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Municipal-Provincial Fiscal Balances in Alberta

by

Nick Leswick

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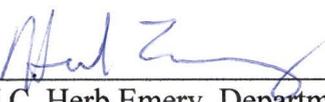
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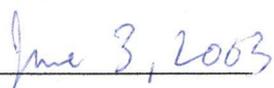
UNIVERSITY OF CALGARY  
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Municipal-Provincial Fiscal Balances in Alberta" submitted by Nicholas Leswick in partial fulfillment of the requirements for the degree of Master of Arts in Economics.

  
\_\_\_\_\_  
Supervisor, Dr. J.C. Herb Emery, Department of Economics

  
\_\_\_\_\_  
Dr. Ron Kneebone, Department of Economics

  
\_\_\_\_\_  
Dr. Stan Drabek, Department of Political Science

  
\_\_\_\_\_  
Date

## **Abstract**

One of the most intriguing arguments arising from the discussion of municipal fiscal challenges stems from the accusation that provincial governments are fiscally draining Canada's cities. Local governments cite fiscal drain as a reason why provincial governments should be responsible for curing the current municipal revenue squeeze. This study compares provincially collected taxes coming out of the cities of Calgary and Edmonton between 1990 and 2002 against the province's expenditures within those cities to provide insight into the municipal distribution of provincial government fiscal balances in Alberta. The fiscal balances for Calgary and Edmonton show that each city derived net fiscal benefits from the provincial government for each year between 1990 and 2002.

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## 1.0 Introduction

Discussion surrounding public finance is usually focused on government at the national or provincial level rather than the municipal. Lately, municipal issues have attracted more attention from policy analysts and policy makers as mayors of Canada's cities are becoming more vocal about the financial concerns of local governments that accompany current population growth, urban sprawl and the consequent increase in demand for city services and infrastructure. As Canadian cities remain reliant on property taxes for revenue, there is a perceived inability of municipal revenues to grow alongside the service demands created by economic expansion (Vander Ploeg 2001, Kitchen 2002). Canada's cities assert that they are suffering from fiscal imbalance, where local governments claim not to have enough revenue capacity to finance their spending responsibilities.

The proposed solutions for resolving the fiscal imbalance endured by cities is of two types: first, that cities receive larger unconditional transfers from the provincial government, and second, by "removing the shackles" and constitutionally granting cities greater taxation and spending powers (McKenzie and Kneebone 2002). Local governments assert that senior levels of government, with their ability to employ personal, corporate and sales taxes as revenue sources, are the real revenue beneficiaries of thriving urban economic communities while municipalities are left responsible for the costs of growth.

An intriguing argument arising from the discussion of municipal fiscal challenges stems from the accusation that provincial governments are fiscally draining Canada's cities which contributes to their fiscal imbalance. Local governments claim that citizens

who reside within urban borders are paying too much into provincial accounts and receiving too little in return. Cities cite provincial revenues garnered from city-citizens as evidence of “taking too much,” and cite current municipal fiscal challenges as evidence of “receiving too little.” Cities, in their attempt to strengthen their case for fiscal imbalance, claim that their revenue potential is being exploited by provincial and federal taxation initiatives. The City of Calgary (2003) cites that the City only received 7.2% of the total gross amount of taxes collected by governments from Calgarians in 1999, in comparison to the 29.7% collected by the provincial government and 63.1% collected federally. The Association of the Municipalities of Ontario summed up the problem succinctly, and while its data applies to Ontario, the general argument is currently being made nationwide.

*The 2001 average Ontario family total tax bill was \$36,497. The federal take was about 60%, the provincial share about 33% and municipalities got about 7%. Income taxes make up the largest single component of the average Ontario family's tax burden at almost 35%, followed by sales tax at about 18%. A typical family would pay about 6 times its property tax burden in income taxes and 3 times in sales tax (The Association of Municipalities of Ontario).*

Municipalities are demanding an end to the perceived fiscal imbalance induced municipal-provincial fiscal drain, and are calling for a greater share of total government tax revenues to help pay for local services.

Mayors, local media and other policy groups that make the case for cities present a lop-sided view of the province's fiscal agenda. Indeed, Canada's big cities comprise the largest percent of Canada's population, the vast majority of businesses, and consequently generate the bulk of federal and provincial tax revenue (Vander Ploeg 2001). However, the imposing statistics presented by the cities and their proponents fail to recognize the sizable amounts of municipally generated tax dollars that are returned to

cities via provincial government spending. There is a range of services within cities that are provided by the province. The reality of Canada's public finance environment is that although senior governments extract substantial sums of money from urban residents through taxes, those same dollars are arguably returned to cities via federal/provincial spending responsibilities and programs that are demanded by, and for the benefit of, city residents.

*At first glance, the data might seem one-sided. First, they fail to capture amounts being returned to cities via federal and provincial program spending. Quantifying these amounts could change our original conclusion that cities are losing, but it is also possible that it would strengthen our case (Vander Ploeg, 2001).*

To truly evaluate whether senior governments are fiscally draining cities, revenues accrued to such senior governments from cities have to be levied against their spending programs within these urban communities. This thesis will address this issue with a 'balance sheet approach' to investigate whether provincial governments are taking more out of cities than they are putting in.

This study will compare taxes collected by the Province of Alberta in the cities of Calgary and Edmonton between 1990 and 2002 against the provincial government's expenditures within those cities to provide insight into the municipal distribution of provincial government fiscal balances in Alberta. The results yielded by such an accounting approach will have important policy implications as to who should pay to cure the fiscal challenges currently endured by cities: provincial or local governments. On one hand, levying taxes versus spending could prove that cities are suffering a net fiscal drain at the hand of the provincial government and potentially strengthen the case for municipal fiscal imbalance – thus creating a strong platform whereby city

governments could lobby for the expansion of revenue options available to them. On the other hand, a balance sheet exercise could abruptly stop the argument that cities are losing and suggest that the range of services provided by the province are creating a net fiscal gain for the cities. By showing there is not fiscal drain, the case for fiscal imbalance weakens and consequently urges cities to remedy their revenue woes through the internal restructuring of “own-source” revenues. Either result provides insight into the effectiveness and environment in which Canadian cities are doing business.

Furthermore, results from the municipal distribution of provincial government fiscal balances to Calgary and Edmonton will cast light on an important political economic issue facing all Canadian provinces and their cities. The prevailing political structure has the local taxpayer paying for a range of services provided by the both the province and the municipalities. Current provincial legislation distributes revenue-generating tools based on the corresponding cost of service provision at the respective level of government. However, in their case for fiscal imbalance, cities are calling for an adjustment in how the tax dollar is disbursed amongst provincial and municipal governments by using the fiscal drain argument as a reason why the current distribution of revenues is inadequate. But if provinces were to transfer more revenue to the cities to compensate for the alleged fiscal drain, then provincial tax rates would consequently increase to cover their own revenue loss. Conversely, if local governments are wrong in their accusations that provinces are fiscally draining cities, municipal tax rates would have to rise to increase local revenues to pay for local services. As there is only one taxpayer who is the target of both municipal and provincial taxes, a provincially borne or municipally borne solution to the municipal fiscal imbalance problem does not spare city

residents from tax increases. Whether the following balances indicate a net fiscal gain or drain, the city taxpayer inevitably bears the cost of an increase in taxes at the municipal or provincial level. The question comes down to who is responsible for solving the revenue problems of cities: the city resident as a local taxpayer, or the city resident as a provincial taxpayer?

## 2.0 Literature Review

Vander Ploeg (2001) cites that city revenues have failed to keep pace with the growth in service and infrastructure demands induced by rapid population growth and urban sprawl. Consequently, many Canadian cities are apparently compromising urban needs in order to remain fiscally sustainable (Vander Ploeg 2002). Revenue needs inevitably have to be addressed for the good of urban economic diversification, stability and growth (Hum et al. 1986). Federal, provincial and municipal governments all have a vested interest to ensure Canada's cities remain economically vibrant.

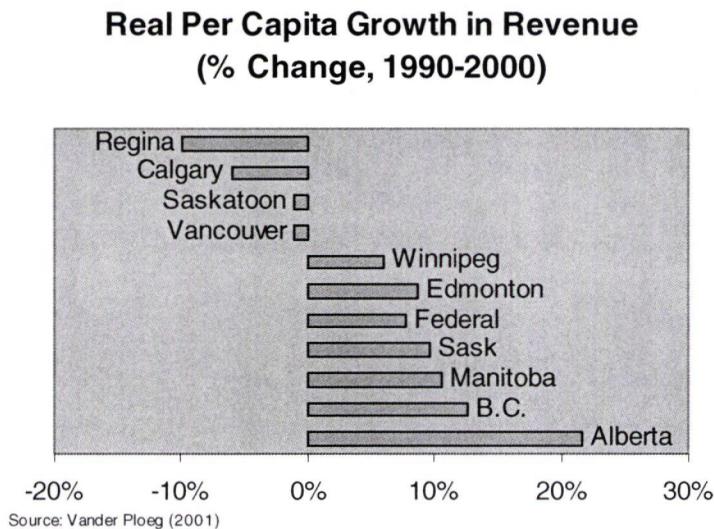
*If cities are continually underfunded - without the resources to finance critical investments in infrastructure and to deliver quality services at an affordable price – they will fail in the highly competitive global race to attract external investment. The result could be that the larger regional, provincial, and national economies will operate below their potential. More fundamentally, the potential itself will fail to grow (Vander Ploeg 2001).*

The unresolved question is which level of government should be responsible for a tax increase to alleviate the current fiscal challenges endured by cities? The dialogue on the issue is largely within the context of municipal and provincial politics. Cities identify the current provincial-municipal fiscal relationship as the cause of local problems. Although there exists a diverse opinion about potential policy solutions that could cure cities of their financial distress, cities increasingly argue that the provinces should pay more despite the lack of evidence to support that the provinces are at all responsible for municipal challenges.

As local governments work to secure increased financing from senior governments by citing fiscal drain at the hand of the province, they ignore the service responsibilities and cost of government at the provincial level. For example, a recent City of Calgary Presentation (2003) on their current financial condition, cities and their

proponents rarely acknowledge the province's spending within municipal boundaries. The presentation showed taxes extracted from the city by the province, but it fails to account for expenditures made in the city by the province. Vander Ploeg's (2001) evidence for the "fiscal drain" is the negative real per capita revenue growth for a majority of Western Canada's largest cities in combination with positive real per capita revenue growth for all Western Canadian provincial governments.

**Figure 1. Real Per Capita Growth in Revenue (% Change from 1990 to 2000)**



At first glance, these revenue statistics seem to assert that provinces are fiscally draining cities, but provincial expenditures within cities during the period have to be considered to adequately make the case that cities are losing.

Considerable urban finance commentary focuses on the state of direct transfers to cities, which comprise a small part of city and provincial budgets, and typically ignore the overall provincial spending program. Since 1990, senior governments have reduced their direct support for municipal governments due to the state of their own finances (Bird and Tassonyi 2002, Vander Ploeg 2001). Cities accuse provincial governments of

ignoring municipal finance concerns in favor of adopting deficit reduction and debt repayment programs (Bruce et al. 1997). Municipalities allegedly see their needs abandoned to suit the province's fiscal agenda (Vander Ploeg 2001). However, the reality is that provinces have spending commitments too, including debt reduction. As cities and city taxpayers have been left with more responsibility for financing their own spending, cities are warning that the increasing request for local services is unlikely to be met with the revenues generated by current local tax mechanisms. Without any increase in direct transfers from higher levels of government, cities contend that they are doomed for under provision of services and infrastructure (Vander Ploeg 2001, 2002; Wong 2002).

It is true that direct transfers to cities have been decreased in recent years, but it is difficult to identify the nature of the reductions that have taken place (Vander Ploeg 2001). For many cities the substantial drop in grants is partially or fully offset by the alleviation of expenditure responsibility (Vander Ploeg 2001). Provincial spending is balancing the decline in provincial grants - direct revenues are becoming a part of spending commitments inside cities. For example, consider that the City of Calgary received 50 million dollars of total provincial grants in 1993 (comprised of \$10 million in unconditional grants and \$40 million in conditional grants), and that the City had program expenditure responsibilities X (equals \$10 million) and Y (equals \$40 million). Now consider that responsibility Y was recently uploaded to the province and, consequently the \$40 million in conditional grant revenue that was to be designated for Y's administration is no longer part of City operating revenues. Proponents of cities would claim that the City of Calgary has just lost 80% of its total grant money in the last

decade and lost a proportional amount in operating revenue. Although true, this statement fails to describe the entire picture. This method is inaccurate because it fails to consider the destination of provincial government spending. Because the administration of program Y was uploaded to the province, accordingly, conditional grant money bound for Y has changed face and become provincial spending on program Y.

If the province is returning to cities via spending, what it extracts from cities via taxes, and to the extent that this spending will enhance the municipal tax bases, provincial spending within city boundaries is an “indirect transfer” to city budgets. Cities could take advantage of these indirect revenue sources rather than demanding greater direct transfers from the province to raise their own revenues. For example, the University of Calgary, a provincially funded institution, greatly enhances the economic vitality of the City of Calgary through the employment the institution provides and by the local purchases of goods and services made by the institution, its faculty and staff, students and visitors (University of Calgary 1998). Thus, the University of Calgary not only makes significant educational, social and cultural contributions to the city, it also contributes to municipal tax bases and municipal economic development.

*A multiplier effect occurs because recipients of the initial cash flow spend all or part of that income on local goods and services...the direct cash flow into the economy has an expanded effect on the total income of the region. The income multiplier [of the University of Calgary] in the Calgary region is estimated to be 1.7; that is, for every dollar of direct cash flow from the University's operations a total impact of \$1.70 can be assumed to work through the local economy in a one year period (University of Calgary 1998).*

The total impact of the University is almost three times the size of Government of Alberta grants to the University – a sizeable return on the government's investment (University of Calgary 2002). Thus, provincial spending can be considered an indirect

transfer to cities as it increases city incomes and consequently raises municipal tax bases. One of the questions I seek to answer is how large are these indirect transfers?

The pressure to find funding to increase local revenues for the provision of local services and infrastructure inevitably implies three alternatives: 1) the province transferring more direct taxation power or transfers to cities to broaden the tax base, 2) the cities increasing their local tax rates and user fees, or 3) either the province or the city incurring debt. The first alternative implies that provincial tax rates would have to increase to cover the provincial revenue shortfall caused by transferring tax revenues to the city. The second alternative implies that municipal tax rates would have to increase to pay for the cost of local services. The third alternative implies that either provincial or municipal tax rates would have to increase now and/or in the future to pay for higher debt servicing costs incurred by either government. Therefore, we are essentially looking at a political issue: which level of government has more capacity to raise their tax rates to cure municipal fiscal distress, the province or the cities?

*Much of the discussion over municipal financing revolves around increased revenue for city governments. Implicit in the discussion is that somewhere down the road there will be an increased level of taxation (Vander Ploeg 2002).*

Recent literature suggests that fiscal changes may have to be initiated by both local and provincial governments (Vander Ploeg 2002, Kitchen 2002).

The intergovernmental relationship that exists today between federal, provincial, and municipal bodies is founded on the division of powers defined by the Constitution Act, 1867. Since Confederation local governments have been mere “creatures of the province” (Emery 2002). Thus, municipal expenditure responsibilities and revenue generating options are defined and controlled by provincial legislation. Local

governments have been given a basket of revenue generating tools that include property taxes, business taxes, user fees, and license and permit fees. Municipalities argue that the tools available to them are restrictive, outdated, and unresponsive to current economic conditions.

*Income and consumption taxes, not property taxes, are a better reflection of ability to pay. Income taxes and consumption taxes as a share of total governments' revenue grew 15% and 22% respectively from 1997/98 to 2001/2002. Property taxes grew in the same period by only 6.2% - clearly not as responsive a revenue source (The Association of Ontario Municipalities 2003).*

Cities are arguing for legal access to one or more consumption based taxes or other means of taxation that coincides directly with the nature of economic activity within the city (Kneebone and McKenzie 2002, Kitchen 2002). Direct access to new tax sources, such as municipal income taxes, and consumption based taxes such as a sales tax, hotel/motel occupancy tax, or a municipal fuel tax would make it easier for municipalities to remain fiscally sustainable and economically vibrant (Kitchen 2000, 2002). Municipal income taxation has recently been used in Manitoba, where municipalities receive per capita unconditional grants from the province with the annual grant based on the amount of revenue generated from two percentage points of the provincial personal income tax base and one percentage point of the corporate income tax. British Columbia municipalities, under the Hotel Room Tax Act, as well as Manitoba's cities currently employ an occupancy tax on all hotel and motel accommodations (Kitchen 2002). Gas taxes are more widely used – Vancouver, Victoria, Montreal, Calgary, and Edmonton have all adopted municipally levied fuel taxes that have them see a percentage of the value on every liter. But provinces are reluctant to grant cities any sort of autonomous taxation privileges out of provincial governance. Wong (2002) notes that in October 2002, the

Alberta government unilaterally cut the cities' share of the fuel tax from the mutually agreed upon five cents per liter to 4.25 cents. This was further reduced to 1.2 cents on March 20, 2002, then restored to five cents two days later. The flip-flop in fuel taxes shows how unstable these revenues are for the municipal government. Consequently, cities are demanding greater governance powers so as to expand the range of instruments for meeting their social and economic policy objectives.

Although the cities argue to a broader range of tax bases, municipalities neglect to acknowledge that there is only one taxpayer; one citizen is the target of three level of public taxation. Vertical fiscal externalities result when different levels of government access the same tax base. As such, the tax choices of one level of government can affect the choices of the other level of government by affecting the size of the tax base (Kneebone and McKenzie 2002). Thus, if local governments were to gain more taxation power, it would consequently cast a negative externality on all other governments by giving them less taxation power. If provinces were to concede tax privileges to local governments, provinces would put themselves at a revenue loss and would have to increase provincial tax rates as compensation. The city taxpayer is not spared under a provincially borne solution to local service demands.

Why should the province be responsible for solving the fiscal problems of cities? First, cities could benefit from tax instruments in addition to property taxes and user fees. Cities claim that much of the failure of revenues to keep pace with growth can be explained by the fact that their tax base is limited to the property tax which links only one aspect of the economy – real estate (Vander Ploeg 2002). The continued reliance on the property tax is widely criticized on the grounds that it is unrelated to ability to pay and is

considered regressive (Bird and Slack, 1993). However, cities are criticized in how they apply the property tax. There is a current practice of imposing higher tax rates on non-residential properties compared to residential properties. It is claimed that the residential sector is the recipient of proportionally more benefits from local governments services (libraries, recreational facilities, etc...) than the non-residential sector (Kitchen 2002, Kitchen and Slack 1993). Evidently, there is no clear link between the cost of service consumed and payment for it by the beneficiary of the service. The same argument is being applied to user fees, as critics of urban finance argue that individual users of city services do not pay the actual costs of providing these services (Kitchen 2002). Under the present system there is little accountability as people who consume fewer services are implicitly subsidizing those who are consuming more (Vander Ploeg 2002). If cities themselves corrected the way in which they do business, by properly associating price and cost, then cities could reduce some of the expenditure strain caused by over consumption. Any correction in local service provision inevitably suggests higher municipal tax rates and user fees – not an attractive alternative for local governments and the citizens who vote for them.

Second, cities are constrained in their use of debt. Legislation dictates that cities are not allowed to assume debt for operating expenditures, but are allowed to borrow to fund capital expenditures with provincial approval. If a municipality does assume debt to fund a capital project, the payment of that debt and its interest comes from subsequent operating budgets (Berdahl 2000). But it is interesting to note that most cities are nowhere near their allowed borrowing limits. Thus, they have considerable room to borrow at a time when they are demanding more money from the provinces. The City of

Edmonton (2003) boasts that by the end of the year 2005, Edmonton will be free of tax-supported debt. Meanwhile, they claim that they are cash-strapped to pay for local services.

Municipalities have kept as close as possible to pursuing “pay-as-you-go” policies for financing capital and other expenses by building a cushion with their operating budgets and ensuring that their revenues grow faster than spending, thereby drawing on reserves or accumulated surpluses in other funds (internal financing) and avoiding debt (external financing) (Vander Ploeg 2001). In essence, cities have in recent times shown that they are averse to assuming external debt.

*Most cities in Western Canada share one common feature – they seem to have acquired a mutual distaste for borrowing (Vander Ploeg 2001).*

Bird and Tassonyi (2002) ask why don't municipalities borrow more? The authors note that amidst a well-developed capital market, local governments with good credit ratings do not borrow as much as they can. Although there is no apparent deterrent to raising money in either domestic or foreign bond markets, it appears that past municipal debt crises have shifted cities attention away from using borrowed funds and more in line with endorsing pay-as-you-go policies (Emery 2002). Canada's municipalities are nowhere near their respective debt limits and are carrying a large unused borrowing capacity (Bird and Tassonyi 2002). Vander Ploeg (2001) shows that throughout the 1990's, Western Canadian cities did not appear to run deficits, and aside from three deficits incurred by Saskatoon and Winnipeg, all cities reported surpluses every year in significant amounts. The provincial-municipal regulatory framework has changed to enhance Canadian cities' connection with the capital market (Bird and Tassonyi 2002). The option of debt

financing is becoming increasingly available to cities, but local governments do not seem willing to engage in capital markets.

Between provincial governments conceding increased taxation powers to cities, or cities themselves raising tax rates or debt loads, it is unclear which government has more capacity to pay to cure local finance problems. In their bid to secure increased financing from the province, the cities sell the province as the solution to municipal problems without acknowledging that this does not spare city residents from tax increases. Any enhancement in municipal taxation privileges or direct transfers coming from the province would mean higher provincial taxes to avail any consequent revenue shortfalls. Fixing municipal 'own-source' mechanisms or incurring city financed debt loads inevitably means higher user fees and property taxes to properly associate price and cost or pay interest on the debt. Whether our cities' fiscal imbalances are fixed by either municipal or provincial tax increases, either way the city taxpayer will be expected to pay more. Although both cities and provinces could initiate fiscal changes to help urban fiscal imbalances, the following balance sheet exercise should indicate where we should look to first.

### 3.0 Methodology and Data

The balance sheet approach has been widely used in previous public finance research to investigate the redistribution of fiscal balances – but not at the municipal-provincial level. Such economic arguments have gained importance at the federal level and been dubbed: “The Battle of the Balance Sheets”. The 1970s sparked the most interesting focus in terms of such arguments (Leslie and Simeon 1977). During that period, Parti-Quebecois (PQ) leadership and supporters, to gain support for a separatist movement, sought to convince Quebec that they were “losing out” in terms the economic benefits garnered from Confederation (similar to the plea of cities in their relationship with the province). With the release of the 220-page *Economic Accounts of Quebec*, Quebec politicians rallied around their publication’s opinion that Ottawa was responsible for the economic recession that had restrained the province in recent years. The minister responsible for the Accounts stated that between 1961 and 1975 the federal government had taken a surplus of \$4.3 billion from the province, representing the excess of Quebecers’ taxes over federal spending (claiming net fiscal drain). In response to the Accounts, the federal government cited numerous accounting discrepancies and accused the PQ of misusing and misinterpreting important information. Ottawa claimed that the Accounts failed to appropriate for a large portion of Quebec’s share in federal services such as defense, external affairs, foreign aid, and other federal responsibilities that benefited the people of Quebec. By properly allocating federal expenditures that are ultimately profitable for all Canadians, including those residing in Quebec, Ottawa claimed that federal spending within Quebec far outweighed federal taxation. Under the federal account, the PQ’s Economic Accounts were incomplete.

