value of order one is sufficient in this model.

The estimated coefficients on TRANSFER are statistically significant and positive only for Newfoundland, Nova Scotia, Quebec, and Canada as a whole. These results indicate that federal transfer payments for health have an effect on provincial health expenditures for these three provinces. An effect which is strong enough to come through the Canada wide regression as well. Clearly, Ottawa, through transfers, has a stronger effect on health spending of the Atlantic region than other provinces. These results are along the same lines as the findings of Atkinson and Bierling who argue that federal transfers to provinces have a limited impact on provincial spending decisions. Simeon and Miller, in their study of the period 1956-1974 argue that transfers had a great impact on provincial health spending. In fact, their statistical results show that the elasticity of total health expenditures to federal equalization payments is 6%. The results

found in the present study show that the elasticity of health expenditures to federal transfers is 0.56%. Note that their econometric methodology is quite different and that they use equalization payments and not total transfers to provinces. They however predicted that with the end of the cost-shared programs, the influence of Ottawa would be greatly reduced, a result that is supported by Atkinson and Bierling (1998). The results presented here presented here tell a different story. In fact, in light of these results, and increase of $1million in federal transfers to provinces would lead to an increase of over $500,000 in health expenditures, all things being equal.

The variable LIBERAL describes governments that are liberal or new democrat (except in Quebec where PQ was defined as liberal and liberal was defined as conservative). Its estimated coefficients were statistically significant only for Ontario, Manitoba, Saskatchewan, and Canada. This would provide ammunition for political analysts arguing that at a policy level, at least for health care, political ideologies are not very different anymore, at least for most provinces. However, only health expenditures have been studied in the present paper and health expenditures are given a great importance, no matter what type of government is in place.

The estimated coefficients of the variable controlling for election year were statistically significant for six provinces, Prince Edward Island, New Brunswick, Ontario, Manitoba, Saskatchewan and British Columbia, as well as for Canada

as a whole. This result lends some credence to the idea that health expenditures tend to increase in an election year.

6. Conclusions and Policy Implications

The present essay had as a main goal the evaluation of past and current disparities in health expenditures across provinces. In light of the indicators presented, it is obvious that differences remain between provinces. Moreover, the choice of indicator itself (health expenditures per capita, as a percentage of GDP, as a percentage of total expenditures) affects the results obtained. We then have to be very cautious in reading any conclusions that affect policy choices.

Although one cannot categorically assert that disparities among provincial health expenditures are decreasing, one may state that there has been a certain decline in health expenditure dispersion over the past twenty years. This suggests that provinces are becoming increasingly similar in the way they allocate resources to health care. Using dispersion indices, I showed that, for all the indicators, the dispersion index tends to drop as time goes by, and this occurs despite the many changes in federal-provincial fiscal relations that increased provincial autonomy.

The regression results also show that similar factors affect health expenditures in the provinces, but to a different degree, a conclusion that further supports the notion of declining disparities. The estimated coefficients that are statistically significant in all the provinces are on variables that will generally vary in the same fashion throughout the provinces. Hence, the ageing population and the

provincial income is generally evolving following similar patterns in all the provinces. The ageing of the population is a national and even international phenomenon. The income of a province is fluctuating with economic conditions, and is particularly sensitive to changes in the U.S. economy. We can then expect, all things being equal, that economic conditions and an increase in the proportion of the elder people will affect the health expenditures in a similar manner in all the provinces, if we assume similar age distributions across provinces. However, the Atlantic Provinces are more affected by transfers while Western provinces more affected by political factors.

Even though the ageing of the population is a global phenomenon, it remains a serious concern for health care policy makers. Since we know that in the next few decades the baby boomer generation will attain the age of retirement and will require an ever-increasing amount of health services, it is clear that total expenditures on health will have to increase if health care provision is to maintain its current standards. By the year 2020, the percentage of the population over 65 years old in Canada will be 18%, 6% higher than today (*United Nations Population Division's medium variance population projections*, United Nations, 1997, New York, Table 6). All things being equal, according to the results of the present analysis, this will necessitate an increase in health expenditures in the order of $2 billion to keep health services at their current level. With such a stress, providers will have to adapt. Both health service providers and policy makers are aware of this fact and are already trying to prepare to be able to meet

this increasing demand within the parameters established under the *Canada Health Act*. The decision that has to be made is whether to invest in building capacity now or wait until the problem becomes more acute and save money in the meantime.

