

Research Project

Metropolitan Governance and Fiscal Cooperation Programs

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Introduction

Although there have been several reforms undertaken by provincial governments that targeted metropolitan areas and regional issues, few of them opted to implement regional multi-purpose regional bodies. In fact, over the last few years, only the Québec government decided to create metropolitan-wide structures, while in Ontario, the experiment of the Greater Toronto Service Board was abandoned. Most of those reforms undertaken were limited to local units without addressing metropolitan cooperation issues, or as it is the case in Ontario with the Places to Grow initiative, a plan was implemented, but without the creation of regional structure to implement and administer it.

In terms of fiscal and financial metropolitan cooperation, while examples of metropolitan-wide cost sharing programs are somewhat more frequently used; tax-base and revenue sharing programs remain a rarity in Canada. Consequently, in order to broaden our perspective, we decided to look into how these issues are tackled in the United States and in some European countries. That being said, by no means is this an exhaustive inventory of existing measures, but we consider that it does provide an interesting, and hopefully helpful, insight on the subject.

Finally, we have undertaken an exploratory overview of the literature on the subject of regional impacts of industrial investments (appendix 1). Unfortunately, we did not find many cases of recent literature on the impacts of major industrial investments on municipal public services. However, we did find some older assessment models used to measure the impacts of economic growth, cases of regional growth distribution as well as fiscal impact models that will, hopefully be helpful to your research.

1. Models of Metropolitan Governance structures

There are several models of metropolitan regional structures in place in North America and Europe, but true metropolitan governments are less common. In the United States, for example, state governments have, over the years, opted for sectoral agencies that are specialized in one or a few functions (regional planning, economic development or transport). In some cases, states preferred the options, similar to many Canadian provinces, of amalgamations or consolidation of local governments. In Europe, constitutional constraints and/or political choices explains why amalgamation is not an option, so other avenues were explored, such as multi-purpose regional agencies and cooperation agreements. The following section presents examples of existing models, starting with heavier types of metropolitan structures and lighter multi-purpose regional bodies.¹

¹ For the purpose of this research, we have deliberately chosen not to include single-purpose agencies such as regional transit authorities, economic development promotion agencies or the US Metropolitan Planning Organizations (MPO). We have limited ourselves to multi-purpose bodies, more likely to undertake integrated planning activities or at least have an integrated vision of the metropolitan area.

1.1 “Heavier” structures

1.1.1 Unicity, Unigov and other types of consolidations

The first example on our list has several variations in Canada and in the United States. This model is actually the more literal case of a “city-region” as the city is the region. It is also the most complete level of integration since local units are merged into one entity. This model is also often referred to as the one-tier consolidated model (Slack, 2007). In Canada, Winnipeg and more recently Halifax and, to some extent, Ottawa all are cases where cities are the equivalent of the functional region. As it is often the case in Canada, all of them are the result of municipal amalgamations. In the US, the one-tier consolidated model is rare and most likely the outcome of consolidation of one or several cities with one or more counties. The best examples of such consolidations are the Unigov of Indianapolis, Indiana and more recently, Metro Louisville in Kentucky.

The City of Winnipeg was amalgamated in 1972 while the Regional Municipality of Halifax is the result of a more recent amalgamation reform, implemented in 1996. Unlike the case of Indianapolis in the US, the merged municipalities of Winnipeg and Halifax now provide almost all the public services typically provided by Canadian local municipalities. In Indianapolis, even though Mason County and the City of Indianapolis share the same political institutions, several public services remain under the responsibility of 6 independent special service districts: Capital Improvement Board, City-County Building Authority, Health and Hospital Corporation of Marion County, Indianapolis Airport Authority, Indianapolis Public Transportation Corporation as well as the Indianapolis-Marion County Public Library (Collin, 2000).

Reasons that drive government to amalgamations are usually the quest for economies of scale, improved co-ordination, enhanced financial and fiscal equity among municipalities, clearer accountability, more stream-lined decision making and greater efficiency (Slack, 2007, p. 16).

1.1.2 The Stuttgart Regional Assembly (Verband Region)

The [Stuttgart Verband](#) region in Germany is often cited as the most complete case of metropolitan governance. However, in that case, appearances might be deceiving. Although the Verband is directed by an imposing, directly elected regional parliament, its functions remain limited and so is its fiscal autonomy.

The Verband is a regional assembly comprised of 80 directly elected officials, which is rather rare for a regional body. Created in 1994, the Verband covers 179 local municipalities (*gemeinden*) and five counties (*landkreise*) for a total of 2.67 million inhabitants, which corresponds approximately to the territory of the metropolitan region. The Verband does not possess the power to levy its own taxes. Although it has a fairly significant annual budget of €260 million, all of its revenues come from municipal contributions (54%) and grants from the Land (46%) (OECD, 2004, p. 97).