Dissension over the division of powers resonates beyond the federal-provincial intergovernmental relationship into municipal-provincial politics. Whenever subordinate governments and the taxpayers within their jurisdiction perceive they are paying more in taxes than receiving in services, debate ensues. Government involvement in economic activity has become so important that it has led to inquiries into how the costs and benefits flowing from government budgets are distributed among various groups of citizens (C.D. Howe 1977). Controversy can be resolved by engaging in the 'battle of the balance sheets' to accurately account for senior government collection and distribution of taxes and spending. The municipal impact of the provincial government's economic activity can be measured by studying the breakdown of its receipts and expenditures. Essentially, the balance sheet approach requires a concise data adjustment exercise to account for specific taxes and spending benefits accrued to municipalities and their citizens. The exercise in this study tries to answer the following question: Does the activity of the provincial government cause funds to move in or out of the cities?

The above historical account also casts light on the sensitivity of the balance sheet accounting exercise, specifically demonstrating how contrasting conclusions can arise based on the application of varying assumptions. An analyst who undertakes to assign the benefits and costs arising from senior government budgets must rely on certain methodological hypotheses. Literature concerning the topic of redistribution of fiscal balances exemplifies the variance of assumptions across authors; Banks (1977), C.D. Howe (1977), Di Matteo (1999), Glynn (1979), McCracken (1993), Horry and Walker (1994), Mansell and Schlenker (1995), Ruggeri and Yu (2000), Whalley and Trela

(1986). Lessons and assumptions from the applied methodologies of these studies can be transferred to balances at the municipal-provincial level.

There are two ways of computing fiscal balances: the cash-flow approach and the benefits approach. Balance sheet studies differ based on their particular application of these respective approaches. The benefits approach focuses on the residence of those who receive the benefits of government services and make contributions for their financing. Gains equivalent to the amount spent in rendering a service are assigned to the person who enjoys the benefits of the service. Similarly, a loss equivalent to the sums paid out in taxes is charged to the person.

The cash flow approach identifies payments according to the location of purchase of goods or services or residence of transfer receipts. This approach is based on the place where taxes and disbursements are paid. A city is then said to bear a loss equivalent to the sum of taxes collected from its residents, and to enjoy benefits equivalent to the amount of money spent by the provincial government within city boundaries (C.D.Howe 1977).

The difference between each approach can be illustrated by the following example.<sup>1</sup> If the provincial government collected \$100 million in revenues from the City of Calgary and used it to build \$100 million worth of roadway between Calgary and Lethbridge, the cash flow approach would show a transfer of \$100 million out of Calgary (-\$100 million). With the benefits approach, the expenditure of \$100 million would be viewed as producing consumption (or transportation) benefits of this amount, and some portion of these would be credited back to the City of Calgary. If this was the only

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<sup>1</sup> Example adopted from Mansell and Schlenker (1995).

transaction and Calgary comprised 30% of the provincial population, the benefits approach would show a balance of -\$70 million for Calgary.

The above example illustrates how the two methods highlight different aspects of the relationship between municipal residents and the provincial government. The benefits approach considers the provincial government as a supplier of goods and services.<sup>2</sup> It aims at measuring the value of provincially provided goods and services the city resident consumes in relation to his provincial taxes paid out. Generally, this method attempts to discover whether the sum of all goods and services received by city citizens from the province is greater than, or less than what city citizens contribute in taxes.

In comparison, the cash-flow approach looks at the provincial government as a buyer of goods and services from the cities. The question then becomes: Are the amounts paid out by the provincial government to the municipalities from capital purchases, wages and salaries, and direct transfers greater than, or less than the tax revenue it derives from the city in question?

The choice to use a respective approach has implications on the outcome of the balances. The preference to use a given approach varies across authors. Mansell and Schlenker (1995) use the cash flow approach, Horry and Walker (1994) a benefits model, while Ruggeri and Yu (2000) employ a hybrid of the two models they call the aggregate transfer approach. There is no consensus over which approach should or should not be used, as one method is not necessarily better than the other method. The decision to choose either the cash-flow approach or the benefits approach should revolve around the characteristics of the data.

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<sup>2</sup> The following explanation of benefits and cash-flow approaches was introduced in C.D. Howe (1977).

To use the cash-flow approach in calculating the municipal distribution of provincial fiscal balances, an analyst has to know in which city provincial spending is paid or received. Theoretically, he could find this out by analyzing publicly produced statistical information that clearly distributes taxes paid out and spending received by cities. In practice, it is difficult to obtain the necessary information. First, much of the data does not designate expenditures by destination. Second, some provincial spending is made on services, such as transportation infrastructure, that are indivisible by nature. In the first case, the benefits approach is used to estimate what components of provincial spending can not be accounted for dollar-for-dollar because of data deficiencies – to estimate in lieu of the cash flow approach. In the second case, the benefits approach uses various estimation techniques to approximate who receives the benefits of provincial spending because the ultimate benefits rests on consumption that is subjective and unobservable. In either case, the benefits approach is used to allocate provincial spending across the provincial population.

Following the course of federal-provincial balance literature, one could apply the benefits approach in two different ways: either in proportion to the city's share of provincial income, or according to the municipal distribution of provincial population. For example, suppose the Province of Alberta spent \$100 million of transportation infrastructure in 2002, and suppose that the City of Calgary represented 30% of the provincial population in the same year. One method suggests that Calgary's share of Alberta's population can be used to estimate the benefits the City reaps from the Province's transportation activities: \$30 million. The other method suggests that Calgary residents share benefits in transportation financing according to their share in total

provincial tax receipts – they pay more therefore they consume more. Thus, if Calgarians contributed 33% of provincial tax collections, then they would reap \$33 million in provincial transportation spending. According to these calculations, the difference between benefits and costs to Calgarians is a balance of \$3 million. The point made here is that some consumption estimates yield lower or higher benefits values than other consumption estimates. The gross debate that usually follows balance sheet exercises and the ultimate merit of one's balances spawn from the sensitivity in applying these types of assumptions.

Either method of estimating provincial expenditures exemplified above presupposes that transportation spending is equally useful to each Albertan. While this is a generally accepted approach in the literature, it conceals a number of assumptions which may not be generally acceptable, particularly in the context of the regional disparities debate (Banks 1977). Residents in different regions within the province may disagree on the relative benefits they receive from particular indivisible expenditures such as transportation infrastructure. It is acknowledged that some Albertans benefit from Highway 2, connecting Calgary and Edmonton, more than others. Not only will the initial investment expenditure affect aggregate demand in a particular region or city, but private incentives will be changed, affecting investment decisions for many years in the future (Banks 1977). Unfortunately, such sensitive estimation procedures have to be used to accommodate for the structure of the data. If we accept the assumptions, we must do so on the faith that the necessary underlying adjustment mechanisms actually exist – that provinces actually spend more where more people live, or similarly that cities consume more if they have larger populations. The foundation of this assumption seems plausible.

The provincial government can also generate different economic gains or losses for municipalities and citizens through a variety of non-fiscal activities, such as regulatory policy (Ruggeri and Yu 2000). Tax policy, for example, may have interregional effects because the potential effects of these policies have on a city's economic structure. Direct and explicit taxes or revenues associated with provincial policies are fully captured in the balance sheets. However, the implicit non-definitive costs and benefits that provincial policy inevitably casts on the population are not directly captured in the balances. Such shortcomings of the balances are impossible to avoid.

In this thesis, which seeks to estimate the net fiscal balances between Calgary and Edmonton, and the Province of Alberta from 1990 and 2002, I will use a hybrid of cash flow and benefits approaches. A cash-flow approach will be applied to the extent that the balances can account dollar-for-dollar what provincial expenditures take place in the cities. The data set used in this study has limitations as to how far provincial spending can be explained using the cash-flow method. As described above, data limitations in describing expenditures by destination and the incorporation of 'indivisible expenditures', force the balances to employ a benefits approach for some spending programs. Overall, the balances in this study allocate 42% and 47% of provincial expenditures on a cash-flow basis to the cities of Calgary and Edmonton, respectively. The remaining proportions (58% and 53%) of provincial spending are distributed using benefits assumptions. These percentage distributions between cash-flow and benefits approaches are in close accord with preceding balance sheet literature at the federal-provincial level.

The main data sources for the calculation of provincial fiscal balances are the Public Accounts, the Annual Report of the Government of Alberta, and the respective Ministries' Annual Reports. In addition, some school board annual reports were used to calculate education spending balances, and the cities' annual reports were used for analysis of the balances. For each city, the fiscal balance estimates consist of the sum of all revenues collected within a city's boundary, less the sum of the expenditures in, and transfers to, the city. While all of the items in the data sources are presented in a manner consistent with the cash flow approach the nature of the accounting practices in these government documents make it difficult to allocate some cash-flows to the cities. As introduced above, the data were deficient in the following ways:

- 1) much of the data we are interested in is labeled by function, not by city,
- 2) many of the departments we are interested in have changed name or scope or responsibility over the 13-year period, and;
- 3) most importantly, the cash flow approach does not always reveal the true benefits a city reaps from department spending.

To compensate for these data deficiencies some adjustments and approximations according the above methodologies were required for certain items to adequately assign them to Calgary and Edmonton. These adjustments to the Public Accounts and Ministries' Annual Reports data are outlined below.

## 4.0 Data and Adjustments

### 4.1. The Provincial Spending Profile<sup>3</sup>

Any study of provincial spending by destination should start by examining the spending patterns associated with health, education, social services and transportation. These four major services represent an average of 78% of provincial program spending over the period. From fiscal year 1989/90 to 2001/02 the proportion of total provincial spending on these four major functional services has remained relatively stable at approximately three-quarters of the provincial budget. However, proportional spending within the group of four has changed over the decade. Health and education spending has jointly risen from 53% to 64% of the provincial budget, largely at the expense of social services spending which has fallen from a high of 16% in 1992/93 to 9% in 2001/02.<sup>4</sup> Transportation expenditures fluctuate over the period, as expected due to the nature of capital expenditures. Overall, the treatments of these four expenditures characterize the largest part of spending in the following municipal fiscal balances.

'Other' budgetary expenditures, which claim the remaining 22% of provincial spending, include agriculture and economic development, protection of persons and property, regional planning and development, environment and resource conservation, recreation and culture, housing, and general government. While ministries such as Environment, Energy, Agriculture and Rural Development (contained within the above functional expenditures) have no obvious direct benefits for the cities in question, ministries such as Municipal Affairs, Gaming,<sup>3</sup> and Justice have substantial spending

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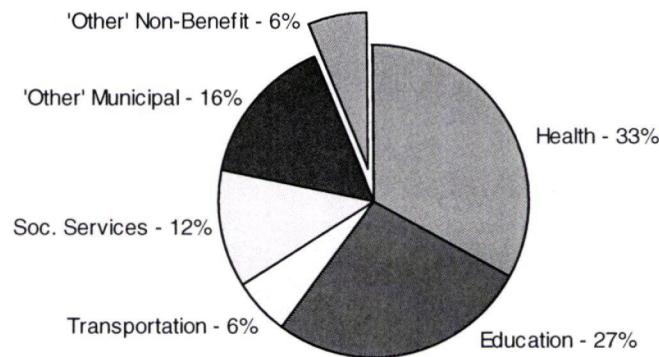
<sup>3</sup> See Appendix 1.

<sup>4</sup> These numbers support the political and economic agenda of the government of Alberta over the period, as Ralph Klein entered as premier in May 1993 with the mandate to withdraw government's involvement in non-essential services.

interests inside city boundaries. After deducting for potential non-benefit expenditures, another 16% (on average) of the total provincial budget is potentially apportionable to the cities.

Totaling health, education, social services, transportation, and 'other' potential municipal expenditures yields an average of 94% of total provincial expenditures potentially attributable to cities for the period investigated in our balances.

**Figure 2 – The Provincial Spending Profile (1989/90-2001/02 Average Proportions)**



Source: Derived from the Public Accounts, the Government of Alberta Annual Report

Direct transfers to cities are embedded in the province's spending agenda (illustrated in Figure 2). All unconditional and conditional grants to cities are titled under ministry (formerly departmental) spending. The Public Accounts, the Government of Alberta Annual Report and the ministries' annual reports record expenditures in the form of 'grants' exactly the same as expenditures that are made on specific program spending – as an expenditure. For example, the aggregate amount the province spends on transportation in a year includes the amount conditionally granted to cities for the provision of municipal transportation services and infrastructure. Ministries such as

Community Development, Infrastructure, Economic Development, Municipal Affairs and Human Resources and Employment, distribute various amounts of conditional and unconditional operating and capital grants to municipalities for the provision of city services such as library operation, municipal transportation infrastructure, arts and recreation programs, and other municipal social services. In this study, all ministries and their respective expenditures, including municipal grant funding, are accounted for under their functional spending designation as either: health, education, transportation, social services, or 'other' expenditures. Thus, the grants distributed to cities are included in the functional adjustments described in the following sections.

## **4.2 Expenditure Adjustments**

### **4.2.1 Health Adjustments<sup>5</sup>**

Provincial spending on health services was apportioned based on both cash-flow and benefits approaches. Direct revenues received by the Calgary Health Authority and Capital Health Authority (Edmonton) from the provincial government for each year were accounted for on a cash-flow basis as stated in the Public Accounts and the Ministry of Health and Wellness Annual Report. Other provincial health expenditures that could not be accounted for dollar-for-dollar were apportioned based on a benefits approach.

Beginning in 1994/95, the Government of Alberta consolidated 200 hospital, health units, and long term care boards into 17 regional health authorities. Therefore, after 1993/94 all provincially sponsored direct revenues to the respective health regions, including the Calgary and Capital Health Regions, were clearly identified in the ministry

Annual Reports. For the five years prior to 1994/95, regional health spending had to be estimated. Even though regional health authorities did not exist prior to 1994/95, estimating 'shadow' regional health spending for those years is a good way to estimate health money flowing into the respective cities. The average shares of total health spending that went to the Calgary and Capital Health Authorities after 1993/94 was used as an estimate for the average percentage those 'supposed' regions would have received in the five years previous. Direct cash-flow spending on regional health authorities accounted for approximately 65% of provincial health spending over the period.

The remaining 35% of provincial health expenditures were apportioned on an adjusted regional benefits basis (benefits approach). Specifically, this 'auxiliary'<sup>6</sup> portion of the budget was allocated based on the preceding distribution of direct benefits to the cities of Calgary and Edmonton respectively. For instance, the Calgary Health Authority (CHA) accounted for 29.8% of direct provincial health spending in 2001/02, therefore, it was estimated that the CHA would receive 29.8% of auxiliary provincial spending. This benefits estimation procedure is preferred over per capita appropriations since the Capital Health Region, which garners over 30% of direct health expenditures in every year during the period, exhibits that per capita estimation is not suitable for auxiliary health benefits distribution. If we were to use a per capita distribution technique, the Capital Health Region would only receive approximately 24% of auxiliary spending distribution, in comparison with the 32%, on average, it received of direct regional spending. The account of direct benefits indicates that the Capital Health Regional is the recipient of

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<sup>5</sup> For complete tables of adjustments, see Appendix 2.

<sup>6</sup> For a description of 'auxiliary' provincial health expenditures, see Appendix 2.

proportionally higher benefits than would be indicated by per capita apportionments. This consideration should be reflected in the distribution of auxiliary expenditures.

Total provincial regional health authority direct spending and estimated 'auxiliary' health spending are summed for each city to yield total municipal health spending for the period.

#### **4.2.2 Advanced Education Adjustments<sup>7</sup>**

Although the Department of Advanced Education (post-secondary education) and the Department of Education (primary and secondary education) were amalgamated in 2000 to become the Ministry of Learning, this study handled the two streams of education separately to keep accounting procedures consistent. Provincial advanced education spending was treated very similar to provincial health spending in that both cash-flow and benefits approaches were used. Direct revenues destined for either Calgary-based or Edmonton-based post-secondary institutions were accounted on a cash-flow basis as stated in the Public Accounts and the Ministry of Learning Annual Report. Other provincial advanced education expenditures that could not be accounted for dollar-for-dollar using the cash-flow approach were apportioned based on a benefits approach.

Post-secondary institutions include any university, public college, technical institution or other publicly administered institutions. All financial support given to post-secondary institutions in each respective city were summed to yield total provincial direct institutional spending within a city's boundaries. Direct spending on provincial institutional financial assistance accounted for approximately 76% of the provincial

advanced education budget. Furthermore, 75% of that direct spending was calculated to be spent on either Calgary or Edmonton based institutions. Thus, an average of 57% of the province's entire advanced education budget over the period could be apportioned on a cash-flow basis to institutions based in the two cities.

The remaining 24% of provincial advanced education expenditures were apportioned based on adjusted distribution of benefits. Specifically, this 'auxiliary'<sup>8</sup> portion of the budget was allocated based on the preceding distribution of direct benefits to Calgary and Edmonton post-secondary institutions respectively. For instance, Calgary institutional spending accounted for 32.7% of direct provincial spending on advanced education in 2001/02, therefore, it was estimated that the city would receive 32.7% of auxiliary provincial spending. Since distribution based on population would neglect the trend in the destination of advanced education dollars, as indicated by direct provincial spending, this estimation procedure of benefits is preferred over per capita appropriations.

Direct institutional spending and 'auxiliary' spending for each city were summed to yield total advanced education spending in Calgary and Edmonton respectively.

#### **4.2.3 Education Adjustments<sup>9</sup>**

Provincial education expenditure consists of spending to support Alberta's primary and secondary education programs. Education spending was adjusted very similarly to the preceding procedures in that both cash-flow and benefits approaches were used. Direct

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<sup>7</sup> For complete tables of adjustments, see Appendix 3.

<sup>8</sup> For a complete description of 'auxiliary' provincial advanced education expenditures see Appendix 3.

revenues destined for either Calgary-based or Edmonton-based school boards were accounted on a cash-flow basis as stated in the Public Accounts, the Ministry of Learning Annual Report and the respective Calgary and Edmonton, public and catholic school boards annual reports. Other provincial education expenditures that could not be accounted for dollar-for-dollar were apportioned based on a benefits approach – as has become routine.

The majority of education expenditure goes toward direct financial assistance to school boards, primarily public and catholic boards. These expenditures are, in part, funded by local education taxes levied on municipal properties. Section 353 of the Municipal Government Act prescribes municipalities the responsibility of collecting education requisitions. Beginning in 1995/96, the Government of Alberta centralized the assessment and collection of education taxes. Thus, beginning in 1995/96, education requisitions collected by cities were collected in the name of the province. As tax bases, tax rates and education revenues differed significantly among districts, centralization of revenue collection was installed, in part, to overcome these inequalities (Bruce and Schwartz, 1997). Prior to 1995/96, wealthier districts (such as cities) could enhance their community's educational opportunities by increasing the local tax effort, while lower income communities were disadvantaged because of their low tax bases and inability to raise local funds. To overcome these intra-provincial disparities, centralized revenue collection prevented school boards of perpetually raising local education taxes (as a percentage of total education expenditure). After 1994/95, the amount collected by education taxes became solely determined by the Government of Alberta.

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<sup>9</sup> For complete tables of adjustments, see Appendix 4.

The total collection of local education property taxes (on behalf of the province) is reported in Calgary and Edmonton annual reports as part of their statement of consolidated revenues. The tax is immediately transferred to the provincial government after being collected. For the balances, education requisitions from each city were deducted from total provincial funding to the city's school districts. Thus, the values in the balances represent the net provincial contribution to education, after city tax payments were received. Direct financial assistance to school boards, accounted on a cash flow basis, represents an average of 86% of provincial education expenditures over the period.

The remaining 14% of the provincial education budget was approximately distributed based on a benefits approach. This 'auxiliary'<sup>10</sup> portion of the budget was allocated based on the preceding distribution of direct benefits to Calgary and Edmonton school boards respectively. For example, Calgary institutional spending accounted for 23.3% of direct provincial spending in 2001/02, therefore, it was estimated that the city would receive 23.3% of auxiliary provincial education spending.

Altogether, total provincial education spending was calculated by tallying both direct cash accrued funding and auxiliary benefits assessments.

#### **4.2.4 Transportation and Utilities<sup>11</sup>**

Spending on transportation utilities is difficult to apportion by location. Alberta Transportation gives the cities varying amounts of transportation grant money year by

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<sup>10</sup> For complete description of 'auxiliary' education expenditures see Appendix 4.

<sup>11</sup> For complete tables of adjustments, see Appendix 5.

year, however urban grants only make a very small portion of provincial transportation budgets. Of the \$1.1 billion that the Alberta government spent on transportation and utilities in 2001/02, it is difficult to accurately ascertain what percentage of that was spent within Calgary or Edmonton on a cash-flow basis. Luckily, cash-flow accounting is not necessary when considering transportation spending. As is the nature of indivisible expenditures, spending on the provinces' transportation infrastructure has implicit benefits far beyond what can be accounted dollar-for-dollar.

Alternatively, the benefits approach is employed for transportation expenditures. It consists in the perspective of government as a supplier of public goods and attempts to allocate the value of government activity by the location of goods and services in their final use (Banks 1977). Since transportation spending is indivisible by nature, the benefits method of distribution entails estimating the consumption of government activity according to some guideline such as population. The population criterion seems to be the best unbiased estimator of unobservable consumption, since its general underlying principle is that: more people tend to consume more goods and services.

The shortcomings of this approach imply that transportation expenditure is equally useful to each citizen of Alberta. However, proper transportation infrastructure and accessibility has a wide range of implicit and explicit economic, social and cultural benefits for everyone living in the province regardless of their place of residence. Spending on infrastructure outside of cities indirectly benefits cities. Transportation spending mutually benefits all people and communities to varying degrees. Furthermore, the cities of Calgary and Edmonton have the most to gain from transportation spending outside of their boundaries, as efficient accessibility to the province's most prominent

economic centers undoubtedly cast substantial indirect benefits on the cities. For example, Alberta's multi-billion dollar investment in the province's North South Trade Corridor:

*This development is in harmony with the province's Economic Development Strategy, and reaffirms the Government of Alberta's business plan goal of providing effective and efficient infrastructure. The Alberta/United States trade has increased significantly since NAFTA was signed in 1993, and trucks carry over \$12 billion per year to and from the United States. The North-South Trade Corridor construction project includes twinning 550 kilometers of rural highway and the construction of 50 kilometers of urban 'ring road' through the cities of Calgary and Edmonton. Upon completion, the total length of the corridor will be 1,175 kilometers of four lane divided highway. (Alberta Transportation 2002)*

Transportation expenditures by the province were stated in the Public Accounts and the Ministry of Transportation and Utilities Annual Report. The balances were calculated using per capita disbursements of all provincial transportation and utilities expenditures based on a benefits approach.

#### 4.2.5 Social Service Adjustments<sup>12</sup>

Provincial spending on social services is too complicated to apportion using a cash-flow approach. Even an advanced team of accountants would have difficulty reconciling the numerous social services' departmental face-lifts, program re-titlements, shifts in service provision and the remainder of the puzzle that has encompassed Alberta's social services. Although departmental and program spending has been muddled over the 13-year period, the government does report aggregate social-service spending in the consolidated financial statements of the Public Accounts and the Annual Report of the Government of

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<sup>12</sup> For complete tables of adjustments, see Appendix 6.

Alberta. The aggregate total combines the social service expenditures of all ministries. The aggregate total is comprised largely of expenditures attributable to the Ministry of Human Resources and Employment and the Ministry of Children's Services. The activities of these departments together mainly include income support, social support, child welfare services, and family support services. The scope of these services revolves around providing assistance to low income individuals.

