

**Regional Science in the 1990s:  
A Return to the Basics**

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In a time when regional blocs are becoming the norm -- as evidenced by the situation in the former USSR, the passing of the North American Free Trade Agreement (NAFTA), the increasing economic power of the Pacific Rim countries, as well as regional influences within countries -- regional scientists have a significant research background to address important issues related to these developments. Yet, there is a great risk that we will lose this 'window of opportunity' to influence decisions that will have long term effects on economic growth and regional development.

Within individual countries, the challenges that face the regions are awesome. Let me give you an example from Canada. There has been much discussion of the re-structuring that has gone on in Ontario (the industrial heartland of Canada) as a result of the recession of the early 1990s. Indeed, the 'hollowing-out' of Ontario has become a widely used term. But the re-structuring that must go on in Atlantic Canada will be far more severe. There is no longer any doubt that the traditional resource based sources of employment and, therefore, income are undergoing massive change. The reliance of the region on the fishery is over (the fish stocks have been depleted and will likely not be restored until the next Century, if then), the mining industry has been shrinking (partly due to low prices) and the forestry industry has not yet re-structured in the region (together with a declining market for pulp and paper). The decline in these industries has implications, of course, for the

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forward linked manufacturing industries. Furthermore, all of this is occurring at a time when governments (both federal and provincial) are in fiscally difficult positions. The challenge for the regional scientist is clear -- what options do policy makers have in the future to encourage regional economic growth? What should be the major focus of industrial re-structuring? What policies should be adopted to help eliminate regional economic disparities? What can regional scientists offer, if anything, to assist in the global re-structuring of regions?

In this paper, I consider five basic issues on which regional scientists should re-focus their research efforts in the 1990s.

#### Issue 1: Equity versus Efficiency

The issue of equity across regions versus efficiency of the economy is one of the most basic of debates in regional science. It has, in the past, been associated with the term "place prosperity versus people prosperity" (terminology as used by Winnick (1966) and more recently, as described by Bolton (1992) as "a sense of place"). At the crux of this issue are the following questions: should we provide aid to lagging regions in the form of regional development programs which will, potentially, create jobs and, therefore, help to eliminate economic disparities across regions of a country? Or, is a better policy to focus on the efficient workings of the market -- that is, ensuring that the factors of production are free to move in response to market incentives? In effect, the first of these questions concentrates on place prosperity whereas the latter concentrates on ensuring that individual economic agents can adjust and, therefore, maximize benefit to the economy thus raising real incomes for all. In an effort to reduce economic disparities across regions, the equity versus efficiency tradeoff is one of the most basic policy questions we must address. Of course, it is critical to note the value judgement involved here. The policy maker must make the value judgement associated with the tradeoff between equity and efficiency.

In Bolton's work, sense of place is seen as a type of capital (albeit intangible) and includes social interactions that are an important part of a community. These social interactions may give rise to productivity gains as members of the community work together. Much, although not all, of the arguments Bolton makes are based on the theory of the second best but, again, the basic notion is that sense of community can lead to productivity gains.

In Canada, we have had a long history of 'place policies', undertaken under the guise of regional development programs, that have attempted to bolster provincial and sub-provincial economic growth through public intervention. Many of these policies are run by the federal government (typically with the cooperation of the provincial government). In general, Canadian economists view the policies undertaken by the federal Department of Regional Econ-

omic Expansion (DREE) or the Department of Regional and Industrial Expansion (DRIE), for example, as unsuccessful.

These programs gave grants or loan guarantees to firms that often compete with privately owned firms. An example from Fredericton (the capital of New Brunswick) will help illustrate the point. A major hotel was given financial assistance by the federal government to assist in offsetting construction costs. The effect of this (after the hotel opened) was an over-supply of hotel beds in the city causing financial problems for other hotels. Another example is the initial reaction of the federal government to the crisis in the fishery off Newfoundland. The government provided assistance to fishers in the outports and this had exactly the opposite effect to that intended -- instead of helping the adjustment out of the industry, there was a run on pick-up trucks and more home construction and renovation with the result of making some outports better established.