There are 12 administrative regions in the Land of Baden-Württemberg, but the Stuttgart Verband has much broader planning powers, which may explain its specific statute and constituencies. Here is the complete list of responsibilities under the jurisdiction of the Verband:

- planning policies - regional, infrastructure, landscape and traffic and transport
- business promotion,
- local public transport,
- waste management,
- trade fairs and exhibitions and tourist marketing².

Although the Stuttgart Verband remains first and foremost a planning agency, the fact that its assembly is directly elected contributes to the existence of an integrated regional perspective.

This social representation of the administrative delimitation of the region leads first to the emergence of "regional" players, who implement specific projects by setting up networks on the basis of informal participation and cooperation ("Interactive Governance"). The "region", as an area in which to live and do business, and a level at which decisions are taken, becomes an area with which citizens are increasingly able to identify, and the practical reference framework for the organisational structures and activities of many political, economic and social players (OECD, 2004b, p. 53).

1.2 Metropolitan Multi-purpose Bodies

Single-purpose regional planning agencies are common both in North America and Europe. Almost every metropolitan area has at least one body that is responsible for transit or economic development and so on. However, metropolitan agencies that are responsible for several metropolitan planning functions are more difficult to find. Examples of cases of that nature in Canada are limited to the Québec communautés métropolitaines and BC's regional districts.

1.2.1 Metro Vancouver, British Columbia

Regional districts in British Columbia were created in 1965 (Slack, 1997, p. 5). Responsible for services (planning and for certain services, delivery as well) of regional scope, regional districts are directed by a board of appointed elected officials of member municipalities. An interesting aspect of the regional districts in B.C. is the fact that municipalities can opt in or out of certain services delivered by the regional districts. As a way to provide more flexibility and to conserve municipal autonomy, member municipalities can choose whether they want certain services provided by the regional districts or provide the service themselves. As a consequence, elected officials from municipalities that choose not to contribute do not vote on matters affecting public services for which they do not contribute. In the case of Metro Vancouver (formally, the Greater Vancouver Regional District), functions assumed at the regional level include the following:

- Air
- Regional Parks
- Regional Development
- Sewerage

² source: Verband Region Stuttgart web site. <http://www.region-stuttgart.org>

- Recycling and housing
- Water
- Labour relations
- Emergency services
- Mosquito management

(source: www.gvrd.bc.ca)

The board is now comprised of 35 directors coming from 21 municipalities and the number of directors appointed for each municipality is based on the population. Directors then get one vote for every 20,000 thousand inhabitants up to a maximum of five votes (www.gvrd.bc.ca).

Cost sharing arrangements for Metro Vancouver will be discussed in the following section.

1.2.2 Québec's Communautés métropolitaines

In 2000, the Québec government undertook a major reform that was highlighted by a series of amalgamations of local municipalities in the province's main urban areas, including Montréal and Québec city. After the election of a new government in 2003, a de-amalgamation process took place that saw several municipalities, especially in Montréal, detached from the merged city but without regaining all their prior powers and responsibilities.

However, the reform of 2000 was not limited to the amalgamation process. The Québec Government put in place communautés métropolitaines in its two metropolitan areas, Montréal and Québec City. The communautés métropolitaines are planning, co-ordinating and funding bodies directed by elected officials from their member municipalities. Contrary to the amalgamation process, the communautés métropolitaines were not affected by the change of government and their mandate remains the same, but unlike the BC regional districts, communautés métropolitaines do not directly provide public services. Their responsibilities are the following:

- Regional Land use planning
- Economic Development
- Social Housing
- Environment
- Waste management
- Geomatics*
- Transportation**
- International promotion of economic development**
- Facilities of metropolitan scope**
- Green and blue spaces (parks and shore areas)*

In both Montréal and Québec City, the communautés métropolitaines cover approximately the territory of their respective census metropolitan areas. In Montréal, 82 municipalities are part of the communauté métropolitaine and in Québec City, there are 28 municipalities. Another difference from the BC model of regional districts is that in Québec not all member municipalities are represented on the board of directors (conseil). For example, in Montreal, the council is composed of 28 elected officials: the Mayor of Montréal and 13 other elected officials designated

* Only for the Communauté métropolitaine de Montréal.

** Optional for the Communauté métropolitaine de Québec

by the agglomeration council³; the Mayor and two other elected officials of the city of Laval; the Mayor of Longueuil and two elected officials designated by its agglomeration council as well as 8 other mayors designated by regional county municipalities located in periphery of Montréal. Both communautés métropolitaines also have an executive committee.