Because of the deficiencies in the data, provincial aggregate social services expenditure should be apportioned to each city using an adjusted benefits approach. Instead of using the population criterion to distribute benefits, another distributive method should be used to consider the incomes of the populations that reside within the cities of Calgary and Edmonton, and the consequent demand for social services that evolve from those income differences. To consider this adjustment for the balances, each city received a share of aggregate social service expenditure equal to the proportion of their provincial population weighted to account for that city's respective wage premium/handicap over the rest of the province. Population proportions were lowered if a city exhibited a wage premium, and raised if they exhibited wage handicap. Thus, cities with higher income populations would receive less accrued benefits from social services, and cities with lower income populations would receive more – in accord with the mission statement of social service spending. For example, if Calgary encompasses 30% of the provincial population and Calgarians earn a 10% wage premium over the rest of provincial wage earners, then Calgary would be reflected in the balances as garnering 27% of total provincial social services expenditures (population times one minus the wage premium:  $30\% \times (1-0.1)$ ).

Considering the location of the province's largest group of welfare services, homeless shelters and food banks, and generally considering the nature of urban life and city-living, it seems plausible to believe that income adjusted per capita apportionment of social services could potentially underestimate provincial spending in cities. Cities bear most of the province's low-income population. The Calgary regional office of the Ministry of Human Resources and Employment, which constituted 52.4% expenditure on social services in 2001/02, emphasized the prominence of cities and city facilities in the distribution of social services.<sup>13</sup> Thus, benefits distribution based on income adjusted population weight seem to constitute a conservative estimation of actual provincial spending.

#### **4.2.6 Adjustments to 'Other' Provincial Expenditures<sup>14</sup>**

Any budgetary expenditure disclosed in the Public Accounts and the Annual Report of the Government of Alberta that is not within the realm of health, education, transportation or social services, is considered an 'other' provincial expenditure. Other provincial expenditures include spending programs by ministries that have potential benefits to the cities, and spending programs by ministries that have no potential benefits within cities. The spending profiles of the Ministries of Agriculture and Rural Development, of Energy, and of the Environment (includes Forestry and Wildlife, and Sustainable Development) were summed to yield the total amount of potential non-benefit expenditures. Non-benefit expenditures were then deducted from total provincial

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<sup>13</sup> As indicated by the author's conversations with the office of Mr. Murray McGeough, Calgary regional director, Alberta Human Resources and Employment.

<sup>14</sup> For tables of adjustments, see Appendix 7.

'other' expenditures to reveal the remaining portion of the provincial budget that had a spending interest inside the cities of Calgary and Edmonton.

Due to the limitations of the data, it would be difficult to apply a complete and consistent cash-flow accounting procedure to tabulate the city-spent portion of these 'other' expenditures. There are too many remaining ministries and 'micro-expenditures' in relation to the scale of total provincial spending to consider these expenditures beyond what we can assume. Therefore, the benefits of 'other' provincial expenditures attributable to cities were apportioned based on population distribution. Seeing as the two most prominent ministries within this apportionment are the Ministry of Justice and Alberta Municipal Affairs, it seems plausible to assume that these departments have spending initiatives proportional to the populations inside Calgary and Edmonton.

#### **4.2.7 City Spending Totals**

The estimated municipal spending totals for health, education, advanced education, social services, transportation, and 'other' expenditures were summed to yield total municipal spending for Calgary and Edmonton respectively. Tables 4.1 and 4.2 illustrate total municipal spending and municipal spending by source.

**Table 4.1 - Calgary Provincial Spending 1990-2002 (Actual \$)**

Year	Total Education Spending	Total Advanced Education Spending	Total Calgary Health Spending	Trans. Spending in Calgary	Calgary Social Services Spending	Other Municipal Spending	Total Spending - All Services
2001-02	522,640,565	461,323,133	1,887,090,080	333,154,170	515,063,086	752,771,218	4,472,042,252
2000-01	492,964,678	434,490,977	1,745,302,013	496,754,446	474,487,413	718,304,518	4,362,304,044
1999-00	430,822,189	402,992,230	1,659,949,979	333,570,004	453,436,858	677,601,433	3,958,372,693
1998-99	401,079,444	402,147,143	1,285,306,758	193,609,623	431,296,928	648,353,213	3,361,793,108
1997-98	362,729,688	369,467,404	1,169,140,841	182,419,726	407,212,101	638,169,009	3,129,138,771
1996-97	353,182,897	314,415,657	978,466,194	169,509,275	377,119,406	435,172,247	2,627,865,677
1995-96	358,564,207	320,355,956	923,061,450	164,671,802	375,105,567	467,450,876	2,609,209,859
1994-95	365,118,948	346,410,928	1,089,207,204	147,473,748	400,067,286	501,586,279	2,849,864,393
1993-94	393,044,489	373,705,339	1,090,581,209	167,995,984	454,614,929	511,249,804	2,991,191,754
1992-93	389,752,114	367,474,274	1,113,416,677	187,726,173	514,940,331	622,043,187	3,195,352,756
1991-92	353,041,122	327,282,858	1,062,120,753	248,386,493	452,721,302	1,105,089,022	3,548,641,551
1990-91	339,960,375	316,502,980	1,001,665,802	277,686,509	409,645,677	1,072,833,475	3,418,294,819
1989-90	314,399,686	309,397,256	924,268,535	292,866,924	388,249,135	1,070,048,051	3,299,229,587

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 4.2 - Edmonton Provincial Spending, 1990-2002 (Actual \$)**

Year	Total Education Spending	Total Advanced Education Spending	Total Capital Health Spending	Trans. Spending in Edmonton	Edmonton Social Services Spending	Other Municipal Spending	Total Spending - All Services
2001-02	489,100,124	606,654,632	2,049,748,145	249,298,613	447,391,706	563,297,228	4,405,490,448
2000-01	504,730,212	568,486,393	1,910,999,202	377,504,793	416,553,839	545,870,098	4,324,144,536
1999-00	417,808,866	537,559,533	1,773,416,916	255,152,769	398,695,494	518,307,641	3,900,941,219
1998-99	391,862,080	553,772,773	1,451,469,189	148,997,874	366,272,199	498,958,929	3,411,333,043
1997-98	342,829,489	505,808,936	1,378,972,348	141,623,792	375,843,341	495,450,338	3,240,528,243
1996-97	320,749,636	453,100,983	1,186,713,169	134,342,605	369,929,957	344,890,705	2,809,727,055
1995-96	296,456,349	441,306,296	1,119,020,653	132,308,231	349,533,075	375,580,991	2,714,205,596
1994-95	291,926,763	479,593,184	1,330,421,290	122,062,501	356,853,982	415,157,792	2,996,015,513
1993-94	342,678,196	519,408,790	1,251,562,368	141,873,430	415,459,078	431,752,961	3,102,734,824
1992-93	341,969,045	510,690,617	1,277,768,589	161,743,919	439,084,552	535,949,255	3,267,205,978
1991-92	317,164,953	455,226,887	1,218,900,852	214,118,285	419,432,074	952,627,348	3,577,470,400
1990-91	294,661,991	440,258,935	1,149,522,120	240,880,995	378,820,294	930,636,478	3,434,780,815
1989-90	274,920,048	432,987,075	1,060,700,208	255,947,310	357,301,489	935,154,833	3,317,010,964

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

### 4.3 Revenue Adjustments<sup>15</sup>

To discover the provincial budget's fiscal effects and its impact on the level of growth and activity in the cities, the tax burden must be allocated to effectively determine who pays into provincial budgets. We therefore have to adopt certain assumptions about how the burden of taxation is transmitted between groups and individuals within the economy (C.D. Howe, 1977). The following revenue adjustments assign taxes to the city in which the taxpayer who is presumed to pay the tax resides – that is to say, the tax's destination point.

The total revenues collected by the province are listed in section one of the Public Accounts, and the Government of Alberta Annual Reports. Revenues are divided into 8 different categories:

1. Income taxes
  - personal income tax
  - corporate income tax
2. Other taxes
  - school property tax (beginning in 1998)
  - fuel tax
  - tobacco tax
  - hotel room tax
  - financial institutions tax
3. Non-Renewable Resource Revenue Revenues
4. Transfers from the Government of Canada

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<sup>15</sup> For tables of adjustments see Appendix 8.

5. Transfers from Regulated Funds - Investment income
6. Transfers from Government Enterprises
  - lottery operations
  - liquor operations
7. Fees, Permits and Licenses
  - health care premiums (starting in 1995)
  - motor vehicle licenses
8. Refunds of Expenditure and Other Transfers

Revenues potentially accrued within the cities of Calgary and Edmonton constitute an average of 49.8% of provincial revenues during the period (all revenues not including resource revenues, federal transfers, and investment income). The remaining 50.2% of revenues (resource revenues, federal transfers, and investment income) are not attributable to Calgary or Edmonton since their payments are independent of city boundaries. City-paid provincial revenues are made up of 65% Income Taxes, and 35% percent indirect taxes consumption taxes titled 'Other Taxes'. On average, Income Taxes consist of three-quarters personal income taxes and one-quarter corporate income tax. The administration of the personal income tax is the single largest tax generator at the province's disposal. The contribution of Income Taxes and Other Taxes to provincial revenues follow steady increases through the period and consistently retain their share of total provincial receipts. Any fluctuations in provincial budgets is founded mainly by volatile natural resource revenues – driven by the unpredictability of oil and natural gas prices.

### 4.3.1 Personal Income Tax Adjustments

Apportioning income tax revenues to cities should be done on a cash-flow basis. Ideally, receipts of income taxes would be labeled from where they were received. Unfortunately, no such information is available. Neither personal nor corporate income taxes are tracked by city of residence. Some estimation procedures have to be employed to divide the aggregate value of provincial tax earnings to place of receipt.

With respect to personal income taxes, a priori, it is most likely the case that urban residents are paying more in income taxes than the rest of the province. On average, provincial citizens that live inside cities earn more than provincial citizens that live outside city boundaries (Statistics Canada 2002). So, simply distributing tax receipts by population proportion would not be an adequate estimate of personal income tax revenues flowing from cities, as the income differential between groups suggests that tax payments do not accrue to all individuals equally. By construction, higher income earners pay more. This characteristic has to be reflected in the balances.

Accordingly, population numbers for each city were adjusted to reflect the greater contribution city residents pay into provincial income tax revenues due to higher incomes. Each city's share of provincial population was weighted to account for that city's respective average wage premium over the rest of the province. Multiplying a city's population by its wage premium yields that city's adjusted share of provincial personal income tax payments.<sup>16</sup> For example, if Calgary encompasses 30% of the

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<sup>16</sup> These estimates are likely to marginally underestimate personal income taxes paid by city residents since the procedure employed fails completely account for large tax value paid by higher income earners.

provincial population and Calgarians earn a 10% wage premium (1.1 times) over the rest of the provincial wage earners, then Calgary would be reflected in the balances as contributing 33% ( $30\% \times 1.1$ ) of provincial tax revenues.

#### **4.3.2 Corporate Income Tax Adjustments**

There is a lack of consensus as to who ultimately bears the burden of the corporate income tax (C.D. Howe 1977). As treated in the precursory provincial-federal fiscal balances, “the distribution of the corporate tax is an area where the number of estimates is as great as the number of studies themselves (Glynn 1978).” The destination of ownership and operation of the corporate firm is what is generally contested by analysts. On one side, owners are contested as paying the burden of the corporate tax because they are liable for tax pay-outs in their position as, well, owners. On the other side, consumers who buy the products that the firm produces are potentially paying the burden of the corporate tax through tax-induced higher prices of the firm’s outputs. The proportion in which each side assumes their burden of the tax is arguable. Furthermore, quantitatively measuring ‘ownership’ and ‘operations’ poses another challenge.

As far as the location of corporate operations are concerned, although a city, province, or region may be the principle foundation of a business, a corporation may have other many different locations and it would be consequently impossible to know how much of any such corporation’s tax is due to operations in any one area – for example, a chartered bank. It is likely that consumers of the firm’s products are not concentrated in a particular area. Thus apportioning consumption of a firm’s good to a particular municipality is inappropriate. Ownership of the firm is equally as indeterminate. Due to

the nature of big business and large corporate enterprise, ownership of these firms is divided unequally amongst shareholders, both foreign and domestic to the cities in question. In this scenario, ultimately it is the shareholders who bear the corporate tax, and who are also not concentrated by place of residence. City bodies themselves in no way own the corporations that do business within their borders, and therefore should not be credited with the tax revenues they pay.

Glynn (1978) performs the most extensive treatment of apportioning corporate taxes for the purposes of fiscal balance in the current federal-provincial balance sheet literature. The author makes two assumptions to accommodate for the ownership and operations of Canada's corporations. First, the author uses the provincial distribution of national retail sales as a proxy for the share of corporate income borne by a province's consumers through higher taxes. This distribution rests on the assumption that as more purchases are made by a province's citizens, the province indirectly assumes a larger burden of corporate taxation. Secondly, the author uses the provincial distribution of dividends received, after first having eliminated those dividends accruing to non-resident shareholders, as a proxy for the share of the corporate tax borne by shareholders – since it is shareholders that receive dividends. Thus, he assumes that as more dividends are received by provincial citizens, the more corporate tax the province assumes through ownership obligations. Given the uncertainty as to the portion of the corporate income tax that is borne by consumers and hence that share borne by shareholders, Glynn (1978) uses two alternative tax shifting assumptions: 1) that only 25 percent of the corporate income tax is shifted to consumers while the remaining 75 percent is borne by shareholders, and 2) the corporate tax is equally borne, 50-50.

Unfortunately, formal statistics describing retail sales and dividends received are not available in the municipal context. Neither consumption of goods and services nor corporate dividends paid are tracked by city of residence. It is impossible to treat revenues adjustments within municipal-provincial balances to the same extent as the authors within the provincial-federal context. However, we can remark that Glynn (1978) used 'retail sales' and 'dividends paid' as estimates for the propensity for provincial residents to be both consumers and shareholders. For the purposes of the following balances, municipal distribution of the province's total income was used as an approximate measure of municipal residents' tendencies to be both consumers and shareholders. Specifically, the population numbers for each city were adjusted to reflect that respective city's wage premium over the rest of the province, identical to the procedure used to adjust for personal income taxation. This foundation of this adjustment rests on the basic premises of income elasticity of demand, and of interest rates. The balances assume that as people earn more income, they will consequently consume more goods and services and bear an increasing amount of the provincial corporate tax burden through their actions as consumers. Identically, as people earn more income we assume that they will be increasingly more likely to invest their money and become shareholders, thus bear an increasing amount of the provincial corporate tax burden through actions as owners of the firm. This approach attempts to parallel preceding literature by associating the provincial corporate tax burden through consumers' prices and shareholders' dividends.

### **4.3.3 Indirect Tax Adjustments and Other Revenue Adjustments**

All indirect taxes (fuel tax, tobacco tax, etc.) were borne by the consumers of the taxed products. Indirect taxes are not labeled by destination. The origin of indirect tax revenues were assumed on the basis of consumption. The provincial fuel tax and the provincial tobacco tax accounted for an average of 83% of the province's city-borne indirect tax revenues. Due to the nature of tobacco and fuel products, it cannot be assumed that consumption of these goods necessarily follow the movement of one's income. Specifically, due to the fact that these products are largely income inelastic, it would be inappropriate to modify per capita consumption values based on population distribution by the previously applied income adjustment. Thus, indirect taxes were plainly allocated on the basis of provincial population distribution.

This assumption presumes that every provincial citizen consumes an equal amount of these goods and therefore contributes an equal amount of indirect tax revenue through consumption. Of course, this assumption loosely regards real-world circumstances as it is blatantly obvious that not every citizen owns a car or chooses to smoke. However, what this assumption aims at doing is to distribute the likelihood that a citizen owns a car or chooses to smoke equally across the provincial population. Thus we do not consider people who live inside cities or outside cities any different in terms of their likelihood of consuming these goods and bearing these taxes. There is no evidence to suggest that the city of Calgary consumes more fuel or tobacco to justify apportioning a larger percentage of provincial revenues beyond per capita values. (Also, there is no evidence to suggest that they consume less of these items).

The remaining consumption based taxes, which comprise 17% of indirect tax revenue, include the Insurance Corporations Tax (9%), the Financial Institutions Tax

(4%) and the Hotel Room Tax (4%). These remaining taxes were distributed to cities based on per capita allotments. Due to the ambiguity in the nature of the ownership and operations of the institutions in which these taxes are founded, it is difficult to justify any apportionment beyond what is divided by population.

Lastly, any revenues accrued to the provincial government through its liquor and lottery operations, or through administration of fees, permits and licensing will also be apportioned to cities based on per capita arrangements. The government data does not apportion revenues coming from the administration of sources by destination. The judgement to distribute revenues this way rests on the fact that there is no evidence to suggest that the respective city citizens consume more or less liquor, lottery or pay more fees, permit and licensing charges to justify apportioning a larger percentage of provincial revenues beyond per capita values.

#### **4.3.4 City Revenue Totals**

The estimated municipal accrued revenues from income taxes, corporate taxes, indirect taxes and other revenues were summed to yield total municipal municipally accrued revenues for Calgary and Edmonton respectively. Tables 4.3 and 4.4 illustrate total municipal revenues and municipal revenues by source.

**Table 4.3 - Calgary Accrued Revenues, 1990-2002 (Actual \$)**

Year	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96	1994-95	1993-94	1992-93	1991-92	1990-91	1989-90
<b>Income Taxes:</b>													
Personal income tax	4,503,000,000	4,288,000,000	5,100,000,000	4,601,000,000	3,877,000,000	3,445,000,000	3,177,000,000	3,063,000,000	2,877,000,000	2,793,778,000	3,057,079,000	2,796,209,000	2,535,664,000
Corporate income tax	2,229,000,000	2,023,000,000	1,255,000,000	1,659,000,000	1,848,000,000	1,407,000,000	1,332,000,000	1,073,000,000	854,000,000	636,842,000	730,723,000	803,472,000	648,389,000
Provincial Income Tax	<u>6,732,000,000</u>	<u>6,311,000,000</u>	<u>6,355,000,000</u>	<u>6,260,000,000</u>	<u>5,725,000,000</u>	<u>4,852,000,000</u>	<u>4,509,000,000</u>	<u>4,136,000,000</u>	<u>3,731,000,000</u>	<u>3,430,620,000</u>	<u>3,787,802,000</u>	<u>3,599,681,000</u>	<u>3,184,053,000</u>
Calgary Income Tax Weight	<u>0.339412506</u>	<u>0.337484064</u>	<u>0.33370901</u>	<u>0.327999985</u>	<u>0.339699095</u>	<u>0.33695462</u>	<u>0.324251708</u>	<u>0.304392131</u>	<u>0.303396573</u>	<u>0.292064313</u>	<u>0.304638562</u>	<u>0.303269621</u>	<u>0.302715216</u>
<b>Calgary Income Tax Revenue</b>	<u>2,284,924,990</u>	<u>2,129,861,928</u>	<u>2,120,720,756</u>	<u>2,053,279,904</u>	<u>1,944,777,321</u>	<u>1,634,903,814</u>	<u>1,462,050,953</u>	<u>1,258,965,854</u>	<u>1,131,972,613</u>	<u>1,001,961,673</u>	<u>1,153,910,554</u>	<u>1,091,673,894</u>	<u>963,861,293</u>
<b>Other Revenues:</b>													
<b>Other Taxes:</b>													
Fuel tax	585,000,000	581,000,000	568,000,000	547,000,000	558,000,000	545,000,000	527,000,000	514,000,000	494,000,000	519,157,000	481,941,000	390,765,000	286,150,000
Tobacco tax	373,000,000	340,000,000	339,000,000	341,000,000	330,000,000	317,000,000	311,000,000	322,000,000	312,000,000	313,114,000	322,078,000	275,080,000	235,290,000
Insurance corporations tax	134,000,000	119,000,000	117,000,000	101,000,000	0	100,000,000	96,000,000	105,000,000	82,000,000	76,835,000	71,804,000	62,465,000	59,054,000
Financial Institutions Capital Tax	0	0	0	0	0	36,000,000	35,000,000	42,000,000	43,000,000	34,547,000	40,937,000	37,888,000	0
Hotel room tax	56,000,000	52,000,000	48,000,000	0	0	37,000,000	33,000,000	32,000,000	27,000,000	28,160,000	25,845,000	24,428,000	24,174,000
Par-mutuel tax	0	0	0	0	0	0	9,000,000	9,000,000	10,000,000	11,221,000	11,420,000	11,009,000	0
Other	2,000,000	38,000,000	35,000,000	77,000,000	216,500,000	5,000,000	0	0	0	24,000	1,000	0	9,795,000
<b>Government Enterprises:</b>													
Alberta Liquor Control Board	507,000,000	468,000,000	470,000,000	485,000,000	402,000,000	440,000,000	484,000,000	430,000,000	434,000,000	411,500,000	430,500,000	408,000,000	383,000,000
Lottery Funds	1,105,000,000	988,000,000	857,000,000	770,000,000	705,000,000	456,000,000	385,000,000	492,000,000	113,000,000	25,000,000	225,000,000	0	0
Other	166,000,000	180,000,000	246,000,000	125,000,000	0	25,000,000	6,000,000	14,000,000	6,000,000	4,304,000	4,768,000	4,716,000	14,488,000
<b>Fees, Permits and Licenses:</b>													
Motor vehicle licenses	215,000,000	208,000,000	200,000,000	196,000,000	185,000,000	174,000,000	179,000,000	165,000,000	163,000,000	158,381,000	151,120,000	149,041,000	124,158,000
Health Care Premiums	708,000,000	680,000,000	653,000,000	680,000,000	633,000,000	600,000,000	590,000,000	542,000,000	466,007,000	434,476,000	416,676,000	344,262,000	303,734,000
Blue-Cross premiums						20,000,000	21,000,000	21,000,000					
Less Alberta energy tax refund	-320,000,000	-345,000,000	0	0	0	0	0	0	0	0	0	0	0
Other Provincial Revenue	<u>3,531,000,000</u>	<u>3,309,000,000</u>	<u>3,533,000,000</u>	<u>3,322,000,000</u>	<u>3,029,500,000</u>	<u>2,755,000,000</u>	<u>2,676,000,000</u>	<u>2,688,000,000</u>	<u>2,150,007,000</u>	<u>2,016,719,000</u>	<u>2,182,090,000</u>	<u>1,707,654,000</u>	<u>1,439,843,000</u>
Calgary Other Revenue Weight	<u>0.302317758</u>	<u>0.301428669</u>	<u>0.298897853</u>	<u>0.298780282</u>	<u>0.300032444</u>	<u>0.293268642</u>	<u>0.290939579</u>	<u>0.286356792</u>	<u>0.283776999</u>	<u>0.282621394</u>	<u>0.281999093</u>	<u>0.282303872</u>	<u>0.280626017</u>
<b>Calgary Other Revenue Total</b>	<u>1,067,484,004</u>	<u>997,427,465</u>	<u>1,056,006,115</u>	<u>992,548,098</u>	<u>908,948,291</u>	<u>807,955,109</u>	<u>778,554,314</u>	<u>769,727,056</u>	<u>610,122,535</u>	<u>569,967,934</u>	<u>615,347,401</u>	<u>482,077,336</u>	<u>404,057,407</u>
<b>Total Calgary Paid Revenue</b>	<u>3,352,408,995</u>	<u>3,127,289,393</u>	<u>3,176,726,871</u>	<u>3,045,828,002</u>	<u>2,853,725,611</u>	<u>2,442,858,924</u>	<u>2,240,605,266</u>	<u>2,028,692,910</u>	<u>1,742,095,148</u>	<u>1,571,929,607</u>	<u>1,769,257,955</u>	<u>1,573,751,229</u>	<u>1,367,918,699</u>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 4.4 - Edmonton Accrued Revenues, 1990-2002 (Actual \$)**

