

Productivity and Fiscal Federalism: Canada and U.S. Compared

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Perspectives and Prospectives"**

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Introduction

This paper starts from the observation that Canada, like the United States, is a tri-level federation with a complex distribution of powers and intricate intergovernmental fiscal relations. Both countries have seen the role of governments expand tremendously in the second half of the 20th century, and both countries have experienced painful fiscal restraint and some restructuring of the fiscal relations between the federal and province/state governments during the past decade or so.

We begin with a brief sketch of the respective roles of the federal government and the states and provinces in the two countries. Recent developments in fiscal relations in the U.S. are then highlighted, followed by a brief analysis of the redistribution of resources among the states brought about by the U.S. federal fisc. We then turn to Canada, and address the same two issues with respect to the provinces. The final section considers what might result were Canada to adopt a more laissez-faire U.S.—like approach, and speculates on what that might mean for Canada's overall productivity performance.

First though, at the risk of appearing trite, a few elementary thoughts on this workshop and what discussions about productivity are all about. They usually start with defining a country's prosperity in terms of GDP per capita or:

$$y/\text{pop} = y/(E + N); \text{ where } E \text{ is persons (or person hours) employed, and } N \text{ is persons non-employed, including the unemployed, which in turn can be written as} \quad (1)$$

$$= ay/E + (1-a)y/N, \text{ where } a \text{ is positive and equal to } 1 \text{ or less.} \quad (2)$$

Note that in this identity, the first expression on the right hand side, ay/E , the proportion of GDP accruing to the employed, and its derivative, largely reflect economic decisions that have been and are being driven by market forces in keeping with trade and investment opportunities, federal and provincial regulations that govern business and labour practices, and federal monetary and fiscal policies.

The second expression on the right hand side, $(1-a)y/N$, the proportion of GDP accruing to the non-employed, and its derivative, largely reflect political decisions that have been and are being made by governments to provide income support or services for persons who are generally on the margin or outside of market forces, either temporarily or more permanently. They include, in addition to the unemployed, the old, the young, the sick and disabled, the working poor, persons on welfare, or in prison, etc., i.e. the specific targets of government social policies. These policies may be funded and delivered in different ways and by different levels of government. But at heart their financing involves the revenue and expenditure policies of governments, with the federal fisc pre-eminent.

And since the latter entails, to a considerable extent in both Canada and the United States, conditional and unconditional federal grants to other governments and individuals, it seems reasonable to compare the re-distributive effects, particularly in the context of the differing productivity performance of the two countries in recent years.

In this connection, the recent presentations covering GDP per capita and labour productivity developments in the U.S., Canada and the other OECD countries by Andy Sharpe and Dirk Pilat in the last two issues of the Centre's Monitor were especially helpful. The authors took pains to separate out the portions of the growth in living standards over the 1990s attributable to the respective growth in labour productivity and to the changes in the use of labour, i.e., due to relative increases or decreases in employment, hours of work, etc. Noting Canada's disappointing performance against that of the U.S.—output per capita fell from 86 per cent of the U.S. level in 1989 to less than 79 per cent in 2000—Sharpe observed that of the 0.85 percentage points slower real (annual) growth "about 40 per cent of the differential was due to the relative worsening of labour market conditions ...and 80 per cent was due to slower productivity growth." These were slightly offset (20 per cent) by favourable demographic trends. Much of this deterioration occurred in the early 1990s, due largely to the severity of Canada's recession.

Accordingly, this paper asks: "How do federal government finances affect each state and province, i.e. what resources are transferred to or from each state and province by virtue of the federal government's tax and spending practices? Are there differences in each country's approach? And do the net transfers between jurisdictions materially affect each nation's overall prosperity and productivity?"

Part 1. Institutional Comparisons between the Canadian and U.S. Federal Systems

Both Canada and the U.S. are tri-level federations, with active legislative, executive and judicial bodies at the federal and state/provincial level. Fiscally each has a system wherein the federal government collects the bulk of personal and corporate income taxes and transfers revenues or provides grants in aid to other orders of government. In Canada federal transfers to other governments and to individuals account for roughly 70 per cent of federal expenditures annually. In the U.S. they account for about 75 per cent of federal spending.

But there are also important differences that have affected the process of governance in each country. Most obvious is the difference in the size of population, output and the number and size of jurisdictions. Also important are differences in the Constitutional provisions that assign jurisdictional authority among the separate levels of government.

In Canada the Constitution is quite explicit in defining what the federal and provincial exclusive jurisdictions are. Provinces have very wide powers with respect to property and civil rights, natural resources, the administration of justice, hospitals, and generally all matters of a local or private nature. Education is singled out as a provincial responsibility. The federal government is responsible for defence, trade and commerce, banking and unemployment insurance. Agriculture and immigration powers are concurrent with federal paramountcy.

In addition to the usual centrally assigned powers, the federal government is authorized to make laws covering old age pensions and supplementary benefits, although they are subject to provincial jurisdictional paramountcy. The 1982 Charter also explicitly commits both levels of government to promoting equal opportunities for the well-being of Canadians and providing essential public services of reasonable quality to all Canadians. The federal government is committed to the principle of making equalization payments to the provinces.