Clearly, while there is a sense of place in these communities, it is critical that the assistance provided be adjustment assistance. It is inefficient to keep these communities in place given the re-structuring that must take place. Of course, as Bolton (1992) notes, there is great difficulty in dealing with declining industries and how to deal with a shrinking number of communities. In the end, the solution to this problem is political.

Having noted the role of regional development programs in Canada, an equally important question is whether we can come up with some policies that can assist in the reduction of regional economic disparities (that is, a movement towards equity) while not interfering with efficiency.

Often, the two goals of equity and efficiency cannot be simultaneously achieved. However, it is possible to have equity policies which result in efficiency gains. An example of this, at least in principle, is the Canadian equalization program. This is a program, embedded in the Constitution of 1982, which, in effect, transfers income from the 'have' provinces to the 'have-not' provinces so that roughly similar standards of public services can be provided across the provinces. As Boadway and Flatters (1982) note, while this program has strong equity results, efficiency gains can also be achieved. In particular, because of different endowments in the provinces (for example, due to differences in the natural resource base) some provinces may have potentially large net fiscal benefits (through royalties, for example). However, if migration occurs due to the resulting lower tax rates or more generous public services, this may be inefficient; migration should respond to market incentives (for example, higher labour incomes or more employment opportunities). By providing equalization payments to the 'have-not' provinces, there can be efficiency gains while still moving towards the goal of equity. Of course, the way the program is set up in practice is crucial in determining if efficiency can be realized. In the Canadian case, the formula used for the equalization program may not, in fact, be the best for either equity or efficiency goals.

A related issue to these equity versus efficiency considerations is the po-

tential for transfer dependence. As Courchene (1978, 1994) has argued, federal transfers may lessen the need for lagging regions to make the necessary adjustments through wages and factor mobility to improve their economic future. In effect there is no advantage in lagging regions trying to improve their economic situation, since this will only result in the transfer payments being reduced. Consequently, it is argued, these transfers inhibit the adjustment process, create dependence and thereby widen disparities.

One last issue related to equity versus efficiency concerns is whether Porter's (1990, 1991) notion of the development of "clusters of economic activity" is useful. This is a concept very similar to the growth pole literature made famous by Perroux and has been at the centre of regional economics. The question here is, how should these clusters be formed? Is there a role for government or should firms be left to form clusters on their own? If these clusters can be formed, will they help solve the problem of lagging regions?

All of this suggests that a major effort should be made in understanding the impact of all programs on lagging regions and evaluate these in light of equity and efficiency considerations.

### Issue 2: Economic Integration

There is a growing tendency for regions to erect non-tariff trade barriers against each other -- whether these be between countries (for example, Japan and the U.S.) or within countries (for example, between U.S. states or Canadian provinces). These barriers can be explicit in terms of preferential procurement policy or through different standards on products or licensing requirements for trades and professionals across regions. Canada has a particularly long history of such barriers and there can be little doubt that these have resulted in inefficiency since they impede the free movement of goods and the factors of production and, ultimately, increase costs and prices (see, for example, Palda 1994). For example, Quebec construction workers could work in Ontario and New Brunswick (the adjacent provinces), but the reverse was not true. Similarly, until recently, beer could not be transported across provincial boundaries without substantial price penalties.

Some progress has been made on the elimination of trade barriers in Canada. For example, the Maritime provinces have entered into an agreement to reduce barriers associated with government procurement and with different environmental regulations. There has also been some slow movement of all provinces in reducing barriers although significant trade restrictions remain as provincial governments try to maintain employment, although it means residents face higher costs.

Directly related to the reduction of these barriers are issues related to the structure of wage rates (see, for example, Dickie and Gerking 1987) and the effect on unemployment rate differentials. In the most basic terms, the erection

of interregional trade barriers is at the heart of what we mean by a country or federation. Barriers, put simply, result in a more fractious economic union -- a union where a sense of supporting the goals of nation-building are sacrificed for province-building.

This is a case where an international example is also useful. With the breakup of the former USSR, the Commonwealth of Independent States have also tended to erect barriers between the states in the Commonwealth and particularly against Russia. Ukraine is a particularly important example. Ukraine has very little oil of its own and, in former days, received its oil from Russia. After the breakup of the USSR and the distrust that resulted therein, Ukraine did not trade with Russia and, consequently, there were severe shortages of gasoline and diesel fuel. Barriers to trade, in this case, have resulted in a severe impediment to Ukraine starting the transformation to a market economy.