Year	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96	1994-95	1993-94	1992-93	1991-92	1990-91	1989-90
<b>Income Taxes:</b>													
Personal income tax	4,503,000,000	4,288,000,000	5,100,000,000	4,601,000,000	3,877,000,000	3,445,000,000	3,177,000,000	3,063,000,000	2,877,000,000	2,793,778,000	3,057,079,000	2,796,209,000	2,535,664,000
Corporate income tax	2,229,000,000	2,023,000,000	1,255,000,000	1,659,000,000	1,848,000,000	1,407,000,000	1,332,000,000	1,073,000,000	854,000,000	636,842,000	730,723,000	803,472,000	648,389,000
Provincial Income Tax	<u>6,732,000,000</u>	<u>6,311,000,000</u>	<u>6,355,000,000</u>	<u>6,260,000,000</u>	<u>5,725,000,000</u>	<u>4,852,000,000</u>	<u>4,509,000,000</u>	<u>4,136,000,000</u>	<u>3,731,000,000</u>	<u>3,430,620,000</u>	<u>3,787,802,000</u>	<u>3,599,681,000</u>	<u>3,184,053,000</u>
Edmonton Income Tax Weight	<u>0.222070793</u>	<u>0.225164939</u>	<u>0.225058313</u>	<u>0.230949856</u>	<u>0.225558695</u>	<u>0.220028715</u>	<u>0.227456326</u>	<u>0.234690442</u>	<u>0.237896505</u>	<u>0.254073723</u>	<u>0.245898613</u>	<u>0.248099995</u>	<u>0.252570407</u>
<b>Edmonton Income Tax Revenue</b>	<b><u>1,494,980,581</u></b>	<b><u>1,421,015,930</u></b>	<b><u>1,430,245,577</u></b>	<b><u>1,445,746,098</u></b>	<b><u>1,291,323,529</u></b>	<b><u>1,067,579,324</u></b>	<b><u>1,025,600,575</u></b>	<b><u>970,679,668</u></b>	<b><u>887,591,861</u></b>	<b><u>871,630,394</u></b>	<b><u>931,415,259</u></b>	<b><u>893,080,838</u></b>	<b><u>804,197,561</u></b>
<b>Other Revenues:</b>													
<b>Other Taxes:</b>													
Fuel tax	585,000,000	581,000,000	568,000,000	547,000,000	558,000,000	545,000,000	527,000,000	514,000,000	494,000,000	519,157,000	481,941,000	390,765,000	286,150,000
Tobacco tax	373,000,000	340,000,000	339,000,000	341,000,000	330,000,000	317,000,000	311,000,000	322,000,000	312,000,000	313,114,000	322,078,000	275,080,000	235,290,000
Insurance corporations tax	134,000,000	119,000,000	117,000,000	101,000,000	0	100,000,000	96,000,000	105,000,000	82,000,000	76,835,000	71,804,000	62,465,000	59,054,000
Financial Institutions Capital Tax	0	0	0	0	0	36,000,000	35,000,000	42,000,000	43,000,000	34,547,000	40,937,000	37,888,000	0
Hotel room tax	56,000,000	52,000,000	48,000,000	0	0	37,000,000	33,000,000	32,000,000	27,000,000	28,160,000	25,845,000	24,428,000	24,174,000
Pari-mutuel tax	0	0	0	0	0	0	9,000,000	9,000,000	10,000,000	11,221,000	11,420,000	11,009,000	0
Other	2,000,000	38,000,000	35,000,000	77,000,000	216,500,000	5,000,000	0	0	0	24,000	1,000	0	9,795,000
<b>Government Enterprises:</b>													
Alberta Liquor Control Board	507,000,000	468,000,000	470,000,000	485,000,000	402,000,000	440,000,000	484,000,000	430,000,000	434,000,000	411,500,000	430,500,000	408,000,000	383,000,000
Lottery Funds	1,105,000,000	988,000,000	857,000,000	770,000,000	705,000,000	456,000,000	385,000,000	492,000,000	113,000,000	25,000,000	225,000,000	0	0
Other	166,000,000	180,000,000	246,000,000	125,000,000	0	25,000,000	6,000,000	14,000,000	6,000,000	4,304,000	4,768,000	4,716,000	14,488,000
<b>Fees, Permits and Licenses:</b>													
Motor vehicle licenses	215,000,000	208,000,000	200,000,000	196,000,000	185,000,000	174,000,000	179,000,000	165,000,000	163,000,000	158,381,000	151,120,000	149,041,000	124,158,000
Health Care Premiums	708,000,000	680,000,000	653,000,000	680,000,000	633,000,000	600,000,000	590,000,000	542,000,000	466,007,000	434,476,000	416,676,000	344,262,000	303,734,000
Blue-Cross premiums						20,000,000	21,000,000	21,000,000					
Less Alberta energy tax refund	-320,000,000	-345,000,000	0	0	0	0	0	0	0	0	0	0	0
Other Provincial Revenue	<u>3,531,000,000</u>	<u>3,309,000,000</u>	<u>3,533,000,000</u>	<u>3,322,000,000</u>	<u>3,029,500,000</u>	<u>2,755,000,000</u>	<u>2,676,000,000</u>	<u>2,688,000,000</u>	<u>2,150,007,000</u>	<u>2,016,719,000</u>	<u>2,182,090,000</u>	<u>1,707,654,000</u>	<u>1,439,843,000</u>
Edmonton Other Revenue Weight	<u>0.226223787</u>	<u>0.229068442</u>	<u>0.228631513</u>	<u>0.22993499</u>	<u>0.232933868</u>	<u>0.232426853</u>	<u>0.233760126</u>	<u>0.237014565</u>	<u>0.239651064</u>	<u>0.243505159</u>	<u>0.243093582</u>	<u>0.244886357</u>	<u>0.245249525</u>
<b>Edmonton Other Revenue Total</b>	<b><u>798,796,190</u></b>	<b><u>757,987,475</u></b>	<b><u>807,755,136</u></b>	<b><u>763,844,038</u></b>	<b><u>705,673,154</u></b>	<b><u>640,335,429</u></b>	<b><u>625,542,096</u></b>	<b><u>637,095,149</u></b>	<b><u>515,251,466</u></b>	<b><u>491,081,482</u></b>	<b><u>530,452,073</u></b>	<b><u>418,181,166</u></b>	<b><u>353,120,812</u></b>
<b>Total Edmonton Paid Revenue</b>	<b><u>2,293,776,771</u></b>	<b><u>2,179,003,406</u></b>	<b><u>2,238,000,713</u></b>	<b><u>2,209,590,135</u></b>	<b><u>1,996,996,683</u></b>	<b><u>1,707,914,753</u></b>	<b><u>1,651,142,671</u></b>	<b><u>1,607,774,818</u></b>	<b><u>1,402,843,327</u></b>	<b><u>1,362,711,876</u></b>	<b><u>1,461,867,333</u></b>	<b><u>1,311,262,004</u></b>	<b><u>1,157,318,373</u></b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## **5.0 Results**

The following balances attempt to show whether the cities of Calgary and Edmonton derive net fiscal benefits from provincial budgets, which contribute most to the financing of these benefits, what are the important re-distributive effects among the cities and whether such effects vary over the period.

### **5.1 The Balances**

Table 5.1 and 5.2 present consolidated municipally accrued receipts and expenditures, in actual and constant 2002 dollars, for Calgary and Edmonton over the 13-year period. For each year provincial city-accrued revenues were subtracted from provincial city-bound spending to yield net fiscal balances for each respective municipality. In order to explore the different dimensions of these values, the assessments are also presented on a per capita basis (Table 5.3), as a percentage of average municipal personal income (Table 5.4), and as a percentage of the municipalities' annual operating revenues (Tables 5.5 and 5.6). In addition, to gain a diverse perspective of provincial spending specifically, Tables 5.7 and 5.8 provide separate set of fiscal balances that only included the four main provincial spending priorities: health, advanced education, education, transportation and social services.

**Table 5.1 - Calgary Fiscal Balances, 1990-2002**

Year	Calgary Spending - All	Total Calgary Paid Revenue	Net Fiscal Balance	Real \$
2001-02	4,472,042,252	3,352,408,995	1,119,633,257	1,119,633,257
2000-01	4,362,304,044	3,127,289,393	1,235,014,651	1,263,419,988
1999-00	3,958,372,693	3,176,726,871	781,645,822	820,571,784
1998-99	3,361,793,108	3,045,828,002	315,965,106	340,641,981
1997-98	3,129,138,771	2,853,725,611	275,413,159	304,579,413
1996-97	2,627,865,677	2,442,858,924	185,006,753	206,116,024
1995-96	2,609,209,859	2,240,605,266	368,604,592	417,260,398
1994-95	2,849,864,393	2,028,692,910	821,171,483	943,772,385
1993-94	2,991,191,754	1,742,095,148	1,249,096,606	1,467,813,422
1992-93	3,195,352,756	1,571,929,607	1,623,423,149	1,911,580,757
1991-92	3,548,641,551	1,769,257,955	1,779,383,596	2,132,769,178
1990-91	3,418,294,819	1,573,751,229	1,844,543,589	2,240,013,735
1989-90	3,299,229,587	1,367,918,699	1,931,310,888	2,472,850,461
<b>Average</b>				1,203,155,599

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.2 - Edmonton Fiscal Balances, 1990-2002**

Year	Edmonton Spending - All	Total Edmonton Paid Revenue	Net Fiscal Balance	Real \$
2001-02	4,405,490,448	2,293,776,771	2,111,713,677	2,111,713,677
2000-01	4,324,144,536	2,179,003,406	2,145,141,131	2,194,479,377
1999-00	3,900,941,219	2,238,000,713	1,662,940,506	1,745,754,943
1998-99	3,411,333,043	2,209,590,135	1,201,742,908	1,295,599,029
1997-98	3,240,528,243	1,996,996,683	1,243,531,561	1,375,221,553
1996-97	2,809,727,055	1,707,914,753	1,101,812,302	1,227,529,086
1995-96	2,714,205,596	1,651,142,671	1,063,062,925	1,203,387,232
1994-95	2,996,015,513	1,607,774,818	1,388,240,695	1,595,505,030
1993-94	3,102,734,824	1,402,843,327	1,699,891,496	1,997,542,497
1992-93	3,267,205,978	1,362,711,876	1,904,494,102	2,242,541,805
1991-92	3,577,470,400	1,461,867,333	2,115,603,068	2,535,761,837
1990-91	3,434,780,815	1,311,262,004	2,123,518,811	2,578,801,244
1989-90	3,317,010,964	1,157,318,373	2,159,692,591	2,765,270,394
<b>Average</b>				1,913,008,285

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.3 - Per Capita Fiscal Balances, 1990-2002 (Real \$)**

Year	(1) Calgary Balances	(2) Edmonton Balances	Difference (2) - (1)
2001-02	1,237	3,118	1,881
2000-01	1,441	3,294	1,853
1999-00	953	2,652	1,698
1998-99	404	1,999	1,594
1997-98	372	2,162	1,790
1996-97	261	1,959	1,699
1995-96	544	1,953	1,409
1994-95	1,260	2,573	1,313
1993-94	1,988	3,204	1,216
1992-93	2,627	3,577	950
1991-92	2,974	4,102	1,128
1990-91	3,161	4,195	1,034
1989-90	3,569	4,567	998
<b>Average</b>	<b>1,599</b>	<b>3,027</b>	<b>1,428</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.4 - Per Capita Fiscal Balances, as % of Income 1990-2002 (2002\$)**

Year	Cal. Balances	Cal. Avg. Income	% of Income	Edmtn. Balances	Edmtn. Avg. Income	% of Income
2001-02	1,237	34,431	0.03593	3,118	30,105	0.10358
2000-01	1,441	34,749	0.04148	3,294	30,508	0.10799
1999-00	953	35,172	0.02710	2,652	31,011	0.08550
1998-99	404	34,055	0.01187	1,999	31,158	0.06414
1997-98	372	36,936	0.01006	2,162	31,590	0.06844
1996-97	261	36,452	0.00715	1,959	30,034	0.06524
1995-96	544	34,058	0.01597	1,953	29,735	0.06567
1994-95	1,260	31,521	0.03997	2,573	29,362	0.08764
1993-94	1,988	33,291	0.05973	3,204	30,910	0.10367
1992-93	2,627	32,523	0.08077	3,577	32,837	0.10892
1991-92	2,974	34,337	0.08661	4,102	32,152	0.12758
1990-91	3,161	35,888	0.08809	4,195	33,845	0.12396
1989-90	3,569	37,849	0.09429	4,567	36,134	0.12638
<b>Average</b>	<b>1,599</b>	<b>34,712</b>	<b>0.04608</b>	<b>3,065</b>	<b>27,909</b>	<b>0.09528</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.5 - Calgary Fiscal Balances as % of City Operating Revenues 1990-2000 (Actual \$)**

Year	Calgary Operating Revenues	Calgary Fiscal Balance	Balance as % of Revenues
1999-00	1,424,204,000	781,645,822	0.548830
1998-99	1,273,356,000	315,965,106	0.248136
1997-98	1,252,109,000	275,413,159	0.219959
1996-97	1,184,014,000	185,006,753	0.156254
1995-96	1,077,870,000	368,604,592	0.341975
1994-95	1,062,659,000	821,171,483	0.772752
1993-94	1,060,080,000	1,249,096,606	1.178304
1992-93	1,041,479,000	1,623,423,149	1.558767
1991-92	1,028,614,000	1,779,383,596	1.729885
1990-91	1,009,167,000	1,844,543,589	1.827788
1989-90	955,338,000	1,931,310,888	2.021600
<b>Average</b>			<b>0.964023</b>

Source: Table 5.1 and Vander Ploeg (2001)

**Table 5.6 - Edmonton Fiscal Balances as % of City Operating Revenues 1990-2000 (Actual \$)**

Year	Edmtn. Operating Revenues	Edmtn. Fiscal Balance	Balance as % of Revenues
1999-00	1,332,261,000	1,662,940,506	1.248209
1998-99	1,176,716,000	1,201,742,908	1.021268
1997-98	1,194,590,000	1,243,531,561	1.040969
1996-97	1,167,467,000	1,101,812,302	0.943763
1995-96	1,185,633,000	1,063,062,925	0.896621
1994-95	1,089,711,000	1,388,240,695	1.273953
1993-94	1,061,364,000	1,699,891,496	1.601610
1992-93	983,316,000	1,904,494,102	1.936808
1991-92	1,007,053,000	2,115,603,068	2.100786
1990-91	985,855,000	2,123,518,811	2.153987
1989-90	902,314,000	2,159,692,591	2.393504
<b>Average</b>			<b>1.510135</b>

Source: Table 5.2 and Vander Ploeg (2001)

**Table 5.7 - Calgary Fiscal Balances - Primary Spending Priorities, 1990-2002**

Year	Cal. Spending - Big 4	Calgary Paid Revenue	Net Fiscal Balance	Real \$	Real Per Capita \$
2001-02	3,719,271,034	3,352,408,995	366,862,039	366,862,039	405
2000-01	3,643,999,526	3,127,289,393	516,710,133	528,594,466	603
1999-00	3,280,771,260	3,176,726,871	104,044,389	109,225,800	127
1998-99	2,713,439,896	3,045,828,002	-332,388,106	-358,347,617	-425
1997-98	2,490,969,761	2,853,725,611	-362,755,850	-401,171,695	-490
1996-97	2,192,693,430	2,442,858,924	-250,165,494	-278,709,377	-353
1995-96	2,141,758,982	2,240,605,266	-98,846,284	-111,893,993	-146
1994-95	2,348,278,113	2,028,692,910	319,585,203	367,299,274	490
1993-94	2,479,941,950	1,742,095,148	737,846,802	867,043,777	1,175
1992-93	2,573,309,569	1,571,929,607	1,001,379,962	1,179,124,905	1,620
1991-92	2,443,552,529	1,769,257,955	674,294,574	808,209,476	1,127
1990-91	2,345,461,344	1,573,751,229	771,710,115	937,164,763	1,323
1989-90	2,229,181,536	1,367,918,699	861,262,837	1,102,760,936	1,592

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.8 - Edmonton Fiscal Balances - Primary Spending Priorities, 1990-2002**

Year	Edmntn. Spending - Big 4	Edmntn. Paid Revenue	Net Fiscal Balance	Real \$	Real Per Capita \$
2001-02	3,842,193,220	2,293,776,771	1,548,416,448	1,548,416,448	2,286
2000-01	3,778,274,438	2,179,003,406	1,599,271,033	1,636,054,267	2,456
1999-00	3,382,633,578	2,238,000,713	1,144,632,865	1,201,635,582	1,825
1998-99	2,912,374,115	2,209,590,135	702,783,979	757,671,408	1,169
1997-98	2,745,077,906	1,996,996,683	748,081,223	827,303,025	1,301
1996-97	2,464,836,350	1,707,914,753	756,921,597	843,286,351	1,346
1995-96	2,338,624,605	1,651,142,671	687,481,934	778,229,549	1,263
1994-95	2,580,857,720	1,607,774,818	973,082,902	1,118,364,180	1,804
1993-94	2,670,981,863	1,402,843,327	1,268,138,535	1,490,189,593	2,390
1992-93	2,731,256,722	1,362,711,876	1,368,544,847	1,611,461,557	2,570
1991-92	2,624,843,052	1,461,867,333	1,162,975,719	1,393,942,697	2,255
1990-91	2,504,144,336	1,311,262,004	1,192,882,332	1,448,636,304	2,357
1989-90	2,381,856,131	1,157,318,373	1,224,537,758	1,567,898,145	2,589

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## **5.2 Discussion**

The previous tables convey an impression about the total benefit or expenditure in total real, and real per capita terms each of the cities generated by the activities of the provincial government. Of course the provincial government does not create these benefits (Horry and Walker 1994), but the net distribution of expenditures and tax revenues of the provincial government into the cities of Calgary and Edmonton does provide a commentary of what these cities have to gain from the municipal-provincial fiscal relationship.

### **5.2.1 Municipal Benefits**

As evidenced by Tables 5.1 and 5.2, Calgary and Edmonton were net beneficiaries of provincial spending in every year during the 13-year period. Provincial tax receipts coming out of cities never exceeded provincial spending programs inside cities for any one-year the 26 balances were calculated. The raw positive numerical value of these results suggests that cities gain in the municipal distribution of provincial fiscal balances. Apparently, provinces are not fiscally draining cities as cities accuse them of doing – the contrary is the case.

Cities gained more in some years than other years. For both cities, the municipal distribution of provincial fiscal balances, in real terms, were lower between the years of 1995 to 1999. Lower balances during this five-year period were caused by the failure of stationary provincial spending behavior in cities to keep pace with constantly increasing provincial revenues coming out of cities. Between 1995 and 1999, real provincial

revenues grew 32% faster than real provincial spending in Calgary and 24% faster than real spending in Edmonton. These results in cities mirror Premier Ralph Klein's massive spending withdrawal during the period in favor of his political agenda to implement a province-wide deficit elimination program. During this period province-wide real spending declined by a third (Bruce et al. 1997). Notably, although these spending cuts reduced the net fiscal benefits gained by Calgary and Edmonton (by 92% in Calgary and 56% in Edmonton between 1990 and 1997), the balances never show negative values. Thus, the province's fiscal agenda may have come at a cost to cities in comparison to previous years' gains, but the political-economic choices of the provincial government can never be accused of fiscally draining cities in any year during the period.

Real fiscal balances have not been completely restored to pre-deficit reduction levels. This fact seems to spark the feeling from cities that they have 'lost' in the last decade. Fiscal balances as real per capita values (Table 5.3), as a percentage of municipal personal income (Table 5.4), and as a percentage of city operating revenues (Tables 5.5 and 5.6) are all not as high as they were pre-1993, thus acknowledging that cities are not gaining in provincial fiscal balances as much as they have in the past, but this is definitely not to say that they are not gaining at all – they are.

### **5.2.2 Municipal Fiscal Autonomy**

The ratios of per capita provincial balances to personal incomes are shown in Table 5.4. Calgary and Edmonton are beneficiaries of the net provincial fiscal balances, receiving an average amount in net spending equal to approximately 5% and 10% of average personal income respectively. Table 5.5 and 5.6 compare the values of the fiscal balances to the

size of city operating revenues for each year. Astonishingly, the fiscal balances are approximately equal to the average size of municipal operating revenues in Calgary and are one-and-one-half the size of operating revenues in Edmonton. These values are better understood when put in the following context.

Hypothetically, consider that the municipalities were fiscally autonomous and that changes in both the level and distribution of taxes on individuals were changed so that the cities were responsible for revenues and spending. That is to say, assume that the local governments gain full control over all provincial tax sources (personal income taxes, corporate income taxes, indirect taxes, etc.) but at the same time local governments become responsible for continuing or eliminating all expenditures that are presently fully or partially financed by the provincial government. What we are comparing is the hypothetical situation under which each municipal government would be totally fiscally autonomous, with the current situation that has cities playing their part in the federalist system.

If we assumed that the municipal government was fiscally autonomous, and that the range of services provided by the province were transferred to municipalities, the fiscal balances calculated here show that cities would evidently be at an extreme revenue loss. That is to say that city accrued revenues could not pay for city demanded services. Hypothetically, cities would have to confront their taxpayers for more revenue help. The values in Table 5.5 and 5.6 reveal the percentage municipal operating budgets would have to increase to answer to current spending commitments if cities were autonomous. Essentially, the city of Calgary and Edmonton would have to more than double their operating revenues through increasing the local tax burden currently endured the

municipal taxpayer. To what extent would the average citizen of each respective city have to pay more? The values in Table 5.4 essentially report the average personal municipal tax rate increase for the average citizen of each respective city needed to cover the presumed municipal revenue shortfall. If cities provided all services through local government administration, then local governments, respectively, would have to administer an average personal income tax hike of 5% and 10% to cover the excess cost of services that was previously 'picked-up' by the province. This result suggests that perhaps cities have a lot more to gain from the existing distribution of service provision than they acknowledge. The city taxpayer has a distinct advantage under the current distribution of powers.

The above theoretical argument demonstrates the extent to which provincial governments are already easing the municipal tax burden through the provision of provincial services. Cities should evidently favor the current municipal-provincial status-quo. None of this says that cities are not facing fiscal challenges in the existing setting, but it does point out that the fiscal stresses endured by cities are not at the hand of the province. Quite obviously, cities are not being fiscally drained by provincial governments. Contrarily, provincial governments are substantially easing the municipal tax burden.

### **5.2.3 Calgary versus Edmonton**

The City of Edmonton had larger net fiscal balances than the City of Calgary for every year calculated. Over the period, the City of Calgary had an average real net fiscal gain \$710 million (\$1,428 per person) lower than that for the City of Edmonton. Curiously, in

9 of the 13 years the balances were calculated, the City of Edmonton received more provincial spending than Calgary, while in all 13 years Calgarians paid more into provincial revenues. The inflation adjusted per capita balances take into account the large differences in municipal populations across time (Table 5.3). In terms of per capita values over the period, net gains within the City of Calgary were an average of \$1,599 per person, and in the City of Edmonton an average of \$3,027. In other words, the City of Edmonton received 1.9 times more net provincial spending per person than the City of Calgary, on average over the period. Furthermore, this relationship has evolved since 1990 when Edmonton's balances were 1.3 times higher than Calgary's, peaking in 1997 at 7.5 times higher, and settling in 2002 at balances that were 2.5 times higher.

Overall, the average Calgarian pays more in revenues and receives less in spending benefits than their Edmonton counterparts. If Calgary received back from the provincial government the same proportion in per capita provincial spending that it paid in revenues, it would appear that the balances should be the opposite for each city – with Calgary gaining the greater spending advantage. The per capita balances provoke the question as to whether the City of Calgary is paying equalization to Edmonton. To what extent are the taxes raised by the provincial government in Calgary, spent in Edmonton?