Cost sharing arrangements and the tax base sharing program of the Communauté métropolitaine de Montréal will be discussed in following sections.

1.2.3 Municipal cooperation “à la française”

The most striking thing about the French municipal system is how fragmented it is. After the Second World War, cost of public service delivery became a major concern of the central government. Consequently, the government thought that the solution to this problem would be to aim for economies of scale by merging local municipalities (communes). They passed an Act (*Loi Marcellin*) which relied essentially on incentives to convince local municipalities to merge on a voluntary basis. The target was to eliminate 10 000 local municipalities. Soon, the French government realized the failure of its approach and began to look in a different direction. That's how intermunicipal cooperation became the obvious solution (Mevellec, 2005, p. 83).

The particularities of the French cooperation model are its voluntary aspect and the flexibility it leaves to local municipalities. Since the 1950's, the form of these cooperation mechanisms has evolved, but always has followed this more “bottom-up” type of approach. Nowadays, the central government does provide incentives to local municipalities to get into what is called an *Établissement public de coopération intercommunale* (EPCI) which can take the form of *communautés d'agglomération* and *communautés urbaines* (depending on the size of the agglomeration) in urban regions and *communautés de pays* in rural areas.

The flexibility goes beyond the fact that municipalities can opt in or out of these cooperation arrangements. It applies also to the governance mechanisms (number of elected officials on the council, etc.), which competencies will be regionalized (some are mandatory such as spatial planning, but some are optional) and until it became mandatory in 1999, whether or not they would levy a regional business tax (*taxe professionnelle unique*) within the agglomeration⁴. *Communautés* also have the ability to fix the rate of the tax. Here is the list of responsibilities (mandatory and optional) that can be taken in charge at the agglomeration level:

- Spatial planning
- Economic Development
- Housing
- *Politique de la ville* (integrated approach for the rehabilitation of distress areas)
- Road works (optional)
- Water distribution (optional)

³ The agglomeration council is not an actual body; it is composed of the elected officials from the City of Montréal and the mayors of 15 de-amalgamated municipalities of the Island. Québec city also has its agglomeration council, even though only two municipalities de-merged in 2005.

⁴ It should be noted that the fiscal revenues of rural cooperation arrangements are different than in urban areas.

- Waste water treatment (optional)
- Sport and cultural amenities (optional)
- Environment (optional)

To this day, intermunicipal cooperation is seen as a success, as more than 83% of the total French population live in a municipality that is member of an intermunicipal agreement with agglomeration-wide fiscal resources (*Établissement public de coopération intercommunale à fiscalité propre*). Some critics of this model have raised the issue that although *intercommunalité* mechanisms are supposed to assure municipal autonomy, the incentives, particularly with the imposition of an agglomeration-wide business tax, leave local municipalities with no choice but to enter the *communautés*. At the same time, should a municipality would like to opt out of it, the penalty, in terms of losing fiscal and financial revenues is said to be too harsh. Interestingly, some researchers have observed an increase of total municipal budgets for the agglomeration with the establishment of a communauté. It is explained, in part, by the fact that smaller municipalities have to contribute to public services that otherwise would not need and thus did not provide (Gilbert, 2006).

A more in-depth discussion of the fiscal arrangements of the EPCI is presented in the following section.

2. Metropolitan or regional fiscal arrangements

Intermunicipal cooperation arrangements are usually found in two main varieties: Expenditure or cost-sharing arrangements and revenue or tax sharing mechanisms. Reasons and objectives behind both types of agreements are usually different. In the next section, we will present examples in United States and Canada of existing intermunicipal cooperation mechanisms as well as the rationales and objectives for each case.

2.1. Cost-Sharing Programs

Cost or expenditure sharing measures are fairly common in Canada and they are present under different forms across the country. A good example common in many province are intermunicipal agreements where several municipalities get together to provide a public service of regional nature in order to save costs For instance, this type of agreements is frequently used in Québec when a central city provides one or more public services (i.e. wastewater treatment, transit, etc.) for its surrounding municipalities. A regional body responsible for the delivery of the service is not mandatory but it's not unusual to see one being established for that purpose. The advantage of intermunicipal service agreement is that it allows municipalities to save costs in terms of capital investment when the service requires cost-intensive facilities. In the case of smaller municipalities, it means that by pooling resources together, smaller communities can afford to deliver a public service that, otherwise they would not have had the resources to offer. The main disadvantage is that this type of agreement is the potential accountability shortfall. Because of the fact that service agreements can sometimes be complex, it can be difficult for tax payers to track down who is responsible for the administration of the service. That being said, within metropolitan areas, expenditure-sharing mechanisms are often the responsibility of a specifically established region-wide body with local elected officials, which can increase the level of accountability. The following sections list

some of the Canadian examples, and once again, we limited ourselves to multi-purpose regional structures.