In their last budgets, all the provinces increased health expenditures (Provincial budgets, 1999). One interesting fact is that all of them not only increased funding for acute care (hospitals, surgeries, and so on), but set aside funds for prevention, community care, home care and long term care. This is a clear indication that policy makers are thinking today about solutions to avoid tomorrow's problems. Not only do they want to increase the capacity to treat sick patients, but also they are trying to find ways to prevent illness as well as alternative means to treat, especially for the older population. Even the World Health Organization recently set up a new "Ageing Unit" that will promote healthy ageing through activities, prevention and research for new treatments. (World Health Organization website)

The fact that all the provinces decided to invest in health in a similar fashion and at the same time suggests that the disparities among provinces in health care spending will continue to be reduced despite the fact that they tended to increase in the early 1990s. This is with no doubt linked to the recent Social Union Framework Agreement (SUFA) where the provincial Premiers agreed to invest all the increase of CHST into health care for the next three years (Social Union

Agreement, 1998 Canadian Prime Ministers' Conference, Ottawa, February 1998). With SUFA, the provincial, territorial, and federal governments agreed to work in collaboration for new programs involving federal governments. This is an agreement that will prohibit the federal government to intervene in provincial jurisdiction powers without the consent of provinces. On the other hand, it also gives more leverage to the federal government to intervene in sectors where it is much required such as social policies.

Simeon and Miller hypothesized that the effect of increased federal government involvement in the fields of health, social services, and education, through equalization and shared-cost programs, helped reduce diversity among the provinces, at least in terms of expenditures. Convergence in these fields contrasts with areas of increasing dispersion, such as transportation and natural resources, where the federal government had a relatively small role (Simeon and Miller, 1980). They however forecasted that the end of cost sharing and the implementation of transfer schemes such as CHST would diminish the influence of Ottawa on provincial spending decisions.

> *The period since the mid-1970s has been one of significant change in federal-provincial fiscal relations. Much of the change has come at the hands of the federal government, which has recast the basis on which fiscal transfers are made from federal to provincial coffers. In the interests of limiting its own commitments the federal government, in 1977, began the process of substituting tax points for cash in several of its established transfer programs and the provinces have been increasingly obliged to use their own resources to finance health care, education, and social policy. On the other side of the equation, the federal government has found it increasingly difficult to insist on performance standards since the financial leverage of shared-cost programs has eroded significantly during this*

> *period. The introduction of the Canada Health and Social Transfer (CHST) in 1996 continued the process of disentangling federal commitments from provincial programs, particularly in the social welfare area where to receive their CHST funds the provinces need satisfy only one condition, namely not to impose a residency requirement. (...) The provinces are almost entirely free to allocate funds as they wish across spending categories* (Atkinson and Bierling, 1998, p. 78).

Atkinson and Bierling (1998) argue that with the implementation of the Canadian Health and Social Transfer (CHST), we will likely, in a more or less long term, see greater disparities appear in the provision of social programs among provinces. The view of the federal government is that the CHST gives more decision power to provinces, but allows the federal government for better direction of the money. From the results obtained in this essay, and from the events of the past year, these conclusions do not seem to apply to the health care sector.

In light of recent months' provincial and federal budgets, it is rather difficult to assess whether federal transfers for health will increase disparities among provinces since all the provinces acted in a similar fashion. Following what many have called a "health care crisis", federal and provincial governments have worked together to solve some of the problems as demonstrated by the Social Union Agreement of 1998 and similar measures in the last provincial budgets. In a few years, once data are available, it would be interesting to do similar comparisons in order to evaluate the effects of the recent discussions and agreements. Health data are to become increasingly available and of better quality in the near future with the development of CIHI and the desire and the

need of health care professionals to make better decisions. It would then be easier to assess the overall quality of our health system as well as to establish better indicators of disparity in health services provision. Moreover, building a model that would show the reverse effect – the effects of provincial decisions on the federal transfers could lead to interesting results as well.

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APPENDIX – Definitions

Health expenditure -- includes any type of expenditure for which the primary objective is to improve or prevent the deterioration of health status. This definition allows economic activities to be measured according to primary purpose and secondary effects. Activities that are undertaken with the direct purpose of improving or maintaining health are included. Other activities are not included, even though they may impact on health. For example, housing and income support policies have social welfare goals as their primary purpose and are not considered to be health expenditures, yet they are recognized as powerful factors in determining population health.