Edmonton's higher fiscal balances are largely driven by the city's greater proportion of provincial health and advanced education spending, compounded with distinctly lower tax collection. Edmonton's tax payments were an average of \$593 million less than Calgary's over the period. This is fundamentally due to Calgary's larger proportion of the provincial population and greater concentration of Alberta's higher income earners. In inflation adjusted per capita terms, Calgarians pay an average of \$215

more in provincial taxes than Edmontonians. Calgary's health and post-secondary education receipts were a combined average of \$307 million lower than Edmonton's. The distribution of health care funding in Alberta is formula driven based according to need and population distribution (Ministry of Health and Wellness, 2002). Edmonton, with lower income earners and the responsibility of providing tertiary services to low income northern citizens, have more health needs and therefore get a greater share of the provincial endowment. Calgary has higher per capita incomes and fewer tertiary service responsibilities in health services and, thus, receives less financial support.

The post-secondary education spending differential rests solely on the funding differences between the University of Calgary and the University of Alberta. All other institutions beyond these universities have approximately equal provincial support. The issue regarding provincial funding disparities between the University of Calgary and the University of Alberta has received some attention.<sup>17</sup> Fundamentally, there is a current debate as to why the University of Alberta receives \$1000 more per student from the provincial government than the University of Calgary. The University of Calgary launched its appeal for provincial funding equity with its June, 1987 publication, "The University of Calgary's Position on Funding Inequity Among Alberta Universities." In response to the University, the provincial government released an externally solicited publication titled, "Post-Secondary Operating Grants in Alberta: An Equity Study." Essentially, the Department of Advanced Education cited "differential program costs" as the root of funding differentials, highlighting the administrative expense of advanced programs such as dentistry, agriculture and forestry as examples of advanced curriculums

available in Edmonton and not in Calgary. Beyond comparison in per capita terms, the University of Alberta has a larger student population than the University of Calgary, and thus have increased funding needs for more staff and students. Apparently, the University of Calgary's lower student population compounded with the administration of various program opportunities at the University of Alberta, has given the U of A the funding advantage. Consequently, funding considerations for the University of Alberta drives Edmonton's share of advanced education expenditures.

To the extent that we observe Calgary paying more in revenues and receiving less in spending benefits in health and post-secondary education than their municipal counterpart, this may suggest that Calgary would choose to have more done through local government with respect to the provision of these services. Calgary pays an average of \$593 million more revenues than Edmonton and receives \$307 million less in provincial funding in these two services jointly. Considering this may imply that Calgarians should choose to see the local administration enter in the provision of some services in order to retain city-generated income locally. Instead, the existing circumstance evidently has the provincial government transferring these revenues outside of the city – considering all else equal.

If we crudely consider 'equalization' as a compensatory tool whereby income is redistributed based on how much you pay and how much you receive, then Calgary is effectively paying equalization to Edmonton. The per capita net fiscal balances show that Calgary pays more on average for services provided by the province. Edmonton pays

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<sup>17</sup> A March 21, 2003 Calgary Herald commentary titled, "Why Does The University of Alberta Get \$1000 More Per Student Than Calgary," highlights the current debate over post-secondary funding equity in Alberta.

less than Calgary in terms of the per capita share of provincial taxes, and receives more than Calgary by way of per capita spending. After the net fiscal balances are considered, per capita income between Calgary and Edmonton are more equal. Table 5.9 illustrates the re-distributive effect of the net fiscal balances. Column 3 represents the difference in municipal incomes before net fiscal balances are considered. Columns 4 and 5 add per capita net fiscal balances to the respective cities' per capita incomes. Column 6 shows the difference in municipal incomes after the balances were added. Notably, a \$3,222 per capita income difference was redistributed through the fiscal activities of the province to become a \$1,794 difference post-fiscal balances.

**Table 5.9 - Municipal Income Redistribution - 1990-2002 (2002\$)**

	[1]	[2]	[3]	[4]	[5]	[6]
Year	Cal. Avg. Income	Edmntn. Avg. Income	Difference	Cal. Balance	Edmntn. Balance	Difference
2001-02	34,431	30,105	4,326	35,668	33,223	2,445
2000-01	34,749	30,508	4,241	36,191	33,802	2,388
1999-00	35,172	31,011	4,161	36,126	33,663	2,463
1998-99	34,055	31,158	2,897	34,459	33,157	1,303
1997-98	36,936	31,590	5,346	37,308	33,752	3,556
1996-97	36,452	30,034	6,418	36,713	31,993	4,720
1995-96	34,058	29,735	4,323	34,602	31,688	2,915
1994-95	31,521	29,362	2,158	32,781	31,936	845
1993-94	33,291	30,910	2,381	35,279	34,114	1,165
1992-93	32,523	32,837	-314	35,149	36,414	-1,264
1991-92	34,337	32,152	2,185	37,312	36,254	1,057
1990-91	35,888	33,845	2,043	39,049	38,041	1,008
1989-90	37,849	36,134	1,714	41,418	40,701	717
<b>Average</b>			<b>3,222</b>			<b>1,794</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

#### 5.2.4 Indirect Provincial Transfers

Beyond the direct fiscal benefits cities collect through positive fiscal balances, local governments also benefit indirectly from the positive effect provincial spending has on their tax bases. Obviously, cities that have proper health services, a good school system, and efficient transportation infrastructure, are necessarily more attractive places to live. Thus, the efficient provision of provincial services within cities potentially drives the size of municipal tax bases. Provincial spending increases city revenues via the property tax as cities reap revenue feedback from provincial spending. Municipal property tax collection that is solely driven by provincial spending serves as an 'indirect' revenue source from the province to the cities. It is unclear to what extent cities are gaining in these indirect revenues created by provincial spending.

Performing a simple ordinary-least-squares regression should provide some insight into the specific effect provincial spending has on municipal tax bases, and provide some evidence of the size of 'indirect' provincial transfers. By running the values of total city property tax collections (in nominal dollars), for Calgary and Edmonton respectively, as a dependent variable against provincial spending (in nominal dollars), population, population growth, and a time trend as independent variables, we should gain some perspective into the association between net provincial spending and city property tax collection over time.

Population and population growth independent variables are included in the model to control for the effect growing populations have on municipal tax collections. A time trend was included to account for patterns in past movements of the property tax collection – to control for time. The time trend should also partially control the effect

differential property tax rates have on the size of total municipal tax collections over the period. Because the regression only contains 13 years of information, the estimated coefficients merely imply the relationship between city property tax values and net provincial spending.

**Table 5.10 - Regression Analysis of Provincial Spending on Municipal Tax Collections, 1990-2002**

	Calgary	Edmonton
<b>property tax collections</b>		
provincial spending	0.1109027 (2.637)	0.021857 (1.979)
Population	206.2878 (0.102)	567.2767 (1.040)
population growth	-1.03E+09 (-0.616)	-7.55E+08 (-4.414)
time trend	2.43E+07 (0.762)	3251146 (1.474)
Constant	2.39E+08 (0.201)	-4.83E+07 (-0.163)
<hr/>		
Number of obs.	13	13
F(4,8)	161.44	78.91
R-squared	0.9878	0.9753
Adjusted R-squared	0.9816	0.9629

\*\* t-statistic in parentheses

The coefficient attached to the provincial spending variable provides some insight into how much provincial spending is driving municipal tax bases. Specifically, every one-dollar increase in provincial spending increases in the dollar value of property taxes by the value of the estimated coefficient. For Calgary, the regression calculated a statistically significant provincial spending coefficient of 0.11. For Edmonton, the regression calculated a statistically significant provincial spending coefficient of 0.02. Thus, every one-dollar increase in provincial spending is directly associated with a \$0.11

and \$0.02 increase in City of Calgary and City of Edmonton property tax collections. Noticeably, Edmonton's provincial spending coefficient is much lower than Calgary's. This is mostly likely because the data fails to account for property taxes collected in Edmonton's surrounding areas. The reality is that many people living and paying property taxes in Edmonton's surrounding areas work, recreate, and use services in Edmonton (Berdahl and Vander Ploeg 2002). Thus, provincial spending is potentially driving property taxes in Edmonton's "satellite" cities too. Although Edmonton's multiplier is statistically significant, it is likely that the coefficient is not capturing the effect provincial spending has on the entire Edmonton city-region. Considering this deficiency, I will use Calgary's provincial spending coefficient as a proxy for an Edmonton city-region coefficient in the following analysis.

Multiplying the above coefficient value by total provincial spending for each city for each year yields the value of municipal property taxes that are induced by provincial spending. Essentially, these values can be considered as estimates of the values of 'indirect' provincial contributions to municipal tax revenues for each year over the period. The total and per capita values of the estimated indirect benefits for each city are shown in Tables 5.10 and 5.11. Furthermore, to gain a greater perspective of the relative size of these 'indirect' revenues, comparing the size of 'indirect' provincial revenues to the size of direct senior government operating and capital grants proves insightful. Tables 5.12 and 5.13 present the relative values of indirect and direct municipal tax revenues as per capita values for the cities of Calgary and Edmonton respectively.

**Table 5.10 - Calgary 'Indirect' Transfers, 1990-2002**

Year	Calgary Prov. Spending	Multiplier	Indirect Transfer	Per Capita
2001-02	4,472,042,252	0.1109027	495,961,560	548
2000-01	4,362,304,044	0.1109027	483,791,297	552
1999-00	3,958,372,693	0.1109027	438,994,219	510
1998-99	3,361,793,108	0.1109027	372,831,933	443
1997-98	3,129,138,771	0.1109027	347,029,938	424
1996-97	2,627,865,677	0.1109027	291,437,399	369
1995-96	2,609,209,859	0.1109027	289,368,418	377
1994-95	2,849,864,393	0.1109027	316,057,656	422
1993-94	2,991,191,754	0.1109027	331,731,242	449
1992-93	3,195,352,756	0.1109027	354,373,248	487
1991-92	3,548,641,551	0.1109027	393,553,929	549
1990-91	3,418,294,819	0.1109027	379,098,125	535
1989-90	3,299,229,587	0.1109027	365,893,469	528

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, various ministries' annual reports, and The City of Calgary Annual Report

**Table 5.11 - Edmonton 'Indirect' Transfers, 1990-2002**

Year	Edmonton Prov. Spending	Multiplier (proxy)	Indirect Transfer	Per Capita
2001-02	4,405,490,448	0.1109027	488,580,786	721
2000-01	4,324,144,536	0.1109027	479,559,304	720
1999-00	3,900,941,219	0.1109027	432,624,914	657
1998-99	3,411,333,043	0.1109027	378,326,045	584
1997-98	3,240,528,243	0.1109027	359,383,332	565
1996-97	2,809,727,055	0.1109027	311,606,317	497
1995-96	2,714,205,596	0.1109027	301,012,729	488
1994-95	2,996,015,513	0.1109027	332,266,210	536
1993-94	3,102,734,824	0.1109027	344,101,669	552
1992-93	3,267,205,978	0.1109027	362,341,964	578
1991-92	3,577,470,400	0.1109027	396,751,127	642
1990-91	3,434,780,815	0.1109027	380,926,466	620
1989-90	3,317,010,964	0.1109027	367,865,472	608

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, various ministries' annual reports, and The City of Edmonton Annual Report

**Table 5.12 - Calgary 'Indirect' and Direct Transfers, 1990-2001 (Actual \$)**

Year	Calgary Per Capita Indirect \$	Calgary Per Capita Direct \$	Indirect \$ / Direct \$
2000-01	552	262	2.11
1999-00	510	182	2.80
1998-99	443	137	3.22
1997-98	424	113	3.75
1996-97	369	107	3.43
1995-96	377	152	2.48
1994-95	422	161	2.63
1993-94	449	133	3.39
1992-93	487	133	3.65
1991-92	549	152	3.60
1990-91	535	155	3.46
1989-90	528	159	3.33
<b>Average</b>			<b>3.15</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, various ministries' annual reports, and The City of Calgary Annual Report

**Table 5.13 - Edmonton 'Indirect' and Direct Transfers, 1990-2001 (Actual \$)**

Year	Edmntn. Per Capita Indirect \$	Edmntn. Per Capita Direct \$	Indirect \$ / Direct \$
2000-01	720	164	4.39
1999-00	657	201	3.27
1998-99	584	140	4.18
1997-98	565	136	4.15
1996-97	497	125	3.99
1995-96	488	157	3.11
1994-95	536	65	8.27
1993-94	552	81	6.82
1992-93	578	100	5.75
1991-92	642	110	5.82
1990-91	620	112	5.54
1989-90	608	104	5.83
<b>Average</b>			<b>5.09</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, various ministries' annual reports, and The City of Edmonton Annual Report

Indirect provincial contributions to municipal revenues are not acknowledged by cities, but evidently they are far more important than the direct grants. Cities and city lobbyists are hung-up on the state of direct transfers to local governments instead of acknowledging the whole provincial spending program and the additional revenues that derive from the province's agenda. This balance sheet shakes the current perspective and implies that as the bulk of provincial spending occurs within cities, thus raising the values of municipal tax bases, perhaps cities should take advantage of these indirect revenue sources rather than demanding greater direct transfers from the province. Specifically, cities should favor provincial service provision, the net fiscal gains these services garner, and the municipal tax bases they enhance.

### **5.2.5 "Rest of Alberta" Balances<sup>18</sup>**

In this study we have so far considered the province of Alberta as being divided into three jurisdictions: Calgary, Edmonton, and everywhere else. I will term everywhere else as the "rest of Alberta," which contains smaller cities such as Red Deer, Medicine Hat and Lethbridge. The nature of the fiscal balances for the rest of the province is not of particular interest to the discussion concerning the municipal distribution of provincial fiscal balances, but balances for the rest of Alberta could potentially add an interesting dimension to the regional disparities debate. As both Calgary and Edmonton garner positive fiscal balances in every year during the period, it is interesting to question whether or not the fiscal transfers into cities are coming at the expense of communities in the rest of the province. If provincial spending in Calgary and Edmonton is coming at the

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<sup>18</sup> For complete tables of results, see Appendix 9.

expense of the rest of Alberta, then fiscal balances for the rest of Alberta should be negative to indicate this fiscal transfer. Conversely, if these fiscal balances are positive, then we have to question who or what is paying for the fiscal gains in all three jurisdictions.

Furthermore, calculating balances for the rest of the province should act as a confirmation that the entire balance system itself ‘adds up’ properly. Specifically, the weighted shares of Calgary, Edmonton and “Rest” incomes should equate to one, and regional provincial spending and regional provincial revenues should sum to yield a value representative of what is recorded in the Public Accounts.

Fiscal balances for the rest of Alberta are calculated by subtracting revenues accrued to the rest of the province (calculated using the same procedure as the cities) from residual provincial spending (all provincial spending remaining after deducting city accrued spending). The “Rest of Alberta” balances are shown in Table 5.14.

**Table 5.14 - "Rest of Alberta" Fiscal Balances, 1990-2002**

Year	"Rest" Spending	"Rest" Paid Revenue	Net Fiscal Balance	Real \$	Per Capita
2001-02	11,296,467,300	4,885,397,410	6,411,069,890	6,411,069,890	4,543
2000-01	9,371,551,420	4,558,353,804	4,813,197,617	4,923,901,162	3,607
1999-00	8,443,686,089	4,741,585,753	3,702,100,336	3,886,464,932	2,856
1998-99	7,677,873,848	4,587,406,763	3,090,467,086	3,331,832,565	2,507
1997-98	7,335,332,986	4,145,542,896	3,189,790,090	3,527,588,861	2,766
1996-97	5,342,407,268	3,712,671,975	1,629,735,293	1,815,688,089	1,420
1995-96	5,497,584,545	3,552,192,337	1,945,392,208	2,202,183,979	1,757
1994-95	5,249,120,095	3,451,987,575	1,797,132,520	2,065,444,405	1,657
1993-94	5,219,073,423	3,001,278,385	2,217,795,037	2,606,130,948	2,102
1992-93	5,561,741,267	2,768,467,643	2,793,273,623	3,289,079,691	2,696
1991-92	7,112,344,049	2,987,798,047	4,124,546,002	4,943,680,838	4,093
1990-91	6,917,677,366	2,650,184,920	4,267,492,446	5,182,442,827	4,367
1989-90	6,718,877,449	2,306,024,047	4,412,853,402	5,650,217,496	4,827
<b>Average</b>				<b>3,833,517,360</b>	<b>3,015</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

The balances for the rest of Alberta yield large positive values in every year during the 13-year period. Evidently, the fiscal gains collected by Alberta's largest cities are not at the expense of the rest of Alberta's communities. The rest of Alberta has a lot to gain from the distribution of provincial fiscal balances too. Curiously, every fiscal balance calculated in this study yields a positive value.

Adding the positive fiscal balances of all three groups together reveals the total value that provincial spending in Alberta communities is in excess of provincial revenues taken from Alberta residents. How did the provincial government afford to distribute such positive fiscal balances to the entire province? The positive fiscal balances are solely financed by the combined revenues reaped from the province's royalties on non-renewable resources, investment income, and payments from the Government of Canada. Any shortfall in these revenues' ability to pay for the positive balances was financed through the province's use of debt. I will term resource, investment, and federal revenues

as “exogenous revenues”. Table 5.15 shows the per capita values of different sources of “exogenous revenues” to illustrate the relative importance of resource revenues, investment income, and federal transfers. Table 5.16 shows per capita fiscal balances for the entire province, per capita shares of exogenous revenues, and the difference between them.

**Table 5.15 – Per Capita Composition of "Exogenous Revenues" 1990-2002 (Actual \$)**

Year	Resource	Investment	Federal	Total Exogenous.
2001-02	2414	264	756	3434
2000-01	3640	464	622	4727
1999-00	1615	662	569	2846
1998-99	840	571	474	1884
1997-98	1383	640	433	2456
1996-97	1497	450	459	2405
1995-96	1056	397	615	2068
1994-95	1291	349	634	2275
1993-94	1083	424	622	2129
1992-93	848	305	643	1795
1991-92	795	847	820	2463
1990-91	1071	917	847	2835
1989-90	907	766	764	2437

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table 5.16 - Fiscal Balances Versus Exogenous Revenues, 1990-2002 (Actual \$)**

Year	Provincial Per Capita Balance	Exogenous Revenues	Difference
2001-02	3,221	3,434	213
2000-01	2,818	4,727	1,909
1999-00	2,134	2,846	712
1998-99	1,634	1,884	250
1997-98	1,724	2,456	732
1996-97	1,082	2,405	1,323
1995-96	1,281	2,068	787
1994-95	1,532	2,275	743
1993-94	1,986	2,129	143
1992-93	2,455	1,795	-660
1991-92	3,154	2,463	-691
1990-91	3,281	2,835	-446
1989-90	3,444	2,437	-1,007

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

As illustrated in Table 5.15, exogenous revenues had the capacity to pay for the province's positive fiscal balances in all years after 1992/93. The years in which exogenous revenues were deficient in financing the balances (as indicated by the negative values in Table 5.15) the Government of Alberta evidently ran fiscal deficits as reported in the Public Accounts. We can assume that the volatility of exogenous revenues were largely driven by uncertain natural resource prices and unpredictable returns on investment. Nonetheless, the province financed its spending agenda based on the substantial contribution exogenous revenues make to the government's budget each year.

## 6.0 Conclusion

Local governments are feeling a revenue squeeze amidst the current urban sprawl and the consequent increase in demand for city services and infrastructure. The question looms as to who is responsible for paying for these local services: the city or the province? To date, local officials, media, and policy analysts have argued that the province has fiscally drained cities, thus insisting that provincial governments are to blame for current local revenue “challenges”. Municipal governments accuse the province of extracting more in taxes from cities than they return via provincial spending programs, and essentially draining municipal revenue prospects to pay for local services themselves.

This thesis shows that Mayors are wrong in their accusations, and that cities are not losing in the municipal distribution of provincial fiscal balances – provinces are not fiscally draining cities. The use of the balance sheet approach allows us to calculate the total benefits derived by the residents of each city from provincial government fiscal activity. Having this total, we can compare municipal tax contributions and provincial spending benefits to calculate a net expenditure total for each city.

The fiscal balances for Calgary and Edmonton show that each city derived a net fiscal benefit from the provincial government between 1990 and 2002. The cities’ gains from provincial spending are always in excess of their tax payments. Thus, there is evidence to suggest that the province is not fiscally draining cities. In stark contrast to the contentions of public officials, provinces are in fact supplementing the finances of local governments.

A few key points arise from the Calgary and Edmonton balances over the period. First, cities have a lot to gain from the existing federalist provincial-municipal division of

powers. There is a range of city services provided by the municipalities and the province. The current division of services provided by the two levels of government generates net fiscal gains for cities and city taxpayers. If the current federal framework did not exist, then cities would not nearly garner such fiscal benefits. If, hypothetically, the cities acted autonomously, then cities and city taxpayers of Calgary and Edmonton respectively would have to assume the average \$1.2 billion and \$1.9 billion revenue losses that are currently 'picked-up' by the provincial government through natural resource, investment and federal revenues. Cities seem unaware of this reality when they barter for more autonomous privileges and complain about the current distribution of taxes.

Second, taxes being raised in Calgary are being spent in Edmonton. The City of Edmonton gains considerably more in net fiscal benefits than the City of Calgary. This is largely due to the fact that the average Calgarian is paying more in provincial taxes and receiving less in health and post-secondary spending benefits than their municipal counterpart. It appears that Calgary is essentially paying equalization to Edmonton. To the extent that we observe Calgary paying more in revenues and receiving less in spending benefits than Edmonton, this may suggest that Calgary would choose to have more done through local government with respect to the provision of these services to retain more income locally.

Third, local governments fail to acknowledge the positive effect provincial spending has on enhancing local tax bases. As evidenced by the municipal-provincial tax multiplier, provincial spending increases city revenues via the property tax. Every one-dollar increase in city-bound provincial spending is associated with an ensuing increase in city property tax revenues. This balance sheet approach implies that as the bulk of

provincial spending occurs within cities, thus creating a net fiscal gain and enhancing municipal communities and tax bases, perhaps cities should take advantage of these 'indirect' revenue sources rather than demanding greater *direct* transfers from the province to raise their own revenues.

Vander Ploeg (2001) argues that even in light of the provincial government's spending agenda, provincial spending during the period was not spent on municipal services or infrastructure where it is demanded by growing local populations. However, the author obscures the relevant question as to who is responsible for paying for these local services and capital investments: the city or the province? Cities use fiscal drain as an argument as to why they should not have to pay. Policy analysts fail to acknowledge the political-economic underpinnings of the current urban finance debate, and the implicit tax increase regardless of what government pays. If provinces were to pay by means of transferring more revenue or tax concessions to the cities to facilitate in the provision of local services, then provincial tax rates would consequently increase to cover this revenue loss in their own spending agendas, or provincial spending would fall which would reduce municipal own source revenues as well. Conversely, if local governments pay for their own revenue shortage, municipal tax rates would have to rise to increase local revenues and pay for local services. Seeing as there is only one taxpayer who is the target of both municipal and provincial taxes, a provincially borne or municipally borne solution does not spare city residents from tax increases.

Cities neglect that provinces have spending commitments too. This balance sheet approach decisively illustrates this point. If the province was fiscally draining cities though its pursuit to finance its own spending agenda, only then would the province be

responsible to transfer revenue to the cities to help them with their revenue problems. As evidenced in this thesis, this is not the case as the province is not guilty of municipal fiscal drain. Evidently, cities are solely responsible for curing the current state of their own finances – which may require some constitutional compromise from the province.

If cities are accurate in their claim that they can no longer extend the municipal tax dollar any further than it is presently being exploited, and provinces are rightly returning positive fiscal balances to cities, then it would appear that the municipal taxpayer may be expected to pay more to make up the current municipal revenue shortfall.