In undertaking research into the magnitude of the effects of interregional trade barriers, regional scientists are well equipped to use techniques appropriate for this analysis. In this case the appropriate tool is the development of a multiregional Computable General Equilibrium (CGE) model. The CGE model has been used extensively in examining international trade and public finance issues, but only recently has been used in the field of regional science. Given the reliance of CGEs on input-output tables (or, more correctly, social accounting matrices) together with the substantial background that regional scientists have in input-output analysis, regional scientists are particularly qualified to enter the debate about the deleterious effects of non-tariff barriers to trade.

### Issue 3: Total Factor Productivity Growth and Regional Disparities

In dealing with regional income or unemployment disparities, we must recognize that these are, in effect, long run problems. That is, we need to focus on the underlying reasons for the disparities and this requires an analysis of the sources of regional economic growth and, in particular, an examination of regional total factor productivity growth.

In analyzing the sources of economic growth, first we account for the contribution to growth from the labour and capital inputs (or more broadly the contribution to growth from the other factors of production). The remainder, or the so-called Solow residual, is total factor productivity growth.

Since labour force growth is largely determined by demographics and participation rate trends and capital stock growth depends on the rate of return to investment (which, in turn, is influenced primarily by national policies), the regional policy maker should consider whether there are policies that can be put in place that will increase regional total factor productivity growth. Furthermore, what explains regional differences in total factor productivity growth -- are they a result of differences in endowments, physical infrastructure or

human capital development?

Obviously, a number of public policy issues come to mind. First, consider the provision of public infrastructure. This includes ensuring there is a good transportation system and that the communication infrastructure is in place. Public provision of such infrastructure is thought to increase private sector productivity. However, there is a continuing debate over the magnitude of the effect of publicly provided infrastructure on private sector total factor productivity growth (see, Munnell 1992).

Perhaps more important is public policy towards individuals. The need for a skilled, healthy work force in today's economy is clear. Therefore, the public (and, perhaps as important, private) provision of education, re-training opportunities and an effective health care system is critical. Without allowing for this human capital to be accumulated, the result will be an inferior labour force with subsequent costs in terms of lower total factor productivity growth.

Regional scientists, with their strong empirical skills, must consider the important role for regional total factor productivity growth through production function modelling of extended production functions (that is, including a role for intermediate inputs) and explicit recognition of the regional determinants of total factor productivity growth (see, for example, Moomaw and Williams 1991).

#### Issue 4: Land Use Policy

Regional scientists must have something to say about land use policy since land use fits into the more broadly defined area of regional sustainable development. The deterioration of the environment and the need for enough economic growth to reduce regional disparities must be balanced. A couple of examples will help to illustrate the importance of land use policy.

Recently, in B.C., the Round Table on the Environment indicated that economic development was causing serious problems in the environment. The rapid increase in the population on Vancouver Island and the lower mainland, creates the difficult choice between achieving higher rates of economic growth and the effect on the environment. In effect the argument is that, on the lower mainland and Vancouver Island, growth must be managed through restrictions on population growth -- in effect by limiting net in-migration. But who should reap the benefits of the restrictions to be placed on individual movement and choice of residence. Should the government put restrictions in place to curtail individual choice or should the price system be allowed to determine the allocation? Obviously, economists would prefer the latter.

In New Brunswick, the Commission on Land Use (New Brunswick 1992), noted that New Brunswick was the only province in Canada where the rural population as a percentage of the total population was increasing (indeed, in the 1991 Census, over half of the population of New Brunswick lived in rural

areas). Yet rural areas are not regulated -- there is no land use policy. Consequently there can be serious problems of environmental degradation -- through pollution of the watershed among other problems. What is the correct policy in this case? Again, establishing a clear zoning/land use policy, together with flexibility in the marketplace is desirable.

Obviously, environmental issues are important, but the issue is one of evaluating the tradeoffs among excessive government regulation, the infringement on individual decisions and ensuring sustainable development at the regional level.

#### Issue 5: Law, Institutions and Economic Growth

Another broad area that regional scientists must examine is the interaction among the law, the institutions it creates and economic growth. The law can act in ways to help in reforms when these reforms are consistent with the changes that meet the values of society. However, if the changes are viewed as adding substantially to costs and the benefits are spread across many, the law can act as a barrier to reform.