2.1.1 Regional districts in British Columbia

Cost sharing for the provision of these services is determined by local municipalities through property tax levies. Only municipalities that choose to benefit from the service have to contribute to the provision of that particular service. Following the same logic, board directors from municipalities where a service is not provided do not vote on district board.

2.1.2 The communautés métropolitaines in Québec

Along with the need to enhance regional co-ordination, the rationales that lead to the creation of the communautés métropolitaines was the necessity to share cost of expenditures that used to be the burden of only one or few municipalities, but from which all benefited. In these complex institutional mosaics that are the metropolitan areas of Québec city and Montréal, the government of Québec implemented through the communautés métropolitaines, formulas to share the burden among the local municipalities. One of those formulas is the communautés métropolitaines base funding contribution. Local municipalities contribute to the regional body on the basis of their fiscal potentials⁵.

In the case of Montréal, local municipalities contribute to what they call “equipment, infrastructures, services and activities of metropolitan scope” (Act respecting the Communauté métropolitaine de Montréal, sect. 119). The formula to share expenditures related to these equipment and infrastructures is slightly different than for the base funding aspect. According to the Act, the community where the facility or infrastructure is located pays 50% of its accumulated deficit and the other half is paid by the other municipalities of the metropolitan area on the basis of their fiscal potential. It should be noted that the Québec Government also gives a grant to the Communauté métropolitaine de Montréal as a contribution to these facilities of metropolitan scope. To this day, there are four identified equipment, infrastructures and activities of metropolitan scope, but the council of the CMM has the power to add others to the list. The current list is comprised of the following (all but one are located in Montréal):

- The Montréal Botanical Garden, including the Insectarium
- The Montréal Planetarium
- The Biodôme
- The Cosmodôme (Space Camp Canada, located in the City of Laval)

⁵ Fiscal potential is an indicator made of the values constituting the total standardized property value of the municipality and the values obtained by multiplying by 0.48 the total of the values of the units of assessment in respect of which property taxes must be paid or sums in lieu of such taxes may be paid (Act respecting municipal taxation, s. 261.5).

2.2 Revenue or tax base sharing programs

In most metropolitan areas, the quest for more tax revenues has an impact on land use decisions and other policy spheres in local municipalities. Moreover, it can induce unduly and unproductive competition among municipalities of the same region. That is usually the rationale behind the creation of revenue or tax base sharing programs. However, examples of programs that have succeeded with this objective are rather limited. Also, one of the issues facing policy makers is whether such programs should include the residential tax base or tax revenues or should they stick to sharing non-residential tax-base revenues⁶.

2.2.1 Minneapolis-St. Paul Tax base sharing program

Implemented in the 1970's, the Metropolitan Fiscal Disparity Act of 1971, in place in the Minneapolis-St. Paul region, remains the reference in North America in terms of regional revenue sharing schemes. The program was put in place by the Minnesota state legislature as a "less dramatic alternative to regional consolidation or annexation" (Orfield, 1998, p. 25). The provision has two purposes: to improve equity in the distribution of fiscal resources (reducing the gap between some communities' public service needs and financial resources) and to promote regional planning (OECD, 2004, p. 120).

Formula

Under the Twin cities metropolitan area's tax base sharing program, each municipality contributes 40% of its commercial and industrial⁷ tax base acquired after 1971 to a regional pool (annually, it represents approximately 20% of the regional tax base). Then, the money in the pool is redistributed among the municipalities on the basis of "inverse net commercial tax capacity". In fact, distribution from the regional pool is determined by "multiplying each community's share of the metropolitan population by a relative fiscal capacity index, the ratio of the metropolitan population by a relative fiscal capacity index, the ratio of fiscal capacity in the region and the community's fiscal capacity. This means that communities with below-average fiscal capacity have an index greater than 1" (OECD, 2004, p. 120). So, municipalities with index of one will receive a share of the pool equal to its share of the regional population and municipalities with low fiscal capacity (index greater than 1) will receive a share of the pool that is higher than its part of the metropolitan population. It is interesting to note that since the introduction of the program, some municipalities have been both recipient and contributors at some point.

Critics

According to Orfield (1998), Minneapolis-St. Paul's tax base sharing program: "makes regional competition marginally fairer, but actual disparities remain high and fiscal zoning and competition for tax base remain intense" (p. 25). In order to obtain the results wished for, a sharing system would have to include a larger part of the non-commercial tax-base and part of the high-valued home tax base.