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## Appendix 1: Provincial Spending Profile

### A1.1 Provincial Expenditures

#### Table A1.1

- Total provincial expenditures on health, education, transportation, social services, ‘other’ expenditures, and net total provincial expenditures as disclosed in the Public Accounts and the Government of Alberta Annual Report.

**Table A1.1 – Provincial Expenditures By Function, 1990-2002 (Actual \$)**

Year	Health	Education	Transportation	Social Services	Other Expenditures	Total Provincial Expenditure
2001-02	6,791,000,000	6,099,000,000	1,102,000,000	1,942,000,000	4,240,000,000	20,174,000,000
2000-01	5,929,000,000	5,024,000,000	1,648,000,000	1,788,000,000	3,669,000,000	18,058,000,000
1999-00	5,285,000,000	4,558,000,000	1,116,000,000	1,717,000,000	3,627,000,000	16,303,000,000
1998-99	4,593,000,000	4,287,000,000	648,000,000	1,600,000,000	3,323,000,000	14,451,000,000
1997-98	4,341,000,000	4,108,000,000	608,000,000	1,564,000,000	3,084,000,000	13,705,000,000
1996-97	3,940,000,000	2,568,000,000	578,000,000	1,511,000,000	2,183,000,000	10,780,000,000
1995-96	3,738,000,000	2,525,000,000	566,000,000	1,456,000,000	2,536,000,000	10,821,000,000
1994-95	3,954,000,000	2,651,000,000	515,000,000	1,491,000,000	2,484,000,000	11,095,000,000
1993-94	3,458,000,000	2,894,000,000	592,000,000	1,721,000,000	2,648,000,000	11,313,000,000
1992-93	3,605,447,000	2,824,652,000	664,232,000	1,884,996,000	3,044,973,000	12,024,300,000
1991-92	4,092,653,000	2,960,102,000	880,806,000	1,745,535,000	4,559,360,000	14,238,456,000
1990-91	3,861,211,000	2,901,114,000	983,644,000	1,567,493,000	4,457,291,000	13,770,753,000
1989-90	3,601,565,000	2,821,354,000	1,043,620,000	1,501,717,000	4,366,862,000	13,335,118,000

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

#### Table A1.2

- Functional expenditures as a percentage of total provincial program spending.
- “Spending Priorities” include health, education, transportation, and social services

**Table A1.2 – Provincial Expenditure Profile, 1990-2002**

Year	Health	Education	Transp. & Soc.Services	Spending Priorities	Other
2001-02	33.66%	30.23%	15.09%	78.98%	21.02%
2000-01	32.83%	27.82%	19.03%	79.68%	20.32%
1999-00	32.42%	27.96%	17.38%	77.75%	22.25%
1998-99	31.78%	29.67%	15.56%	77.01%	22.99%
1997-98	31.67%	29.97%	15.85%	77.50%	22.50%
1996-97	36.55%	23.82%	19.38%	79.75%	20.25%
1995-96	34.54%	23.33%	18.69%	76.56%	23.44%
1994-95	35.64%	23.89%	18.08%	77.61%	22.39%
1993-94	30.57%	25.58%	20.45%	76.59%	23.41%
1992-93	29.98%	23.49%	21.20%	74.68%	25.32%
1991-92	28.74%	20.79%	18.45%	67.98%	32.02%
1990-91	28.04%	21.07%	18.53%	67.63%	32.37%
1989-90	27.01%	21.16%	19.09%	67.25%	32.75%

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## A1.2 Non-Benefit Expenditures

*Table A1.3*

- Provincial expenditures with no obvious direct benefits to Calgary and Edmonton.

**Table A1.3 - Non-Benefit Expenditures, 1990-2002 (Actual \$)**

Year	Agriculture/Rural Development	Energy	Environment	Total
2001-02	1,180,000,000	150,000,000	420,000,000	1,750,000,000
2000-01	778,000,000	145,000,000	363,000,000	1,286,000,000
1999-00	781,000,000	133,000,000	446,000,000	1,360,000,000
1998-99	531,000,000	130,000,000	492,000,000	1,153,000,000
1997-98	488,000,000	134,000,000	335,000,000	957,000,000
1996-97	336,488,000	79,369,000	283,274,000	699,131,000
1995-96	370,870,000	86,647,000	471,789,000	929,306,000
1994-95	316,679,000	88,072,000	327,636,000	732,387,000
1993-94	443,702,000	72,372,000	330,336,000	846,410,000
1992-93	406,196,000	75,472,000	362,328,000	843,996,000
1991-92	419,678,000	86,204,000	134,710,000	640,592,000
1990-91	438,145,000	86,630,000	132,237,000	657,012,000
1989-90	332,673,000	97,921,000	123,193,000	553,787,000

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

Table A1.4

Column [1] = Total provincial expenditures not identified under health, education, transportation and social services, as declared in the Public Accounts and the Government of Alberta Annual Report.

Column [2] = Estimated total provincial expenditures that have no obvious direct benefits in the cities.

Column [3] = Column [1] minus Column [2]. Estimated total of 'Other Expenditures' potentially attributable to cities.

Table A1.4 -- Total Other Municipal Benefits, 1990-2002 (Actual \$)

	[1]	[2]	[3]
Year	Other Expenditures	Non-Benefit Expenditures	Other Municipal Benefits
2001-02	4,240,000,000	1,750,000,000	2,490,000,000
2000-01	3,669,000,000	1,286,000,000	2,383,000,000
1999-00	3,627,000,000	1,360,000,000	2,267,000,000
1998-99	3,323,000,000	1,153,000,000	2,170,000,000
1997-98	3,084,000,000	957,000,000	2,127,000,000
1996-97	2,183,000,000	699,131,000	1,483,869,000
1995-96	2,536,000,000	929,306,000	1,606,694,000
1994-95	2,484,000,000	732,387,000	1,751,613,000
1993-94	2,648,000,000	846,410,000	1,801,590,000
1992-93	3,044,973,000	843,996,000	2,200,977,000
1991-92	4,559,360,000	640,592,000	3,918,768,000
1990-91	4,457,291,000	657,012,000	3,800,279,000
1989-90	4,366,862,000	553,787,000	3,813,075,000

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## Appendix 2: Health Adjustments

### A2.1 Direct Spending

#### Table A2.1

Column [1] = Total spending on health services as declared in the Public Accounts and the Government of Alberta Annual Report.

Column [2] = Total amount of financial assistance distributed to the respective regional health authorities as declared in the Public Accounts and the Ministry of Health and Wellness Annual Report.

Column [3] = Column [2] divided by Column [1]. Percentage of total health spending that is spent on health authorities.

- estimates in bold italic

**Table A2.1 – Calculating Total Regional Health Authority Direct Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Total Health Spending	Total Regional Health Spending	% Regional Health Authorities
2001-02	6,325,000,000	4,245,803,000	0.671273202
2000-01	5,956,000,000	3,722,006,000	0.624917058
1999-00	5,486,000,000	3,442,344,000	0.627477944
1998-99	4,458,000,000	2,955,233,000	0.662905563
1997-98	4,219,000,000	2,733,976,000	0.648015169
1996-97	3,808,013,000	2,699,093,000	0.708793011
1995-96	3,644,172,000	2,474,536,000	0.679039299
1994-95	3,820,796,000	2,245,236,000	0.587635665
1993-94	3,869,514,000	<b><i>2,520,048,520</i></b>	<b><i>0.651257114</i></b>
1992-93	3,950,537,000	<b><i>2,572,815,325</i></b>	<b><i>0.651257114</i></b>
1991-92	3,768,532,861	<b><i>2,454,283,835</i></b>	<b><i>0.651257114</i></b>
1990-91	3,554,031,385	<b><i>2,314,588,223</i></b>	<b><i>0.651257114</i></b>
1989-90	3,279,416,521	<b><i>2,135,743,339</i></b>	<b><i>0.651257114</i></b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

Table A2.2 & Table A2.3

Column [1] = Total amount of financial assistance distributed to regional health authorities as declared in the Public Accounts and the Ministry of Health and Wellness Annual Report.

Column [2] = Total amount of assistance provided to Calgary and Capital Regional Health Authorities respectively as declared in the Public Accounts and the Ministry of Health and Wellness Annual Report.

Column [3] = Column [2] divided by Column [1]. Percentage of regional health spending that is spent on Calgary and Capital Regional Health Authorities respectively.

- estimates in bold italic

Table A2.2 - % of Total Regional Health Funding Spent in Calgary, 1990-2002 (Actual \$)

Year	[1] Total Regional Health Spending	[2] Calgary Regional Health Authority	[3] %CRHA
2001-02	4,245,803,000	1,266,753,000	0.298354163
2000-01	3,722,006,000	1,090,669,000	0.293032574
1999-00	3,442,344,000	1,041,582,000	0.302579289
1998-99	2,955,233,000	852,037,000	0.288314661
1997-98	2,733,976,000	757,621,000	0.277113259
1996-97	2,699,093,000	693,530,000	0.256949279
1995-96	2,474,536,000	626,795,000	0.253297992
1994-95	2,245,236,000	640,057,000	0.285073373
1993-94	<b>2,520,048,520</b>	<b>710,248,771</b>	<b>0.281839324</b>
1992-93	<b>2,572,815,325</b>	<b>725,120,532</b>	<b>0.281839324</b>
1991-92	<b>2,454,283,835</b>	<b>691,713,696</b>	<b>0.281839324</b>
1990-91	<b>2,314,588,223</b>	<b>652,341,980</b>	<b>0.281839324</b>
1989-90	<b>2,135,743,339</b>	<b>601,936,458</b>	<b>0.281839324</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

**Table A2.3 - % of Total Regional Health Funding Spent in Edmonton, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Total Regional Health Spending	Capital Regional Health Authority	%CRHA
2001-02	4,245,803,000	1,375,941,000	0.324070853
2000-01	3,722,006,000	1,194,216,000	0.320852787
1999-00	3,442,344,000	1,112,780,000	0.323262289
1998-99	2,955,233,000	962,187,000	0.325587526
1997-98	2,733,976,000	893,595,000	0.326848151
1996-97	2,699,093,000	841,134,000	0.311635798
1995-96	2,474,536,000	759,859,000	0.307071305
1994-95	2,245,236,000	781,803,000	0.348205267
1993-94	<b>2,520,048,520</b>	<b>815,088,896</b>	<b>0.323441747</b>
1992-93	<b>2,572,815,325</b>	<b>832,155,883</b>	<b>0.323441747</b>
1991-92	<b>2,454,283,835</b>	<b>793,817,851</b>	<b>0.323441747</b>
1990-91	<b>2,314,588,223</b>	<b>748,634,458</b>	<b>0.323441747</b>
1989-90	<b>2,135,743,339</b>	<b>690,788,557</b>	<b>0.323441747</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

## A2.2 Auxiliary Spending

### Table A2.4

Column [1] = Total spending on health services as declared in the Public Accounts and the Government of Alberta Annual Report.

Column [2] = Total amount of financial assistance distributed to the respective regional health authorities as declared in the Public Accounts and the Ministry of Health and Wellness Annual Report.

Column [3] = 1 minus Column [2]. Estimated percentage of total health spending that is spent on 'auxiliary' health services.

Column [4] = Column [3] multiplied by Column [1]. Estimated total auxiliary provincial health spending.

- estimates in bold italic

**Table A2.4 – Calculating Total Auxiliary Health Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]	[4]
Year	Total Health Spending	% Regional Health Authorities	% Auxiliary Spending	Auxiliary Spending
2001-02	6,325,000,000	0.671273202	0.328726798	2,079,197,000
2000-01	5,956,000,000	0.624917058	0.375082942	2,233,994,000
1999-00	5,486,000,000	0.627477944	0.372522056	2,043,656,000
1998-99	4,458,000,000	0.662905563	0.337094437	1,502,767,000
1997-98	4,219,000,000	0.648015169	0.351984831	1,485,024,000
1996-97	3,808,013,000	0.708793011	0.291206989	1,108,920,000
1995-96	3,644,172,000	0.679039299	0.320960701	1,169,636,000
1994-95	3,820,796,000	0.587635665	0.412364335	1,575,560,000
1993-94	3,869,514,000	<b>0.651257114</b>	<b>0.348742886</b>	<b>1,349,465,480</b>
1992-93	3,950,537,000	<b>0.651257114</b>	<b>0.348742886</b>	<b>1,377,721,675</b>
1991-92	3,768,532,861	<b>0.651257114</b>	<b>0.348742886</b>	<b>1,314,249,026</b>
1990-91	3,554,031,385	<b>0.651257114</b>	<b>0.348742886</b>	<b>1,239,443,162</b>
1989-90	3,279,416,521	<b>0.651257114</b>	<b>0.348742886</b>	<b>1,143,673,182</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

Table A2.5 and A2.6

Column [1] = Total spending on auxiliary health services calculated in Table A2.4.

Column [2] = % of direct health spending spent in respective health regions, as a proxy for % of auxiliary health spending spent in respective health regions.

Column [3] = Column [2] multiplied by Column [3]. Estimated percentage of auxiliary health spending that is spent within respective health authorities.

- estimates in bold italic

**Table A2.5 - Calculating Calgary Health Region Auxiliary Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Auxiliary Spending	%CRHA	Calgary Region Auxiliary Spending
2001-02	2,079,197,000	0.298354163	620,337,080
2000-01	2,233,994,000	0.293032574	654,633,013
1999-00	2,043,656,000	0.302579289	618,367,979
1998-99	1,502,767,000	0.288314661	433,269,758
1997-98	1,485,024,000	0.277113259	411,519,841
1996-97	1,108,920,000	0.256949279	284,936,194
1995-96	1,169,636,000	0.253297992	296,266,450
1994-95	1,575,560,000	0.285073373	449,150,204
1993-94	<b>1,349,465,480</b>	<b>0.281839324</b>	<b>380,332,438</b>
1992-93	<b>1,377,721,675</b>	<b>0.281839324</b>	<b>388,296,145</b>
1991-92	<b>1,314,249,026</b>	<b>0.281839324</b>	<b>370,407,057</b>
1990-91	<b>1,239,443,162</b>	<b>0.281839324</b>	<b>349,323,823</b>
1989-90	<b>1,143,673,182</b>	<b>0.281839324</b>	<b>322,332,076</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

**Table A2.6 - Calculating Edmonton Health Region Auxiliary Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Auxiliary Spending	%CRHA	Capital Region Auxiliary Spending
2001-02	2,079,197,000	0.324070853	673,807,145
2000-01	2,233,994,000	0.320852787	716,783,202
1999-00	2,043,656,000	0.323262289	660,636,916
1998-99	1,502,767,000	0.325587526	489,282,189
1997-98	1,485,024,000	0.326848151	485,377,348
1996-97	1,108,920,000	0.311635798	345,579,169
1995-96	1,169,636,000	0.307071305	359,161,653
1994-95	1,575,560,000	0.348205267	548,618,290
1993-94	<b>1,349,465,480</b>	<b>0.323441747</b>	<b>436,473,472</b>
1992-93	<b>1,377,721,675</b>	<b>0.323441747</b>	<b>445,612,705</b>
1991-92	<b>1,314,249,026</b>	<b>0.323441747</b>	<b>425,083,001</b>
1990-91	<b>1,239,443,162</b>	<b>0.323441747</b>	<b>400,887,662</b>
1989-90	<b>1,143,673,182</b>	<b>0.323441747</b>	<b>369,911,652</b>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

Table A2.7 & A2.8

Column [1] = Total direct spending distributed to health regions.

Column [2] = Total auxiliary spending distributed to health regions.

Column [3] = Column [1] plus Column [2]. Estimated total provincial health spending distributed to respective health regions. This total is used in the balances.

**Table A2.7 - Total Calgary Health Region Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Calgary Health Authority	Calgary Auxiliary Spending	Total Calgary Region Health Spending
2001-02	1,266,753,000	620,337,080	1,887,090,080
2000-01	1,090,669,000	654,633,013	1,745,302,013
1999-00	1,041,582,000	618,367,979	1,659,949,979
1998-99	852,037,000	433,269,758	1,285,306,758
1997-98	757,621,000	411,519,841	1,169,140,841
1996-97	693,530,000	284,936,194	978,466,194
1995-96	626,795,000	296,266,450	923,061,450
1994-95	640,057,000	449,150,204	1,089,207,204
1993-94	710,248,771	380,332,438	1,090,581,209
1992-93	725,120,532	388,296,145	1,113,416,677
1991-92	691,713,696	370,407,057	1,062,120,753
1990-91	652,341,980	349,323,823	1,001,665,802
1989-90	601,936,458	322,332,076	924,268,535

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

**Table A2.8 - Total Edmonton Health Region Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Capital Health Authority	Capital Auxiliary Spending	Total Capital Region Health Spending
2001-02	1,375,941,000	673,807,145	2,049,748,145
2000-01	1,194,216,000	716,783,202	1,910,999,202
1999-00	1,112,780,000	660,636,916	1,773,416,916
1998-99	962,187,000	489,282,189	1,451,469,189
1997-98	893,595,000	485,377,348	1,378,972,348
1996-97	841,134,000	345,579,169	1,186,713,169
1995-96	759,859,000	359,161,653	1,119,020,653
1994-95	781,803,000	548,618,290	1,330,421,290
1993-94	815,088,896	436,473,472	1,251,562,368
1992-93	832,155,883	445,612,705	1,277,768,589
1991-92	793,817,851	425,083,001	1,218,900,852
1990-91	748,634,458	400,887,662	1,149,522,120
1989-90	690,788,557	369,911,652	1,060,700,208

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

Table A2.9

- Before 1994/95, health care premiums were not collected as part of the provincial government's general revenue fund. To reconcile this administrative change across time, health premiums were added to general revenue fund spending for years prior to 1994/95.

Column [1] = Total health spending from general revenue fund.

Column [2] = Total from the collection of health premiums.

Column [3] = Column [1] + Column [2]. Total health spending.

**Table A2.9 - Accounting for Health Premiums, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	GRF Spending	Health Premium Spending	Total Health Spending
2001-02	6,325,000,000	n/a	6,325,000,000
2000-01	5,956,000,000	n/a	5,956,000,000
1999-00	5,455,000,000	n/a	5,455,000,000
1998-99	4,429,000,000	n/a	4,429,000,000
1997-98	4,190,000,000	n/a	4,190,000,000
1996-97	3,808,013,000	n/a	3,808,013,000
1995-96	3,644,172,000	n/a	3,644,172,000
1994-95	3,820,796,000	n/a	3,820,796,000
1993-94	3,403,507,000	466,007,000	3,869,514,000
1992-93	3,516,061,000	434,476,000	3,950,537,000
1991-92	3,351,856,861	416,676,000	3,768,532,861
1990-91	3,209,769,385	344,262,000	3,554,031,385
1989-90	2,975,682,521	303,734,000	3,279,416,521

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and the Ministry of Health and Wellness Annual Report

### **A2.3 Description of 'Auxiliary' Health Expenses**

#### Auxiliary Expenses:

##### Ministry Support Services:

- Minister's Office
- Associate Minister's Office
- Deputy Minister's Office
- Public Communications
- Strategic Planning Services
- Health Accountability
- Alberta Well-Net Administration
- Population Health
- Workforce Services
- Finance and Corporate Support Services
- Program Services
- Health Facilities Review Committee
- Mental Health Patient Advocates Office
- Health Services Utilization Commission
- Premier's Advisory Council on Health
- Health Advisory and Appeal Services
- Standard Policy Committee on Health and Community Living

Health Services: Practitioner Services –  
Medical Services

Alternate Compensation Strategies  
Allied Health Services  
Extended Health Benefits  
Rural Initiatives  
Medical Education Allowances

Provincial Programs:

Human Tissue and Blood Services  
Equity Agreements  
Purchase of Vaccines and Sera  
Public Health Laboratories  
Blue Cross Benefits Programs  
Ambulance Services  
Out-of-Province Health Care Costs  
Alberta Aids to Daily Living Program  
Health Services Research  
Aboriginal Health Strategies  
Federal Nursing Stations  
Alberta Well-Net  
Community Support  
Primary Health Care Initiative  
Dedicated Program Funding

## Appendix 3: Advanced Education Adjustments

### A3.1 Direct Spending

#### Table A3.1 & A3.2

- Funding for all post-secondary institutions, as declared in the Public Accounts, the Department of Advanced Education Annual Report and the Ministry of Learning Annual Report, were summed to yield total institutional funding for each respective city.

**Table A3.1 – Total Calgary Institutional Financial Assistance, 1990-2002 (Actual \$)**

Year	Southern Alberta Institute of Technology	Alberta College of Art	University of Calgary	Hospital Based Nursing Education	Mount Royal College	Alberta Vocational College - Calgary	Total Institutional Assistance
2001-02	78,759,000	7,197,000	190,726,000	n/a	45,662,000	14,114,000	336,458,000
2000-01	71,019,000	6,610,000	181,600,000	n/a	37,797,000	12,848,000	309,874,000
1999-00	63,559,000	6,858,000	166,264,000	n/a	32,106,000	11,163,000	279,950,000
1998-99	61,173,000	5,914,000	170,758,000	n/a	31,507,000	11,016,000	280,368,000
1997-98	65,028,000	6,104,000	160,974,000	n/a	32,232,000	11,979,000	276,317,000
1996-97	54,449,000	5,464,000	138,669,000	n/a	27,271,000	2,441,000	228,294,000
1995-96	56,784,000	5,695,000	143,109,000	108,000	28,202,000	7,882,000	241,780,000
1994-95	60,419,000	6,083,000	151,583,000	3,791,000	29,237,000	7,692,000	258,805,000
1993-94	64,990,000	6,632,000	163,626,000	4,233,000	31,560,000	8,762,000	279,803,000
1992-93	64,315,197	6,576,720	162,791,401	4,233,190	31,355,714	8,889,446	278,161,668
1991-92	61,990,253	6,245,998	157,825,697	4,109,893	30,069,329	8,753,935	268,995,105
1990-91	60,002,031	5,789,707	150,997,235	4,034,911	29,507,308	8,425,679	258,756,871
1989-90	57,633,162	5,521,420	144,524,258	3,770,423	28,376,443	8,015,222	247,840,928

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

**Table A3.2 – Total Edmonton Institutional Financial Assistance, 1990-2002 (Actual \$)**

Year	University of Alberta	Northern Alberta Institute of Technology	Alberta Vocational College / NorQuest College	Concordia College	King's College	Grant MacKewan College	Hospital Based Nursing Education	Alberta College	Total Edmonton Institutional Financial Assistance
2001-02	287,420,000	83,723,000	17,515,000	5,407,000	2,006,000	44,058,000	n/a	2,324,000	442,453,000
2000-01	262,252,000	78,913,000	16,354,000	5,358,000	2,212,000	36,110,000	n/a	4,239,000	405,438,000
1999-00	249,092,000	72,538,000	13,237,000	4,849,000	1,657,000	31,889,000	n/a	169,000	373,431,000
1998-99	264,324,000	70,859,000	13,276,000	4,887,000	1,667,000	31,065,000	n/a	n/a	386,078,000
1997-98	252,776,000	72,545,000	15,190,000	4,482,000	1,413,000	31,589,000		289,000	378,284,000
1996-97	218,950,000	62,445,000	18,474,000	3,616,000	1,090,000	24,417,000	n/a	n/a	328,992,000
1995-96	226,272,000	65,011,000	10,946,000	3,782,000	1,141,000	24,845,000	1,067,000	n/a	333,064,000
1994-95	240,468,000	69,120,000	10,280,000	4,086,000	1,232,000	25,342,000	7,778,000	n/a	358,306,000
1993-94	261,372,000	74,541,000	11,540,000	4,405,000	1,328,000	27,086,000	8,623,000	n/a	388,895,000
1992-93	261,142,226	73,943,857	12,086,964	4,049,818	1,221,230	25,421,216	8,704,754	n/a	386,570,065
1991-92	253,133,620	72,262,598	11,480,137	3,247,633	978,282	24,271,693	8,778,857	n/a	374,152,820
1990-91	244,361,236	67,960,923	11,189,128	2,970,201	804,155	23,854,818	8,793,036	n/a	359,933,497
1989-90	237,251,666	64,234,263	10,673,992	2,627,089	674,986	22,701,124	8,678,736	n/a	346,841,856

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

Table A3.3 & Table A3.4

Column [1] = Total amount of institutional assistance provided to Calgary and Edmonton based institutions respectively.