Uses of Funds

Hospitals – are institutions where patients are accommodated on the basis of medical need and are provided with continuing medical care and supporting diagnostic and therapeutic services. Hospitals are licensed or approved as hospitals by a provincial government, or are operated by the Government of Canada and include those providing acute care, extended and chronic care, rehabilitation and convalescent care, psychiatric care, as well as nursing stations or outpost hospitals.

Other institutions – include residential care types of facilities (for chronically ill or disabled, who reside at the institution more or less permanently) and which are approved, funded or licensed by provincial or territorial departments of health and/or social services. Residential care facilities include homes for the aged (including nursing homes), facilities for persons with physical disabilities, developmental delays, psychiatric disabilities, alcohol and drug problems, and facilities for emotionally disturbed children. Facilities solely of a custodial or domiciliary nature and facilities for transients or delinquents are excluded.

Physicians – expenditures include primarily professional fees paid provincial medical care insurance plans to physicians in private practice. Fees for services rendered in hospitals are included when paid directly to physicians by the plan. Also included are other forms of professional incomes (salaries, seasonal, capitation).

The physician expenditure category does not include remuneration of physicians on the payrolls of hospitals or public sector health agencies; these are included in the appropriate category, e.g., Hospitals or Other Health Spending.

Other Professionals – services, at the aggregate level represent expenditures for the services of privately practising dentists, denturists, chiropractors,

massage therapists, orthoptists, osteopaths, physiotherapists, podiatrists, psychologists, private duty nurses, and naturopaths.

Drugs – at the aggregate level, include expenditures on prescribed drugs and non-prescribed products purchased in retail stores. The drug category does not include drugs dispensed in hospitals and in other institutions.

Capital – includes expenditures on construction, machinery and equipment of hospitals, clinics, first-aid stations, and residential care facilities.

Other Health Spending – at the aggregate level includes expenditures on home care, medical transportation (ambulances), hearing aids, other appliances and prostheses, public health, prepayment administration, health research and miscellaneous health care.

Federal Transfers

They refer to the total of the various federal-provincial-territorial health financing arrangements, which include at various times the Canada Health and Social Transfer (CHST), the Canada Assistance Program (CAP); Established Programs Financing (EPF); the Health Research Fund which supported provincial capital health expenditures from the mid 1970s to the early 1980s; and transfers by the Department of Indian and Northern Affairs to the territorial governments for the medical care and hospital insurance plans on behalf of Aboriginal peoples.

Canada Health and Social Transfer (CHST) – on April 1, 1996 the CHST replaced federal transfers for social assistance under the Canada Assistance Plan (CAP), and for health and post secondary education under Established Program Financing (EPF). The CHST is a block fund provided in the form of both cash transfers and tax point transfers to all provinces in support of health, post-secondary education, social assistance and social service programs. Provinces may allocate the CHST to health and other social programs according to their particular priorities while upholding the criteria and conditions of the Canada Health Act. In 1996/1997 CHST transfers were allocated among the provinces in the same proportions as provincial entitlements under the combined EPF and CAP transfers in 1995/96. In the 1999 federal budget, these transfers were increased and they are now on the way to be distributed on an equal per capita basis.

Canada Health Act (Health Canada)

*The **Canada Health Act (CHA),** passed by Parliament in 1884, is the cornerstone of the Canadian health system, affirming the federal government's commitment to a universal, accessible, comprehensive, portable and publicly administered health insurance system. The **CHA** aims*

to ensure that all residents of Canada have access to necessary health care on a prepaid basis by establishing criteria and conditions for the provinces and territories to satisfy in order to qualify for their full share of federal transfers for health care services. The ***CHA*** *criteria are:*

1. ***Universality****: requires that all residents of the province be entitled to public health insurance.*
2. ***Accessibility****: requires reasonable access unimpeded by financial or other barriers to medically necessary hospital and physician services for residents, and reasonable compensation for both physicians and hospitals.*
3. ***Comprehensiveness****: requires that all medically necessary services provided by hospitals and doctors are insured.*
4. ***Portability****: requires that coverage be maintained as resident moves or travels within Canada or travels outside the country (coverage outside Canada is restricted to the coverage the resident has in his/her own province).*
5. ***Public Administration****: requires that the administration of the insurance plan of a province be carried out on a non-profit basis by public authority.*