While some think that tax-base sharing should be increased to include the residential tax base, some critics think the opposite. In fact, proponents of the fiscal autonomy

⁶ For more information on smaller scale, tax and revenue sharing program, see Slack (1997), the ICURR report.

⁷ Not included are properties in tax increment financing districts and the Minneapolis-St. Paul International Airport.

and Public choice advocates are the main critics of this type of tax-base sharing program. They consider that regional tax-base sharing can diminish the ability of municipalities to offer the services that their citizens demand and at the same time, limit the possibility for residents to vote with their feet (choose to live in a municipality that offers the range of services that they want and can afford). That being said, this critique is more valid in the context of US states where schools are dependant from counties or municipalities, as it is often mentioned by the critics.

2.2.2 The Communauté métropolitaine de Montréal's tax base growth sharing program

Finally, the CMM has implemented a development fund that aims at financing waterfront development projects and green spaces improvement projects. The interesting aspect of this fund is the fact that it is funded through a tax-base sharing program, similar in its approach to the Minneapolis-St. Paul initiative. The basis of the program is that first, the council of the CMM determines the total amount to be collected perceived from municipalities and then they use a formula to determine how to share the burden among the municipalities.

Formula

The contributions from local municipalities take into account two things in the formula: the growth of the tax base by considering the additions made to the municipalities' assessment roll every year and the total value of municipalities' tax base. Every year, the council fixes the ratio how each of each of the aspects will count against the municipal contributions (i.e. 60% for the tax growth and 40% for the tax base). Finally, unlike the Minneapolis-St. Paul program, this program takes into consideration both the residential and non-residential tax-base. However, since 2002, elected officials on the CMM council have constantly reduced municipal contributions to the program to the point where the total amount collected with this program is now insignificant.

Critics

Although, it seemed like a good idea at the time, it appears that local elected officials insist on maintaining control over their tax revenues by limiting their contributions as much as possible and don't seem to be enthusiastic about the program. Also, the provincial government did not impose a ceiling or floor on the tax revenues to be shared and has not put pressure on the CMM council to increase municipal contributions to the tax-base sharing program which will be fixed at \$100,000 (total for the 82 municipalities) for the third consecutive year.

2.2.3 Allegheny Regional Asset District Sales tax revenue sharing (Pittsburgh)

Although somewhat distant from the Canadian context, this revenue sharing mechanism remains an interesting case as it serves two different purposes at the same time: funding regional assets and redistributing regional revenues to municipalities. First of all, with more than 400 local governments, the Pittsburgh metropolitan area is one of the most fragmented regions in North America. The Allegheny county itself counts no less than 128 local municipalities (Collin, 2000). During the 1990's, it was noted that local municipalities had higher property tax rates than in the surrounding counties. In order to ease the burden on properties, the Pennsylvania state legislature authorized the levy of the Regional Asset tax and the creation of the Allegheny Regional Asset District (ARAD).

Formula

The regional asset tax is in fact a sales surtax of 1% levied in the county. The tax is collected by the ARAD and 50% of the revenues coming from the tax are used to fund an impressive list of civic, cultural and recreational entities including theatres, museums, libraries, exhibitions and regional parks. Since 1995, it is more than \$900 million US that have been redistributed by the ARAD (ARAD, 2007). The other 50% of the regional asset taxes is redistributed to the 128 local municipalities (25%) and to the county (25%). Moreover, there is a form of wealth redistribution with the tax revenues. The formula takes into account the fiscal strength of local municipalities as well as their fiscal effort. However, the money comes with some conditions. Interestingly, municipalities have to use 25% of any increase of revenues in region-wide assets or to further reduce the property tax burden of their residents (Collin, 2000).

Critics

For the proponents of the regional assets tax, the initiative has been very positive so far, especially for the core city of Pittsburgh. Because an important portion of the regional assets are located in Pittsburgh, the "regionalization" of these facilities translated into substantial economies for the cities. For the first year only, Pittsburgh saved \$16 million that is now paid for by the whole region. Also, the implementation of tax and the creation of the district allowed the region to modernize and improve considerably the network of public libraries and other public assets.

The levy of the tax also succeeded in lightening the burden on property tax in the region's municipalities. However, the additional tax means a greater burden on sales tax in the county and higher sales tax than the surrounding counties in the metropolitan area, which were already enjoying lower tax rates. Finally, the Allegheny Institute for Public Policy assessed that: "The tax reform component of the RAD program is largely a redistribution from better off suburbs to poorer municipalities. The more well to do municipalities are net losers in the process. The problem is that by lumping this re-distribution effort with the RAD program, the opportunity for real tax reform as well as tax and expenditure reductions by local governments has been largely foreclosed" (Allegheny Institute For Public Policy, 1995).