The U.S. Constitution assigns power to Congress in Article I, Sections 8 and 9 (defense, banking, interstate and international commerce) and sets out several restrictions on states' powers (Section 10), but there is not the same explicit assignment of jurisdictions as in the Canadian Constitution. Amendment X, which reads "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people", would seem to give residual powers to the states. But after the Civil War, and especially with the advent of the New Deal, World War II and the Cold War, the role of the central government became paramount. It is instructive, for instance, that the first major domestic initiative of the present U.S. president was in the area which accounts for almost half of state and local spending, educational reform.

The contrast between the relative fiscal importance of the Canadian and U.S. federal governments respectively can be seen in Tables 1 and 2. Note that in these tables and others shown subsequently we highlight 1997 as our base year, since in both countries that was the year that the federal governments finally achieved a balanced budget. Balanced budgets minimize fiscal measurement distortions for comparative purposes introduced by surpluses or deficits.

The relative importance of the provinces in Canada as compared to the states can be seen in Tables 1a and 1b. In Canada provincial and local government expenditure amounts to about 27 per cent of GDP, a far higher proportion than that accounted for by federal expenditures. (Of the 27 per cent, about 20 are provincial and 7 per cent are local.) By contrast, U.S. state and local expenditures amount to about 12 per cent of GDP, a far lower proportion than that of federal spending in that country. (State spending accounts for roughly 8 per cent of GDP.)

Table 1a
Canadian Government Expenditures
as a per cent of GDP, selected years

	Federal		Provincial and Local		GDP
	(\$ billions)	(%)	(\$ billions)	(%)	(\$ billions)
1982	82.1	21.6	108.7	28.6	379.7
1987	117.6	21.1	151.8	27.2	558.1
1992	160.8	23.0	227.9	32.6	698.5
1997	156.5	17.8	234.7	26.7	877.9

Note that these expenditures *include* interest on and repayments of the public debt.

Source: Statistics Canada, Cat. 13-213, Provincial Economic Accounts, Annual Estimates.

Table 1b
U.S. Government Expenditures
as a per cent of GDP, selected years

	Federal		State and Local		GDP
	(\$ billions)	(%)	(\$ billions)	(%)	(\$ billions)
1982	732	22.5	363	11.1	3259
1987	1018	21.5	524	11.0	4743
1992	1419	22.5	777	12.3	6319
1994	1506	21.3	865	12.3	7054
1997	1679	20.2	980	11.8	8318

Note that these expenditures *include* interest on and repayments of the public debt.

Source: U.S. Department of Commerce, National Income and Product Accounts of the United States, 1929-94, Vol. 1, and updates.

Another measure of the greater role of the U.S. federal government can be seen in Tables 2a and 2b¹. U.S. federal grants in aid count for 23 per cent of state and local expenditures, as compared to the Canadian situation, where federal transfers account for about 11 per cent of provincial and local expenditures. (Federal transfers to local governments in Canada are trivial, whereas in the U.S. a sizeable portion of federal grants in aid go to local governments for community development, mass transit, waterworks and housing.) In the decade between 1987-97 whereas U.S. federal grants in aid as a per cent of state and local expenditures rose, Canadian federal transfers as a per cent of provincial and local expenditures dropped by almost one-third.

¹ Note however that U.S. revenue and expenditure figures include Social Security contributions and expenditures whereas Canada's CPP/QPP figures are excluded from the National Accounts. See Appendix A.

Table 2a
Canadian Federal Transfers¹ to Provincial and Local Governments
as a per cent of their Total Expenditures, selected years

	Net Federal Transfers (\$ billions)	Provincial and Local Expenditures	Per cent (%)
1982	16.3	108.7	15.0
1987	23.6	151.8	15.5
1992	31.0	227.9	13.6
1997	25.3	234.7	10.8

¹Tax points not included.

Source: Statistics Canada, Cat. 13-213, Provincial Economic Accounts, Annual Estimates.

Table 2b
U.S. Federal Grants in Aid to State and Local Governments
as a per cent of their Total Expenditures, selected years

	Grants in Aid ¹ (\$ billions)	State and Local Expenditures	Per cent (%)
1982	84	363	23.1
1987	103	524	19.6
1992	172	777	22.1
1997	226	980	23.0

¹Includes investment grants

Source: U.S. Department of Commerce, National Income and Product Accounts of the United States, 1929-94, Vol. 1, and updates.

Part 2. Fiscal Federalism in the United States

Federal-state and federal-local fiscal relations

In the U.S. the major avenue for addressing regional concerns and issues of interstate and intrastate poverty is through the voting coalitions of individual members of Congress, rather than through inter-governmental negotiations as in Canada. One factor here, of course, is the sheer number of governments, which has tended to favour federal instruments and federal regulations and limited the role of state governments. In addition, the influence of Congress combined with a long tradition of local autonomy has resulted in very extensive direct federal-local interaction. Five of the eight largest federal grant programs in the U.S. flow directly to urban governments. And indeed in education, far from being off-limits to federal intervention, Congress's Elementary and Secondary Education Act of 1993-94 took over one thousand pages and covered subjects in minute detail ranging from academic standards and teacher training to sex education, gay rights, gun control, pornography, drugs, smoking—and more.