Column [2] = Total amount of province-wide institutional funding as declared in the Public Accounts, the Department of Advanced Education Annual Report and the Ministry of Learning Annual Report.

Column [3] = Column [1] divided by Column [2]. Percentage of total institutional funding that is spent on Calgary and Edmonton based institutions respectively.

**Table A3.3 – Calgary's Portion of Total Institutional Assistance, 1990-2002 (Actual \$)**

Year	Calgary Institutional Assistance	Total Department Institutional Funding	% Calgary
2001-02	336,458,000	1,029,240,000	0.326899460
2000-01	309,874,000	949,806,000	0.326249782
1999-00	279,950,000	869,067,000	0.322127063
1998-99	280,368,000	879,392,000	0.318820276
1997-98	276,317,000	860,809,000	0.320996876
1996-97	228,294,000	740,584,000	0.308262128
1995-96	241,780,000	769,948,000	0.314021207
1994-95	258,805,000	821,281,000	0.315123569
1993-94	279,803,000	889,513,000	0.314557516
1992-93	278,161,668	885,144,000	0.314255836
1991-92	268,995,105	854,223,000	0.314900330
1990-91	258,756,871	815,624,000	0.317250192
1989-90	247,840,928	784,787,000	0.315806618

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

**Table A3.4 – Edmonton's Portion of Total Institutional Assistance, 1990-2002 (Actual \$)**

Year	Edmonton Institutional Assistance	Total Department Institutional Funding	% Edmonton
2001-02	442,453,000	1,029,240,000	0.429883215
2000-01	405,438,000	949,806,000	0.426864012
1999-00	373,431,000	869,067,000	0.429691842
1998-99	386,078,000	879,392,000	0.439028329
1997-98	378,284,000	860,809,000	0.439451725
1996-97	328,992,000	740,584,000	0.444233200
1995-96	333,064,000	769,948,000	0.432579863
1994-95	358,306,000	821,281,000	0.436276987
1993-94	388,895,000	889,513,000	0.437199906
1992-93	386,570,065	885,144,000	0.436731272
1991-92	374,152,820	854,223,000	0.438003683
1990-91	359,933,497	815,624,000	0.441298315
1989-90	346,841,856	784,787,000	0.441956679

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

### A3.2 Auxiliary Spending

Table A3.5

Column [1] = Total provincial advanced education spending

Column [2] = Total amount of institutional assistance provided to institutions province-wide

Column [3] = Column [1] minus Column [2]. Total amount of advanced education budget spent on 'auxiliary' services.

- The Department of Advanced Education was amalgamated with the Department of Education in the 1999/00 year to become the Ministry of Learning. The Ministry of Learning did not declare a specific amount funding for advanced education. Thus, auxiliary spending was carried forward for the remaining three years to accommodate this accounting change.

**Table A3.5 – Advanced Education Auxiliary Spending, 1990-2002 (Actual \$)**

Year	[1] Total Advanced Education Budget	[2] Institutional Funding	[3] Auxiliary Spending
2001-02	n/a	1,029,240,000	<b>381,968,000</b>
2000-01	n/a	949,806,000	<b>381,968,000</b>
1999-00	n/a	869,067,000	<b>381,968,000</b>
1998-99	1,261,360,000	879,392,000	381,968,000
1997-98	1,151,000,000	860,809,000	290,191,000
1996-97	1,019,962,000	740,584,000	279,378,000
1995-96	1,020,173,000	769,948,000	250,225,000
1994-95	1,099,286,000	821,281,000	278,005,000
1993-94	1,188,035,000	889,513,000	298,522,000
1992-93	1,169,347,491	885,144,000	284,203,491
1991-92	1,039,322,054	854,223,000	185,099,054
1990-91	997,644,723	815,624,000	182,020,723
1989-90	979,704,790	784,787,000	194,917,790

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

Table A3.6 & A3.7

Column [1] = Total spending on auxiliary advanced education services as calculated in Table A3.5.

Column [2] = % of direct institutional spending used as a proxy for % of auxiliary spending for the cities of Calgary and Edmonton respectively.

Column [3] = Column [2] multiplied by Column [1]. Total auxiliary advanced education spending that is spent within Calgary and Edmonton.

Table A3.6 - Calgary Auxiliary Spending, 1990-2002 (Actual \$)

Year	[1] Auxiliary Spending	[2] % Calgary	[3] Auxiliary Spending
2001-02	381,968,000	0.326899460	124,865,133
2000-01	381,968,000	0.326249782	124,616,977
1999-00	381,968,000	0.322127063	123,042,230
1998-99	381,968,000	0.318820276	121,779,143
1997-98	290,191,000	0.320996876	93,150,404
1996-97	279,378,000	0.308262128	86,121,657
1995-96	250,225,000	0.314021207	78,575,956
1994-95	278,005,000	0.315123569	87,605,928
1993-94	298,522,000	0.314557516	93,902,339
1992-93	284,203,491	0.314255836	89,312,606
1991-92	185,099,054	0.314900330	58,287,753
1990-91	182,020,723	0.317250192	57,746,109
1989-90	194,917,790	0.315806618	61,556,328

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

**Table A3.7 - Edmonton Auxiliary Spending, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Auxiliary Spending	% Edmonton	Auxiliary Spending
2001-02	381,968,000	0.429883215	164,201,632
2000-01	381,968,000	0.426864012	163,048,393
1999-00	381,968,000	0.429691842	164,128,533
1998-99	381,968,000	0.439028329	167,694,773
1997-98	290,191,000	0.439451725	127,524,936
1996-97	279,378,000	0.444233200	124,108,983
1995-96	250,225,000	0.432579863	108,242,296
1994-95	278,005,000	0.436276987	121,287,184
1993-94	298,522,000	0.437199906	130,513,790
1992-93	284,203,491	0.436731272	124,120,552
1991-92	185,099,054	0.438003683	81,074,067
1990-91	182,020,723	0.441298315	80,325,438
1989-90	194,917,790	0.441956679	86,145,219

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

Table A3.8 & A3.9

Column [1] = Total direct spending distributed to city-based institutions.

Column [2] = Total auxiliary spending distributed to institutions.

Column [3] = Column [1] plus Column [2]. Total estimated advanced education spending distributed to respective cities. These totals are used in the balances.

**Table A3.8 - Advanced Education Spending - Calgary, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Institutional Assistance	Auxiliary Spending	Total Advanced Education Spending
2001-02	336,458,000	124,865,133	461,323,133
2000-01	309,874,000	124,616,977	434,490,977
1999-00	279,950,000	123,042,230	402,992,230
1998-99	280,368,000	121,779,143	402,147,143
1997-98	276,317,000	93,150,404	369,467,404
1996-97	228,294,000	86,121,657	314,415,657
1995-96	241,780,000	78,575,956	320,355,956
1994-95	258,805,000	87,605,928	346,410,928
1993-94	279,803,000	93,902,339	373,705,339
1992-93	278,161,668	89,312,606	367,474,274
1991-92	268,995,105	58,287,753	327,282,858
1990-91	258,756,871	57,746,109	316,502,980
1989-90	247,840,928	61,556,328	309,397,256

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

**Table A3.9 - Advanced Education Spending - Edmonton, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Institutional Assistance	Auxiliary Spending	Total Advanced Education Spending
2001-02	442,453,000	164,201,632	606,654,632
2000-01	405,438,000	163,048,393	568,486,393
1999-00	373,431,000	164,128,533	537,559,533
1998-99	386,078,000	167,694,773	553,772,773
1997-98	378,284,000	127,524,936	505,808,936
1996-97	328,992,000	124,108,983	453,100,983
1995-96	333,064,000	108,242,296	441,306,296
1994-95	358,306,000	121,287,184	479,593,184
1993-94	388,895,000	130,513,790	519,408,790
1992-93	386,570,065	124,120,552	510,690,617
1991-92	374,152,820	81,074,067	455,226,887
1990-91	359,933,497	80,325,438	440,258,935
1989-90	346,841,856	86,145,219	432,987,075

Source: Derived from the Public Accounts, the Department of Advanced Education Annual Report, and the Ministry of Learning Annual Report

### A3.3 Description of 'Auxiliary' Advanced Education Expenses

#### Auxiliary Expenditures:

##### Ministry Support Services:

- Minister's Office
- Minister's Communications
- Deputy Minister's Office
- Finance and Administrative Services
- Communications
- Human Resource services
- Information and Policy Services
- Administrative Systems Supports

##### Assistance to Further Educational Institutions

- Program Support
- Administrative Support
- Immigrant Settlement Support
- Community Consortia
- Special Purpose Grants
- Community Adult Learning Programs
- Federal/Provincial cost-shared programs
- Adult Development Programs
- Other Program Support
- Inter-Provincial Programs

##### Financial Assistance to Students

- Administrative Support
- Alberta Educational Equalization Grants
- Maintenance Grants
- Bursary Programs
- Skills Development Training Programs
- Interest

##### Labor Market Services

- Occupational Training
- Program Development and Coordination
- Apprenticeship Delivery
- Marketing Apprenticeship

##### Labor Market Preparation

- Divisional and regional support
- Career Consulting and Preparation
- Employment Preparation
- Work Experience Programs
- Rehabilitation Training

## Appendix 4: Education Adjustments

### A4.1 Direct Spending

#### Table A4.1 & A4.2

Column [1] = Provincial public school funding as declared in the respective public school board annual reports of each city.

Column [2] = Provincial catholic school funding as declared in the respective catholic school board annual reports of each city.

Column [3] = Column [1] plus Column [2]. Total provincial education funding provided to municipal school boards in each city.

Column [4] = Municipal education requisitions as declared in each respective city's annual reports.

Column [5] = Column [3] minus Column [4]. Net total provincial education funding distributed to cities.

**Table A4.1 – Calgary Education Net Funding, 1990-2002 (Actual \$)**

	[1]	[2]	[3]	[4]	[5]
Year	Cal.Public	Cal. Cath	Cal.Total	Cal. Requisition	Net
2001-02	609,497,000	255,957,115	865,454,115	402,978,000	462,476,115
2000-01	574,684,000	237,077,228	811,761,228	378,961,000	432,800,228
1999-00	536,450,000	223,388,739	759,838,739	389,181,000	370,657,739
1998-99	512,590,000	208,774,994	721,364,994	380,450,000	340,914,994
1997-98	481,930,000	197,020,969	678,950,969	358,059,000	320,891,969
1996-97	476,582,000	184,169,925	660,751,925	352,532,000	308,219,925
1995-96	468,971,000	177,275,696	646,246,696	334,238,000	312,008,696
1994-95	467,861,000	172,174,108	640,035,108	335,275,000	304,760,108
1993-94	497,820,000	169,275,571	667,095,571	339,164,000	327,931,571
1992-93	501,416,000	158,335,808	659,751,808	331,347,000	328,404,808
1991-92	473,160,000	147,863,258	621,023,258	320,801,000	300,222,258
1990-91	443,496,000	135,726,701	579,222,701	290,756,000	288,466,701
1989-90	412,370,000	132,613,441	544,983,441	263,202,000	281,781,441

Source: Derived from the Public Accounts, the Government of Alberta Annual Report, the City of Calgary Annual Report, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

**Table A4.2 – Edmonton Education Net Funding, 1990-2002 (Actual \$)**

	[1]	[2]	[3]	[4]	[5]
Year	Ed. Public	Ed. Catholic	Ed. Total	Ed. Requisitions	Net
2001-02	474,912,000	191,090,337	666,002,337	235,684,000	430,318,337
2000-01	467,048,000	188,709,425	655,757,425	209,809,000	445,948,425
1999-00	433,377,000	170,542,079	603,919,079	244,892,000	359,027,079
1998-99	411,090,951	162,414,342	573,505,293	240,425,000	333,080,293
1997-98	383,355,841	152,613,244	535,969,085	232,682,000	303,287,085
1996-97	374,132,601	152,510,073	526,642,674	246,727,000	279,915,674
1995-96	377,471,368	147,670,474	525,141,842	267,177,000	257,964,842
1994-95	366,309,623	151,341,906	517,651,529	273,984,000	243,667,529
1993-94	396,902,992	161,051,116	557,954,108	272,045,000	285,909,108
1992-93	396,642,377	159,413,457	556,055,834	267,913,000	288,142,834
1991-92	377,745,759	150,958,803	528,704,562	258,991,000	269,713,562
1990-91	355,019,175	141,618,472	496,637,647	246,608,000	250,029,647
1989-90	329,248,523	139,050,202	468,298,725	221,901,000	246,397,725

Source: Derived from the Public Accounts, the Government of Alberta Annual Report, the City of Edmonton Annual Report, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

## A4.2 Auxiliary Spending

Table A4.3

Column [1] = Total provincial education spending as declared in the Public Accounts, and the Department of Education Annual Report.

Column [2] = Total school board assistance provided to school districts province-wide as declared in the Public Accounts, the Department of Education Annual Report.

Column [3] = Column [1] minus Column [2]. Total amount of education budget spent on ‘auxiliary’ services.

- The Department of Education was amalgamated with the Department of Education in the 1999/00 year to become the Ministry of Learning. The Ministry of Learning did not declare a specific amount funding for primary and secondary education. Consequently, it is not possible to calculate auxiliary spending after 1998/99.

**Table A4.3 – Auxiliary Education Expenditure, 1990-1999 (Actual \$)**

	[1]	[2]	[3]
Year	Total Education Expenditure	Financial Assistance to Schools	Auxiliary Expenditure
1998-99	1,907,913,000	1,621,714,000	286,199,000
1997-98	1,759,647,000	1,556,687,000	202,960,000
1996-97	1,547,783,000	1,350,738,000	197,045,000
1995-96	1,490,896,000	1,297,320,000	193,576,000
1994-95	1,533,154,000	1,279,704,000	253,450,000
1993-94	1,689,424,000	1,409,549,000	279,875,000
1992-93	1,634,840,287	1,377,515,071	257,325,216
1991-92	1,531,034,661	1,301,974,911	229,059,750
1990-91	1,467,054,292	1,244,840,113	222,214,179
1989-90	1,388,684,568	1,244,611,737	144,072,831

Source: Derived from the Public Accounts, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

Table A4.4 & Table A4.5

Column [1] = Total amount of province-wide institutional funding as declared in the Public Accounts, and the Department of Education Annual Report.

Column [2] = Total amount of institutional assistance provided to Calgary and Edmonton based school boards respectively.

Column [3] = Column [1] divided by Column [2]. Percentage of total institutional funding that is spent on either Calgary or Edmonton based school boards.

**Table A4.4 – Calgary's Share of Education Expenditure, 1990-1999 (Actual \$)**

	[1]	[2]	[3]
Year	Financial Assistance to Schools	Total Calgary Grants	% Calgary
1998-99	1,621,714,000	340,914,994	0.210218937
1997-98	1,556,687,000	320,891,969	0.206137759
1996-97	1,350,738,000	308,219,925	0.228186314
1995-96	1,297,320,000	312,008,696	0.240502494
1994-95	1,279,704,000	304,760,108	0.238148906
1993-94	1,409,549,000	327,931,571	0.232649997
1992-93	1,377,515,071	328,404,808	0.238403786
1991-92	1,301,974,911	300,222,258	0.230589895
1990-91	1,244,840,113	288,466,701	0.231729921
1989-90	1,244,611,737	281,781,441	0.226401080

Source: Derived from the Public Accounts, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

**Table A4.5 – Edmonton's Share of Education Expenditure, 1990-1999 (Actual \$)**

	[1]	[2]	[3]
Year	Financial Assistance to Schools	Total Edmonton Grants	% Edmonton
1998-99	1,621,714,000	333,080,293	0.205387814
1997-98	1,556,687,000	303,287,085	0.194828559
1996-97	1,350,738,000	279,915,674	0.207231657
1995-96	1,297,320,000	257,964,842	0.198844419
1994-95	1,279,704,000	243,667,529	0.190409289
1993-94	1,409,549,000	285,909,108	0.202837296
1992-93	1,377,515,071	288,142,834	0.209175812
1991-92	1,301,974,911	269,713,562	0.207157265
1990-91	1,244,840,113	250,029,647	0.200852820
1989-90	1,244,611,737	246,397,725	0.197971559

Source: Derived from the Public Accounts, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

Table A4.6 & A4.7

Column [1] = Total spending on auxiliary education services calculated in Table A4.3.

Column [2] = % of direct institutional spending used as a proxy for % of auxiliary spending for the cities of Calgary and Edmonton respectively.

Column [3] = Column [2] multiplied by Column [3]. Total estimated auxiliary education spending that is spent within Calgary and Edmonton.

**Table A4.6 - Calgary Auxiliary Education Expenditure, 1990-1999 (Actual \$)**

Year	[1] Auxiliary Expenditure	[2] % Calgary	[3] Calgary Auxiliary
1998-99	286,199,000	0.210218937	60,164,450
1997-98	202,960,000	0.206137759	41,837,719
1996-97	197,045,000	0.228186314	44,962,972
1995-96	193,576,000	0.240502494	46,555,511
1994-95	253,450,000	0.238148906	60,358,840
1993-94	279,875,000	0.232649997	65,112,918
1992-93	257,325,216	0.238403786	61,347,306
1991-92	229,059,750	0.230589895	52,818,864
1990-91	222,214,179	0.231729921	51,493,674
1989-90	144,072,831	0.226401080	32,618,245

Source: Derived from the Public Accounts, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

**Table A4.7 - Edmonton Auxiliary Education Expenditure, 1990-1999 (Actual \$)**

Year	[1] Auxiliary Expenditure	[2] % Edmonton	[3] Edmonton Auxiliary
1998-99	286,199,000	0.205387814	58,781,787
1997-98	202,960,000	0.194828559	39,542,404
1996-97	197,045,000	0.207231657	40,833,962
1995-96	193,576,000	0.198844419	38,491,507
1994-95	253,450,000	0.190409289	48,259,234
1993-94	279,875,000	0.202837296	56,769,088
1992-93	257,325,216	0.209175812	53,826,211
1991-92	229,059,750	0.207157265	47,451,391
1990-91	222,214,179	0.200852820	44,632,344
1989-90	144,072,831	0.197971559	28,522,323

Source: Derived from the Public Accounts, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

Table A4.8 & A4.9

Column [1] = Total direct spending distributed city-based school boards.

Column [2] = Total auxiliary spending distributed to cities.

Column [3] = Column [1] plus Column [2]. Total estimated education spending distributed to respective cities. These totals are used in the balances.

Table A4.8 - Education Spending - Calgary, 1990-2002 (Actual \$)

Year	School Board Spending	Auxiliary Spending	Total Education Spending
2001-02	462,476,115	60,164,450	522,640,565
2000-01	432,800,228	60,164,450	492,964,678
1999-00	370,657,739	60,164,450	430,822,189
1998-99	340,914,994	60,164,450	401,079,444
1997-98	320,891,969	41,837,719	362,729,688
1996-97	308,219,925	44,962,972	353,182,897
1995-96	312,008,696	46,555,511	358,564,207
1994-95	304,760,108	60,358,840	365,118,948
1993-94	327,931,571	65,112,918	393,044,489
1992-93	328,404,808	61,347,306	389,752,114
1991-92	300,222,258	52,818,864	353,041,122
1990-91	288,466,701	51,493,674	339,960,375
1989-90	281,781,441	32,618,245	314,399,686

Source: Derived from the Public Accounts, the Government of Alberta Annual Report, the City of Calgary Annual Report, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

**Table A4.9 - Education Spending - Edmonton, 1990-2002 (Actual \$)**

Year	School Board Spending	Auxiliary Spending	Total Education Spending
2001-02	430,318,337	58,781,787	489,100,124
2000-01	445,948,425	58,781,787	504,730,212
1999-00	359,027,079	58,781,787	417,808,866
1998-99	333,080,293	58,781,787	391,862,080
1997-98	303,287,085	39,542,404	342,829,489
1996-97	279,915,674	40,833,962	320,749,636
1995-96	257,964,842	38,491,507	296,456,349
1994-95	243,667,529	48,259,234	291,926,763
1993-94	285,909,108	56,769,088	342,678,196
1992-93	288,142,834	53,826,211	341,969,045
1991-92	269,713,562	47,451,391	317,164,953
1990-91	250,029,647	44,632,344	294,661,991
1989-90	246,397,725	28,522,323	274,920,048

Source: Derived from the Public Accounts, the Government of Alberta Annual Report, the City of Edmonton Annual Report, the Department of Education Annual Report, the Ministry of Learning Annual Report, and various school board annual reports.

### **A4.3 Description of 'Auxiliary' Education Expenditures**

#### Auxiliary Expenditures:

Ministry Support Services  
 Minister's Office  
 Deputy Minister's Office  
 Assistant Deputy Minister  
 Financial Operations and Services  
 Educational Grants to Individuals  
 School Finance and Facilities Services  
 Communications  
 Human Resource Services  
 Policy and Planning  
 Information Services  
 Corporate Services and Information

#### Private School Support

Instruction  
 Early Childhood Services

#### Early Childhood Services – Private

Operator Support  
 Early Childhood Services

#### Pensions and Learning Resources

Teacher's Pensions  
Learning Resource Subsidies

Development and Delivery of Education Programs

Student Programs and Evaluation  
Assistant Deputy Minister  
Student Evaluation Services  
Curriculum Standards  
Language Services  
Alberta Distance Learning  
Distance Education

Regional Services

Assistant Deputy Minister  
National and International Education  
Native Education  
Regional Offices  
Special Education  
Teacher's Certification and Development  
Appeals and Student Attendance Secretariat

Premier's Council on Student With Disabilities

Premiers Council on Students With Disabilities

## Appendix 5: Transportation Adjustments

### A5.1 Benefits Estimation

*Table A5.1*

- Municipal populations were divided by the provincial population to yield each cities share of Alberta's population. For Calgary, the population of the city census metropolitan area (CMA) was used – for Edmonton, the City of Edmonton population totals were used. The Calgary CMA and the City of Edmonton population numbers will be used, respectively, in the remainder of the appendices.

**Table A5.1 - Provincial Population Distribution, 1990-2002**

Year	Alberta	Calgary	Edmonton	Calgary/Alberta	Edmonton/Alberta
1990	2,469,069	692,885	605,538	0.280626017	0.245249525
1991	2,510,001	708,583	614,665	0.282303872	0.244886357
1992	2,543,033	717,133	618,195	0.281999093	0.243093582
1993	2,574,890	727,719	626,999	0.282621394	0.243505159
1994	2,601,282	738,184	623,400	0.283776999	0.239651064
1995	2,615,873	749,073	620,000	0.286356792	0.237014565
1996	2,636,489	767,059	616,306	0.290939579	0.233760126
1997	2,695,474	790,498	626,500	0.293268642	0.232426653
1998	2,730,818	819,334	636,100	0.300032444	0.232933868
1999	2,819,423	842,388	648,284	0.298780282	0.229934990
2000	2,879,743	860,749	658,400	0.298897853	0.228631513
2001	2,907,882	876,519	666,104	0.301428669	0.229068442
2002	2,993,496	904,987	677,200	0.302317758	0.226223787

Source: Alberta Municipal Affairs, & Edmonton Planning and Development

*Tables A5.2 & A5.3*

Column [1] = Total provincial spending on transportation and utilities as declared in the Public Accounts and the Government of Alberta Annual Report.