2.2.4 French communautés d'agglomération

This example is actually both a case of revenue and expenditure sharing. As mentioned, French municipalities of an agglomeration can decide to join together and form a communauté d'agglomération or communauté urbaine depending on the size of the agglomeration. In order to fund the regional responsibilities that the communauté undertakes, the council can levy a special business tax and fix the rate by vote. Since the tax is collected throughout the region to fund services that would otherwise be taken on by local municipalities, that constitutes a form cost-sharing arrangement.

The revenue-sharing part of the arrangement comes when the communauté, once its expenditures are paid for, sends the surpluses back to the municipalities. So, in that sense, that's a form of redistribution that is not unlike the example of Pittsburgh. It is of interest to note that the more integrated the communauté is, the smaller the transfers back to municipalities are (Direction des collectivités locales, 2005, p. 16).

Hence, the more responsibilities are taken in charge at the regional level, the smaller the percentage of transfers of total expenses becomes. In the communautés d'agglomération, there are two different types of transfers; one is an equalization payment (dotation de solidarité communautaire) and the other is a general transfer.

Formula

First of all, as part of the flexibility principle characteristic of the French model, it is important to point out that the formula for the redistribution of revenues from the communauté back to the local municipalities may vary from one agglomeration to another. The present example is, from what we know, representative of how several, if not most of the communautés d'agglomération with region-wide fiscal resources proceed.

In terms of equalization, here is an example of how the money is redistributed in the communauté d'agglomération de l'Albigeois:

- 20% of the "dotation" is divided on a per-capita basis;
- 20% is divided on the basis of the tax-base growth;
- 60% is divided on the basis of indicator that includes the population; the fiscal effort, the fiscal potential that takes into account the 4 own-sources revenues, the taxable income per capita, number of students in the municipality's school(s) as well as an indicator of the expenses undertaken by the municipality that have a region-wide scope (Gauthier, 2004).

Finally, the other transfer is distributed to local municipalities on the basis of municipalities' cost for responsibilities transferred to the agglomeration compared to what their estimated costs for those responsibilities were when these responsibilities were assumed locally.

Critics

The fiscal equalization schemes in place at the regional levels are notably complex. In addition, they overlap some of the central government's own equalization programs that have the same purposes and objectives. Consequently, the end result is a rather complex and costly regime to administer.

Conclusion

Metropolitan governments in Canada and even in North America are not the rule, more the exception. Where they do exist they are the results of reforms imposed by Provincial or State governments and not necessarily well accepted at the local level, even though, local elected officials are involved in the direction of these new institutional structures.

At the same time, formalized metropolitan bodies present advantages in terms of policy co-ordination and fiscal and financial equity. They also provide better accountability mechanisms when it comes to revenue and cost sharing arrangements than simple intermunicipal agreements. Although tax and revenue sharing programs exist in Canada, they are usually of smaller scale and in metropolitan areas; they mostly are implemented through a regional structure. Slack (1997) refers to this approach as "institutionalizing" tax sharing (p. 25). She also explains that if tax and revenue sharing are so rare in Canada, it is mostly because provinces fund municipalities with inadequate fiscal capacity through their equalization transfers. In

Europe, however, revenue and cost sharing as well as equalization programs are much more common. Then again, it also has to do with the characteristics of their local finance regime, less reliant on the property tax, as well as the availability of funds through European Union programs.

Appendix 1

Literature review

1. Effects of investment on economic growth

According to a study by Aschauer (1987), a \$1 billion increase in public investment expenditure crowds out anywhere from \$1 billion to \$1.5 billion of private investment expenditure. He interprets that firm managers appear to take directly into account the availability of public capital for use in private production (Eberts, 1991, p. 89-90). Munnell (1992) estimates that the impact of aggregate public capital on private sector output and productivity is very large. According to her estimates, 1 percent increase in the stock of public capital would increase output by 0.34% (p.191).

Through a study by Eberts (1991) of 40 US metropolitan areas, it was shown that the correlation between the change in public capital stock and net employment change indicates that the effect of public infrastructure on firm openings significantly affects the growth of the local economy (Eberts, 1991, p. 91). However, the results showed that the magnitudes of correlations are much smaller and statistically insignificant when it comes to the relationship between a simple increase in public investment and firm openings. Therefore, it appears that a simple increase in public investment is not sufficient to induce firm openings. However, the author also found that an increase in public capital induces an increase in private capital. Finally, in an other study, Eberts came to the conclusion that there is a significant causal relationship between public outlays and private investment in 33 out of 40 US metropolitan areas, but the direction of causation went both ways (Eberts, 1991, p. 95).