This point, as noted by May (1993), can be observed, for example, in proposed changes to the income security system. May notes that when the unemployment insurance system was introduced in Canada, it was widely accepted and the institution that delivered unemployment insurance changed and was flexible in dealing with needed changes to the program. For example, from its introduction in 1940 when it covered only the private sector, full time employees, the system has changed to include public sector employees, seasonal workers and the provision of maternity benefits. A further major change was to regionally differentiate the program. In effect, this allowed the unemployed in distressed regions to receive benefits for longer. In some regions of New Brunswick, for example, after working for 10 weeks, unemployment insurance benefits can be collected for 42 weeks. This has created the so-called '10-42' problem.<sup>1</sup>

The response was the development by other institutions, like provincial governments and some firms, of jobs which lasted precisely 10 weeks. For the provincial governments this meant that after 10 weeks their budget problem had been transferred to the federal government, while for firms the work force was likely to stay in the region even after layoffs had occurred and so would be available when conditions improved.

Furthermore, in spite of commissions and studies which all suggest that the program should be changed, nothing happens. In this case the law inter-

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1. This address was given before the announced changes in the unemployment insurance system announced in the 1994 Federal budget.

feres with reform of the institution and can, therefore, have important regional effects.

At the same time, we should not blame individuals or firms for taking advantage of bad public policy. These economic agents are acting rationally given the institutions and regulations that have been put in place, given where they reside. Regional scientists must help to evaluate the interaction between economic behaviour and the laws put in place by policy makers.

### Conclusion

In summary, I see the basic issues relating to the reduction in regional economic disparities as

- equity versus efficiency;
- economic integration;
- total factor productivity growth;
- land use policy and reform;
- the law, institutions and economic growth.

The need for interdisciplinary work is clear and this is where regional scientists can have a major impact. But we must concentrate on the issues that will alleviate regional economic disparities -- the most basic of our goals.

### References

- Boadway, R. and F. Flatters. 1982. "Efficiency and Equalization Payments in a Federal System of Government: A Synthesis and Extension of Recent Results", *Canadian Journal of Economics*, 15: 613-633.
- Bolton, R. 1992. "'Place Prosperity vs People Prosperity' Revisited: An Old Issue with a New Angle", *Urban Studies*, 29: 185-203.
- Courchene, T.J. 1978. "Avenues of Adjustment: The Transfer System and Regional Disparities" in M. Walker (ed.) *Canadian Confederation at the Crossroads: The Search for a Federal Provincial Balance*. Vancouver: The Fraser Institute.
- Courchene, T.J. 1994. *Social Canada in the Millennium*. Toronto: C.D. Howe Institute.
- Dickie, M. and S. Gerking. 1987. "Interregional Wage Differentials: An Equilibrium Perspective." *Journal of Regional Science*, 27: 571-585.
- May, D. 1993. "Unemployment Insurance Reform in Atlantic Canada", *U.N.B. Law Journal*, 42: 407-418.
- Moomaw, R.L. and Williams. 1991. "Total Factor Productivity Growth in Manufacturing: Further Evidence from the States." *Journal of*

- Regional Science*, 31: 17-34.
- Munnell, A. 1992. "Infrastructure Investment and Economic Growth", *Journal of Economic Perspectives*, 6:189-198.
- New Brunswick. 1992. *Land Use and the Rural Environment*. Fredericton: The Commission on Land Use and the Rural Environment.
- Palda, F. 1994. *Provincial Trade Wars: Why the Blockade Must End*. Vancouver: The Fraser Institute.
- Porter, M. E. 1990. *The Competitive Advantage of Nations*. New York: The Free Press.
- \_\_\_\_\_. 1991. *Canada at the Crossroads: The Reality for a New Competitive Environment*. Ottawa: Business Council on National Issues and Minister of Supply and Services.
- Winnick, L. 1966. "Place Prosperity vs People Prosperity: Welfare Considerations in the Geographic Redistribution of Economic Activity", in *Essays in Urban Land Economics in Honour of the Sixty-fifth Birthday of Leo Grebler*. Los Angeles: Real Estate Research Program.