Column [2] = Each city's respective share of the provincial population.

Column [3] = Column [1] multiplied by Column [2]. Each city's respective per capita share of provincial transportation expenditures. These totals are used in the balances.

**Table A5.2 - Transportation Spending - Calgary, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Provincial Spending	% Calgary	Total Spending
1990	1,043,620,000	0.280626017	292,866,924
1991	983,644,000	0.282303872	277,686,509
1992	880,806,000	0.281999093	248,386,493
1993	664,232,000	0.282621394	187,726,173
1994	592,000,000	0.283776999	167,995,984
1995	515,000,000	0.286356792	147,473,748
1996	566,000,000	0.290939579	164,671,802
1997	578,000,000	0.293268642	169,509,275
1998	608,000,000	0.300032444	182,419,726
1999	648,000,000	0.298780282	193,609,623
2000	1,116,000,000	0.298897853	333,570,004
2001	1,648,000,000	0.301428669	496,754,446
2002	1,102,000,000	0.302317758	333,154,170

Source: Derived from the Public Accounts, the Government of Alberta Annual Report

**Table A5.3 - Transportation Spending - Edmonton, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Provincial Spending	% Edmonton	Total Spending
1990	1,043,620,000	0.245249525	255,947,310
1991	983,644,000	0.244886357	240,880,995
1992	880,806,000	0.243093582	214,118,285
1993	664,232,000	0.243505159	161,743,919
1994	592,000,000	0.239651064	141,873,430
1995	515,000,000	0.237014565	122,062,501
1996	566,000,000	0.233760126	132,308,231
1997	578,000,000	0.232426653	134,342,605
1998	608,000,000	0.232933868	141,623,792
1999	648,000,000	0.22993499	148,997,874
2000	1,116,000,000	0.228631513	255,152,769
2001	1,648,000,000	0.229068442	377,504,793
2002	1,102,000,000	0.226223787	249,298,613

Source: Derived from the Public Accounts, the Government of Alberta Annual Report

## Appendix 6: Social Services Adjustments

### A6.1 Income Adjusted Benefits Estimation

#### Table A6.1

- Average incomes for Calgary and Edmonton earners were divided the provincial average income to yield each city's respective wage premium/handicap over the provincial average.

Table A6.1 – Municipal Wage Premiums, 1990-2002 (Actual \$)

YEAR	Alberta	Calgary	Edmonton	Calgary/Alberta	Edmonton/Alberta
1990	27,403	29,560	28,221	1.078714009	1.0298507463
1991	27,509	29,552	27,870	1.074266604	1.0131229779
1992	26,519	28,648	26,825	1.080282062	1.0115388966
1993	26,727	27,620	27,887	1.033411906	1.0434018034
1994	26,498	28,330	26,304	1.069137293	0.9926786927
1995	25,801	27,426	25,548	1.062982055	0.9901941785
1996	26,996	30,087	26,268	1.114498444	0.9730330419
1997	28,477	32,719	26,958	1.148962320	0.9466587070
1998	29,499	33,399	28,565	1.132207871	0.9683379098
1999	28,774	31,588	28,901	1.097796622	1.0044137068
2000	30,009	33,504	29,540	1.116465060	0.9843713553
2001	30,339	33,968	29,822	1.119615017	0.9829592274
2002	30,668	34,431	30,105	1.122701187	0.9816421025

Source: Statistics Canada - Canadian Labour Force Review

#### Table A6.2 & A6.3

Column [1] = Each city's respective wage premium/handicap as calculated in Table A6.1.

Column [2] =  $(1 - \text{Column [1]}) - 1$ . Each cities wage premium reversed to become a wage handicap. Each cities wage handicap reversed to become a wage premium.

Column [3] = Each city's respective share of the provincial population.

Column [4] = Column [2] multiplied by Column [3]. Each city's income adjusted share of the provincial population.

**Table A6.2 – Income Adjusted Share of Per Capita Benefits - Calgary (1990-2002)**

	[1]	[2]	[3]	[4]
Year	Calgary / Alberta	1 - Wage Premium	Population	Income Adjusted Share
1990	1.0787140094	0.9212859906	0.280626017	0.2585368184
1991	1.0742666037	0.9257333963	0.282303872	0.2613381218
1992	1.0802820619	0.9197179381	0.281999093	0.2593596245
1993	1.0334119056	0.9665880944	0.282621394	0.2731784742
1994	1.0691372934	0.9308627066	0.283776999	0.2641574255
1995	1.0629820550	0.9370179450	0.286356792	0.2683214526
1996	1.1144984442	0.8855015558	0.290939579	0.2576274499
1997	1.1489623205	0.8510376795	0.293268642	0.2495826647
1998	1.1322078715	0.8677921285	0.300032444	0.2603657936
1999	1.0977966220	0.9022033780	0.298780282	0.2695605800
2000	1.1164650605	0.8835349395	0.298897853	0.2640866965
2001	1.1196150170	0.8803849830	0.301428669	0.2653732734
2002	1.1227011869	0.8772988131	0.302317758	0.2652230105

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table A6.3 – Income Adjusted Share of Per Capita Benefits - Edmonton (1990-2002)**

	[1]	[2]	[3]	[4]
Year	Edmonton / Alberta	1 - Wage Premium	Population	Income Adjusted Share
1990	1.0298507463	0.9701492537	0.2452495252	0.2379286439
1991	1.0131229779	0.9868770221	0.2448863566	0.2416727184
1992	1.0115388966	0.9884611034	0.2430935816	0.2402885499
1993	1.0434018034	0.9565981966	0.2435051594	0.2329365964
1994	0.9926786927	1.0073213073	0.2396510644	0.2414056234
1995	0.9901941785	1.0098058215	0.2370145645	0.2393386871
1996	0.9730330419	1.0269669581	0.2337601257	0.2400639252
1997	0.9466587070	1.0533412930	0.2324266530	0.2448245912
1998	0.9683379098	1.0316620902	0.2329338682	0.2403090413
1999	1.0044137068	0.9955862932	0.2299349902	0.2289201246
2000	0.9843713553	1.0156286447	0.2286315133	0.2322047140
2001	0.9829592274	1.0170407726	0.2290684423	0.2329719455
2002	0.9816421025	1.0183578975	0.2262237865	0.2303767796

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

Table A6.4 & A6.5

Column [1] = Total provincial spending on social services as declared in the Public Accounts and the Government of Alberta Annual Report.

Column [2] = Each city's respective income adjusted share of the provincial population.

Column [3] = Column [1] multiplied by Column [2]. Each city's respective income adjusted per capita share of provincial social services expenditures. These totals are used in the balances.

**Table A6.4 - Social Services Spending - Calgary, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Provincial Spending	% Calgary (adjusted)	Total Spending
1990	1,501,717,000	0.258536818	388,249,135
1991	1,567,493,000	0.261338122	409,645,677
1992	1,745,535,000	0.259359625	452,721,302
1993	1,884,996,000	0.273178474	514,940,331
1994	1,721,000,000	0.264157426	454,614,929
1995	1,491,000,000	0.268321453	400,067,286
1996	1,456,000,000	0.257627450	375,105,567
1997	1,511,000,000	0.249582665	377,119,406
1998	1,564,000,000	0.260365794	407,212,101
1999	1,600,000,000	0.269560580	431,296,928
2000	1,717,000,000	0.264086697	453,436,858
2001	1,788,000,000	0.265373273	474,487,413
2002	1,942,000,000	0.265223010	515,063,086

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table A6.5 - Social Services Spending - Edmonton, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Provincial Spending	% Edmonton (adjusted)	Total Spending
1990	1,501,717,000	0.237928644	357,301,489
1991	1,567,493,000	0.241672718	378,820,294
1992	1,745,535,000	0.240288550	419,432,074
1993	1,884,996,000	0.232936596	439,084,552
1994	1,721,000,000	0.241405623	415,459,078
1995	1,491,000,000	0.239338687	356,853,982
1996	1,456,000,000	0.240063925	349,533,075
1997	1,511,000,000	0.244824591	369,929,957
1998	1,564,000,000	0.240309041	375,843,341
1999	1,600,000,000	0.228920125	366,272,199
2000	1,717,000,000	0.232204714	398,695,494
2001	1,788,000,000	0.232971945	416,553,839
2002	1,942,000,000	0.230376780	447,391,706

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## Appendix 7: 'Other' Expenditures Adjustments

### A7.1 Benefits Estimation

#### Tables A7.1 & A7.2

Column [1] = Other provincial expenditures attributable to cities as calculated in Table A1.4.

Column [2] = Each city's respective share of the provincial population.

Column [3] = Column [1] multiplied by Column [2]. Each city's respective per capita share of 'other' provincial expenditures. These totals are used in the balances.

**Table A7.1 - Other Municipal Benefits – Calgary, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Other Municipal Benefits	Pop. Calgary / Pop. Alberta	Total
2001-02	2,490,000,000	0.302317758	752,771,218
2000-01	2,383,000,000	0.301428669	718,304,518
1999-00	2,267,000,000	0.298897853	677,601,433
1998-99	2,170,000,000	0.298780282	648,353,213
1997-98	2,127,000,000	0.300032444	638,169,009
1996-97	1,483,869,000	0.293268642	435,172,247
1995-96	1,606,694,000	0.290939579	467,450,876
1994-95	1,751,613,000	0.286356792	501,586,279
1993-94	1,801,590,000	0.283776999	511,249,804
1992-93	2,200,977,000	0.282621394	622,043,187
1991-92	3,918,768,000	0.281999093	1,105,089,022
1990-91	3,800,279,000	0.282303872	1,072,833,475
1989-90	3,813,075,000	0.280626017	1,070,048,051

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

**Table A7.2 - Other Municipal Benefits – Edmonton, 1990-2002 (Actual \$)**

	[1]	[2]	[3]
Year	Other Municipal Benefits	Pop. Edmonton/Pop. Alberta	Total
2001-02	2,490,000,000	0.226223787	563,297,228
2000-01	2,383,000,000	0.229068442	545,870,098
1999-00	2,267,000,000	0.228631513	518,307,641
1998-99	2,170,000,000	0.229934990	498,958,929
1997-98	2,127,000,000	0.232933868	495,450,338
1996-97	1,483,869,000	0.232426653	344,890,705
1995-96	1,606,694,000	0.233760126	375,580,991
1994-95	1,751,613,000	0.237014565	415,157,792
1993-94	1,801,590,000	0.239651064	431,752,961
1992-93	2,200,977,000	0.243505159	535,949,255
1991-92	3,918,768,000	0.243093582	952,627,348
1990-91	3,800,279,000	0.244886357	930,636,478
1989-90	3,813,075,000	0.245249525	935,154,833

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

## Appendix 8: Revenue Adjustments

### A8.1 Income Tax Adjustments

#### Table A8.1 & A8.2

Column [1] = Each city's respective wage premium/handicap as calculated in Table A6.1.

Column [2] = Each city's respective share of the provincial population.

Column [3] = Column [1] multiplied by Column [2]. Each city's income weighted share of the provincial population.

- These weighted averages are multiplied by provincial income tax collections and shown in Table 4.3 (Calgary) and Table 4.4 (Edmonton).

**Table A8.1 - Calgary's Weighted Share of Income Tax**

YEAR	Income Calgary / Income Alberta	Pop. Calgary / Pop. Alberta	Weighted Average
1990	1.078714009	0.280626017	0.30271522
1991	1.074266604	0.282303872	0.30326962
1992	1.080282062	0.281999093	0.30463856
1993	1.033411906	0.282621394	0.29206431
1994	1.069137293	0.283776999	0.30339657
1995	1.062982055	0.286356792	0.30439213
1996	1.114498444	0.290939579	0.32425171
1997	1.148962320	0.293268642	0.33695462
1998	1.132207871	0.300032444	0.33969910
1999	1.097796622	0.298780282	0.32799998
2000	1.116465060	0.298897853	0.33370901
2001	1.119615017	0.301428669	0.33748406
2002	1.122701187	0.302317758	0.33941251

Source: Derived from Alberta Municipal Affairs, Edmonton Planning and Development & Canadian Labour Force Review

**Table A8.2 - Edmonton's Weighted Share of Income Tax**

YEAR	Income Edmonton/Income Alberta	Pop. Edmonton/Pop. Alberta	Weighted Average
1990	1.029850746	0.245249525	0.25257041
1991	1.013122978	0.244886357	0.24809999
1992	1.011538897	0.243093582	0.24589861
1993	1.043401803	0.243505159	0.25407372
1994	0.992678693	0.239651064	0.23789651
1995	0.990194179	0.237014565	0.23469044
1996	0.973033042	0.233760126	0.22745633
1997	0.946658707	0.232426653	0.22002871
1998	0.968337910	0.232933868	0.22555870
1999	1.004413707	0.229934990	0.23094986
2000	0.984371355	0.228631513	0.22505831
2001	0.982959227	0.229068442	0.22516494
2002	0.981642103	0.226223787	0.22207079

Source: Derived from Alberta Municipal Affairs, Edmonton Planning and Development & Canadian Labour Force Review

## Appendix 9: “Rest of Alberta” Balances

### A9.1 “Rest of Alberta” Spending

*Table A9.1*

Column [1] = Total provincial spending

Column [2] = Total provincial spending in Edmonton and Calgary.

Column [3] = Column [1] minus Column [2]. Residual provincial spending that will be accrued to the “Rest of Alberta”.

**Table A9.1 - “Rest of Alberta” Spending, 1990-2002 (Actual \$)**

Year	Total Spending	Edmtn. Plus Calgary	“Rest” Spending
2001-02	20,174,000,000	8,877,532,700	11,296,467,300
2000-01	18,058,000,000	8,686,448,580	9,371,551,420
1999-00	16,303,000,000	7,859,313,911	8,443,686,089
1998-99	14,451,000,000	6,773,126,152	7,677,873,848
1997-98	13,705,000,000	6,369,667,014	7,335,332,986
1996-97	10,780,000,000	5,437,592,732	5,342,407,268
1995-96	10,821,000,000	5,323,415,455	5,497,584,545
1994-95	11,095,000,000	5,845,879,905	5,249,120,095
1993-94	11,313,000,000	6,093,926,577	5,219,073,423
1992-93	12,024,300,000	6,462,558,733	5,561,741,267
1991-92	14,238,456,000	7,126,111,951	7,112,344,049
1990-91	13,770,753,000	6,853,075,634	6,917,677,366
1989-90	13,335,118,000	6,616,240,551	6,718,877,449

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports

### A9.2 “Rest of Alberta” Revenues

*Table A9.2*

- “Rest of Alberta” population was divided by the provincial population to yield the “Rest’s” share of the provincial population.

**Table A9.2 - "Rest of Alberta" Population Share, 1990-2002**

	[1]	[2]	[3]
Year	Pop. Alberta	Pop. "Rest"	% "Rest"
2001-02	2,993,496	1,411,309	0.471458455
2000-01	2,907,882	1,365,259	0.469502889
1999-00	2,879,743	1,360,594	0.472470634
1998-99	2,819,423	1,328,751	0.471284727
1997-98	2,730,818	1,275,384	0.467033687
1996-97	2,695,474	1,278,476	0.474304705
1995-96	2,636,489	1,253,124	0.475300295
1994-95	2,615,873	1,246,800	0.476628644
1993-94	2,601,282	1,239,698	0.476571936
1992-93	2,574,890	1,220,172	0.473873447
1991-92	2,543,033	1,207,705	0.474907325
1990-91	2,510,001	1,186,753	0.472809772
1989-90	2,469,069	1,170,646	0.474124457

Source: Alberta Municipal Affairs

**Table A9.3**

- The "Rest's" wage handicap was multiplied by their proportion of the provincial population to yield the "Rest of Alberta's" income weighted share of the population.

**Table A9.3 - "Rest of Alberta" Income Weighted Share of Population, 1990-2002**

	[1]	[2]	[3]
Year	Inc. "Rest" / Inc. Alberta	% Pop. "Rest"	Weighted Share
2001-02	0.930127980	0.471458455	0.4385167006
2000-01	0.931519288	0.469502889	0.4373509970
1999-00	0.933883815	0.472470634	0.4412326778
1998-99	0.935846493	0.471284727	0.4410501595
1997-98	0.930858354	0.467033687	0.4347422096
1996-97	0.934033884	0.474304705	0.4430166656
1995-96	0.943176283	0.475300295	0.4482919655
1994-95	0.967036776	0.476628644	0.4609174270
1993-94	0.962513499	0.476571936	0.4587069219
1992-93	0.957770408	0.473873447	0.4538619646
1991-92	0.946422178	0.474907325	0.4494628249
1990-91	0.948860219	0.472809772	0.4486303838
1989-90	0.937969704	0.474124457	0.4447143771

Source: Derived from Alberta Municipal Affairs, Edmonton Planning and Development &amp; Canadian Labour Force Review

**Table A9.4 - Rural Accrued Revenues, 1990-2002 (Actual \$)**

Year	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96	1994-95	1993-94	1992-93	1991-92	1990-91	1989-90
<b>Income Taxes:</b>													
Personal income tax	4,503,000,000	4,288,000,000	5,100,000,000	4,601,000,000	3,877,000,000	3,445,000,000	3,177,000,000	3,063,000,000	2,877,000,000	2,793,778,000	3,057,079,000	2,796,209,000	2,535,664,000
Corporate income tax	2,229,000,000	2,023,000,000	1,255,000,000	1,659,000,000	1,848,000,000	1,407,000,000	1,332,000,000	1,073,000,000	854,000,000	636,842,000	730,723,000	803,472,000	648,389,000
Provincial Income Tax	<u>6,732,000,000</u>	<u>6,311,000,000</u>	<u>6,355,000,000</u>	<u>6,260,000,000</u>	<u>5,725,000,000</u>	<u>4,852,000,000</u>	<u>4,509,000,000</u>	<u>4,136,000,000</u>	<u>3,731,000,000</u>	<u>3,430,620,000</u>	<u>3,787,802,000</u>	<u>3,599,681,000</u>	<u>3,184,053,000</u>
Rural Income Tax Weight	<u>0.438516701</u>	<u>0.437350997</u>	<u>0.441232678</u>	<u>0.441050159</u>	<u>0.434742210</u>	<u>0.443016666</u>	<u>0.448291966</u>	<u>0.460917427</u>	<u>0.458706922</u>	<u>0.453861965</u>	<u>0.449462825</u>	<u>0.448630384</u>	<u>0.444714377</u>
<b>Rural Income Tax Revenue</b>	<u>2,952,094,428</u>	<u>2,760,122,142</u>	<u>2,804,033,668</u>	<u>2,760,973,998</u>	<u>2,488,899,150</u>	<u>2,149,516,861</u>	<u>2,021,348,473</u>	<u>1,906,354,478</u>	<u>1,711,435,526</u>	<u>1,557,027,933</u>	<u>1,702,476,187</u>	<u>1,614,926,269</u>	<u>1,415,994,147</u>
<b>Other Revenues:</b>													
<b>Other Taxes:</b>													
Fuel tax	585,000,000	581,000,000	568,000,000	547,000,000	558,000,000	545,000,000	527,000,000	514,000,000	494,000,000	519,157,000	481,941,000	390,765,000	286,150,000
Tobacco tax	373,000,000	340,000,000	339,000,000	341,000,000	330,000,000	317,000,000	311,000,000	322,000,000	312,000,000	313,114,000	322,078,000	275,080,000	235,290,000
Insurance corporations tax	134,000,000	119,000,000	117,000,000	101,000,000	-	100,000,000	96,000,000	105,000,000	82,000,000	76,835,000	71,804,000	62,465,000	59,054,000
Financial Institutions Capital Tax	-	-	-	-	-	36,000,000	35,000,000	42,000,000	43,000,000	34,547,000	40,937,000	37,888,000	-
Hotel room tax	56,000,000	52,000,000	48,000,000	-	-	37,000,000	33,000,000	32,000,000	27,000,000	28,160,000	25,845,000	24,428,000	24,174,000
Parl-mutuel tax	-	-	-	-	-	-	9,000,000	9,000,000	10,000,000	11,221,000	11,420,000	11,009,000	-
Other	2,000,000	38,000,000	35,000,000	77,000,000	216,500,000	5,000,000	-	-	24,000	1,000	-	-	9,795,000
School Property Tax	569,685,776	521,075,818	567,894,209	553,433,805	517,661,137	540,677,015	544,793,001	554,845,593	556,494,917	539,743,528	524,378,802	481,934,104	437,364,315
<b>Government Enterprises:</b>													
Alberta Liquor Control Board	507,000,000	468,000,000	470,000,000	485,000,000	402,000,000	440,000,000	484,000,000	430,000,000	434,000,000	411,500,000	430,500,000	408,000,000	383,000,000
Lottery Funds	1,105,000,000	988,000,000	857,000,000	770,000,000	705,000,000	456,000,000	385,000,000	492,000,000	113,000,000	25,000,000	225,000,000	-	-
Other	166,000,000	180,000,000	246,000,000	125,000,000	-	25,000,000	6,000,000	14,000,000	6,000,000	4,304,000	4,768,000	4,716,000	14,488,000
<b>Fees, Permits and Licenses:</b>													
Motor vehicle licenses	215,000,000	208,000,000	200,000,000	196,000,000	185,000,000	174,000,000	179,000,000	165,000,000	163,000,000	158,381,000	151,120,000	149,041,000	124,158,000
Health Care Premiums	708,000,000	680,000,000	653,000,000	680,000,000	633,000,000	600,000,000	590,000,000	542,000,000	466,007,000	434,476,000	416,676,000	344,262,000	303,734,000
Blue-Cross premiums	-	-	-	-	-	20,000,000	21,000,000	21,000,000	-	-	-	-	-
Less Alberta energy tax refund	- 320,000,000	- 345,000,000	-	-	-	-	-	-	-	-	-	-	-
Other Provincial Revenue	<u>4,100,685,776</u>	<u>3,830,075,818</u>	<u>4,100,894,209</u>	<u>3,875,433,805</u>	<u>3,547,161,137</u>	<u>3,295,677,015</u>	<u>3,220,793,001</u>	<u>3,242,845,593</u>	<u>2,706,501,917</u>	<u>2,556,462,528</u>	<u>2,706,468,802</u>	<u>2,189,588,104</u>	<u>1,877,207,315</u>
Rural Other Revenue Weight	<u>0</u>												
<b>Rural Other Revenue Total</b>	<u>1,933,302,981</u>	<u>1,798,231,662</u>	<u>1,937,552,085</u>	<u>1,826,432,764</u>	<u>1,656,643,745</u>	<u>1,563,155,114</u>	<u>1,530,843,864</u>	<u>1,545,633,097</u>	<u>1,289,842,860</u>	<u>1,211,439,710</u>	<u>1,285,321,860</u>	<u>1,035,258,652</u>	<u>890,029,900</u>
<b>Total Rural Paid Revenue</b>	<u>4,885,397,410</u>	<u>4,558,353,804</u>	<u>4,741,585,753</u>	<u>4,587,406,763</u>	<u>4,145,542,896</u>	<u>3,712,671,975</u>	<u>3,552,192,337</u>	<u>3,451,987,575</u>	<u>3,001,279,385</u>	<u>2,769,467,643</u>	<u>2,987,798,047</u>	<u>2,650,184,920</u>	<u>2,306,024,047</u>

Source: Derived from the Public Accounts, The Government of Alberta Annual Report, and various ministries' annual reports