Clayton and Wittington (1977) describe the community-level, Florida Economic Growth Impact Model as an “after the fact” evaluation of the impacts resulting from a new industry location. New fiscal surpluses or deficits are calculated at the city, county, and school district levels, including a break-even property tax rate. The model is packaged to include an input guidebook and report, and a default data set. User-provided data is also used in the model. Average per capita values are computed for 13 city and 9 county groupings based on 1973-74 comptroller data for the State of Florida.

Additionally, annualized capital expenditure functions are estimated for the city, county, and school district revenues. Expenditures are estimated as per pupil coefficients. Multipliers are derived from input-output analysis.

2. Regional Distribution of Benefits

Local services are substantially financed by property taxes, which means the tax base depends heavily on development.

“At the metropolitan scale, where numerous relatively small communities comprise an interdependent political economy, spillovers of the benefits and costs of growth are far more important than among separate regions. Employment growth in a small

municipality is very likely to affect demand for housing and highway congestion in neighboring communities. Spillovers obviously complicate the implications of growth for particular localities. While communities may be able to anticipate with some accuracy the sources of growth within their boundaries, they are much less likely to be able to project the combined effects of their neighbors' development" (Danielson and Wolpert, 1991, p. 395)

Looking at the case of Northern New Jersey (365 municipalities), Danielson and Wolpert observed that while economic growth occurred unevenly among municipalities (growth in terms of population, employment and tax base), the lion's share of the benefits during the growth surge was reflected in the appreciation of residential values in the more affluent boroughs and towns and in the increase in the business in the growing outer townships (Danielson and Wolpert, 1991). That being said, distribution of the gains from growth among localities was less uneven than the growth from employment or tax base, also it was noted that communities which had little or no local economic growth achieved significant benefits during the observed growth surge (Danielson and Wolpert, 1991, p. 412).

Haughwout (1999) suggests that infrastructure benefit spillovers cannot be uncovered by reduced forms of regional fiscal cooperation. He mentions that the central city "may play an important economic role in its region and city infrastructure, by enhancing the productivity of the city, may provide benefits to suburban firms and households, even if suburbanites never visit the city. Any or all of these could generate house price effects [increases]. Whatever their source, fiscal spillovers and the potential for benefits from voluntary cooperation are an important element of a broader strategy to improve city conditions..." (p. 597).

3. Fiscal Impact

For Morse and McDowell (1982), local governments' provision of services depends upon the dollars generated by local taxes and users fees. Fiscal impact analysis estimates the fiscal consequences of alternative community economic development policies. A new development nearly always adds to a community's cost of providing services. Five methods of estimating expenditures are:

1. Expenditures Per Capita - assumes average cost is constant, while population changes. Disadvantages include: a) everyone doesn't use the services to the same degree; b) economies (diseconomies) of scale; c) some services don't add to costs
2. Department Estimates - educated, best guesses. They can be biased by budgetary concerns.
3. Service Budgets - a detailed description of needs and costs. Disadvantage includes resources used in data collection. But, this is the "best" method.
4. Standard Manpower Requirements - the number of service personnel needed based on the Census of Government data per 1000 population. Doesn't address unique local situations.
5. Regression Analysis - changes in expenditures are related to community characteristics. Assumes present services are at capacity.

Revenue estimates from new development depend upon:

- 1) location of new worker's homes
- 2) income level and geographic spending patterns of new residents
- 3) multiplier effects
- 4) lags in revenue collection.

Growth affects local taxes (property, income and sales), state and federal aid, user fees, hook-up charges, and mitigation fees (impact fees).

Kapuria (1978) mentions, in a thesis about the impacts of urban growth on municipal services, that it may be said that "residential property represents a burden for municipal purse, while commercial and industrial property more than pays its own way" (p.20).

According to the study for the case of Gloucester, Ontario, "the most important determinant of municipal costs may be the "rapidity" of change and its effect in disrupting existing organizational routine" (p. 42).

As for the economies of scale in the provision of public services, they are of "significance in the provision of public services only as a community grows from a small to an intermediate size" (p. 44).

Also, as municipalities tend to grow, the pattern of public services spending changes. "The more urbanized municipalities within the Regional Municipality of Ottawa-Carleton expend more money on the protection of people and property than any other municipal service" (p. 48).

Finally, through regression analysis, it was observed that the increase of expenditure on the protection to persons and property, transportation is more closely related to industrial and commercial growth than residential growth, while the increase in cultural and recreation services, for example, is more closely related to residential growth (p. 88-90).

For Murdock and al (1982), the criteria for evaluating impact models should include considering the information requirements, the methodological form and validation, and the use characteristics. At a minimum, information must include economic, demographic, public service and the social changes that are likely to occur. It is also important to know the levels of geographic output and the ability of the model to predict over alternative time periods.

Factors to consider in model adaptation and development are: (1) Computer compatibility; (2) Estimations of necessary changes in the model structure; (3) Data acquisition; (4) Model implementation; and (5) model validation. Evaluation of a model over each of these factors and careful consideration of alternatives and problems are essential for effective model adaptation effort.

Nelson and Bender (1986) suggest in a critic of different local impact assessment models that equilibrium Planning Analysis disregards intermediate time periods as a system moves toward equilibrium. Planning models are inappropriate for impact analysis (p. 7). A planning model may be a "now-then" or "before-after" model. "Now-then" models estimate the adequacy of local government revenues to support services. They are appropriate to use with small communities with stable economic bases. "Before-after" models don't separate the estimated results caused by a

change from that caused by other changes. They are appropriate for expansions and contractions of small manufacturing plants in rural areas or large changes in cities.

Impact Analysis attempts to find the changes due to one project alone. Using a "with/without" approach, it may utilize either a dynamic or equilibrium model. The difference between estimates "with" and "without" a project are the project's impacts. A source of large errors are the under-representation of a project's employment.

Input-output models have a high level of industrial disaggregation with linking coefficients that specifies the amount one sector buys from and sells to another sector. The advantage of input-output is the ability to face changes in each sector's activity caused by some initial change in another (p. 17).

The Oklahoma Community Development Simulation Model (CSM) is the only model considered that "explicitly addressed the issue of the appropriate boundaries of an impact area" (p. 12) by using a gravity technique that defines points of equal influence. CSM is an input output model using "with-without" techniques over a community. It uses cohort-survival techniques in estimating population. It uses the interface of employment, income, and population. A gravity model is used to analyze the spatial disaggregation of impacts, specifically, fiscal impacts.

In a case study made for Oklahoma communities on the impact of the industries, Shaffer and Tweeten (1972) present a procedure called the "New Gain to the Community" model, to measure the impacts of a new industry location. Two hypothetical communities and industries are used to illustrate the model. It uses partial budgeting techniques to determine the changes resulting from industrialization. The model projects the net gains or losses within a community's private, municipal, and school district sectors. The model might be used to analyze the efficiency of incentives given to prospective plants. It is stressed that both the community and the industry must be right for each other in order for the association to be profitable to both.

Two changes are defined. Direct or primary changes are measured as employment by the new firm, including the resulting wages. Indirect and Induced or secondary changes are measured by multipliers. They are the additional income to local businesses as a result of the injection of the new income from the plant purchase and the new employed worker's spending (indirect). Likewise, there are changes in local consumption due to the additional influx of people and income within the household sector (induced).

Woods and Doesken (1983) reviewed several impact models:

Shaffer and Tweeten developed a model to measure the impact of a new industry on rural communities in Oklahoma. The framework calculated net gains/losses to the community. This allows decision-makers to evaluate incentives offered to prospective industry. It is based on partial budgeting techniques; however, it is a single-period model.

Andrew Ford's BOOM 1 Model describes the impacts of large power plants on small communities. It follows the path of initial "boom" to "bust" periods after construction of a plant. It is a dynamic model.

The Florida model by Clayton and Whittington analyzes impacts within the private and public sector, including city, county, and school districts. Default data (research-

based estimates) are used when local data are not available. The model calculates net fiscal surpluses or deficits, including a break-even property tax rate.

The North Dakota Model, by Leistriz, Murdock, Toman and Hersgaard, measures the impact of energy development. It gives annual projections of key variables, including settlement patterns, school enrollment, housing requirements, and public sector costs and revenues.

The Community Simulation Model is adapted from the above works. Model adaptation is possible as long as care is taken to use the appropriate data for the new area. The model simulates the new industry impacts on rural Oklahoma communities. It has four major data bases: economic, capital, demographic, and government accounts. It contains over 200 linking equations and utilizes a gravity model to define the community service area. It is an input-output based "with-without" model.

In another article, Woods and Jones (1982) present a computerized Industrial Impact Model. Benefits and costs are estimated for the private, municipal, school district, and county sectors to arrive at an estimation of the net sector gains or losses brought about by a new industry location. This model uses discounting equations to amortize investment made by each sector. According to a Bureau of Labor Statistics Consumer Survey, 35% of an individual's disposable income is spent on goods generating sales tax revenues in the local area.

When applied to rural Texas communities, it was found that most communities had net gains. Specifically, the private sector gained the most, while municipals, schools and the county gained less, broke even, or lost. This information could help decision-makers analyze the effects of a plant location in terms of inducements and resulting tax revenues.

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