Over the years the number of federal grants has mushroomed. Today there are close to 650, of which all but about 20 are conditional, often—as in the case just cited—highly so. They result from the sheer number of issues dealt with by Congress, the many jurisdictions and the desire to ensure that the treatment of people and goods and services is of high quality and relatively uniform from state to state. And when the administering agencies are to be 50 different state governments, or an even greater number of local governments, the temptation to add detail is even stronger.

Redistribution among states through federal revenues and expenditures

What is the effect of the combination of federal spending and revenue on individual taxpayers in each of the 50 states? To ensure neutrality we have chosen the year 1997, since it was the year of the first federal balanced budget in 30 years. Arguably, most of the redistribution resulting from federal programs is between persons within the individual states themselves. And the net redistribution of federal spending and taxing activity across states is a more or less accidental by-product of the collectivity of individual programs. Nonetheless, unlike Canada, as there is no constitutional requirement in the U.S. to direct resources to equalize opportunities or public services, it seems germane to ask: Is the federal fiscal authority (*fisc*) relatively neutral across the states, or is it positively or negatively redistributive?

The Taubman Center for State and Local Government, Harvard University obtained geographic data—state by state—on federal taxation and expenditures. For each state it calculated the difference between federal spending received and taxes paid with the result reported as a "balance of payments" (BOP) from the state's perspective. To take account of population differences it then reported these on a per capita basis. These are shown in Graph 1.

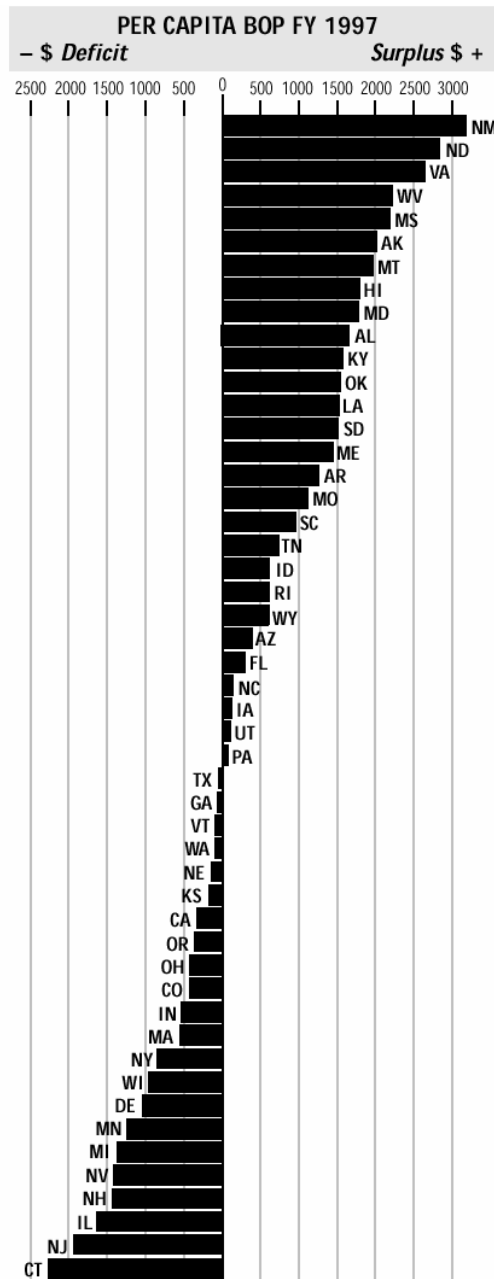
On a per capita basis, sparsely populated New Mexico and North Dakota head the list, with BOP surpluses of just over and under \$3,000 respectively, followed by Virginia, West Virginia and Arkansas. At the other end of the spectrum, Connecticut—which enjoys the nation's highest per

capita income—has the greatest BOP deficit of almost \$2,300, followed by New Jersey, Illinois, New Hampshire and Nevada.

In total amounts, their proximity to the nation's capital resulted in Virginia and Maryland receiving the most—surpluses close to \$18 billion and \$9 billion respectively—followed by several relatively poor states, Alabama, Louisiana and Mississippi. The states with the largest BOP deficits were Illinois and New Jersey, with deficits of \$20 billion and over \$15 billion respectively, followed by New York, Michigan and California.

There is considerable geographic concentration of the states with the largest per capita surpluses and deficits. The Northeast and Great Lakes regions are home to almost all of the states with the largest per capita deficits. Indeed, the combined outflow from these ten states was almost \$87 billion in 1997. The states with the largest per capita surpluses are somewhat less concentrated, but there is a noticeable clustering in the South.

**Graph 1
United States**

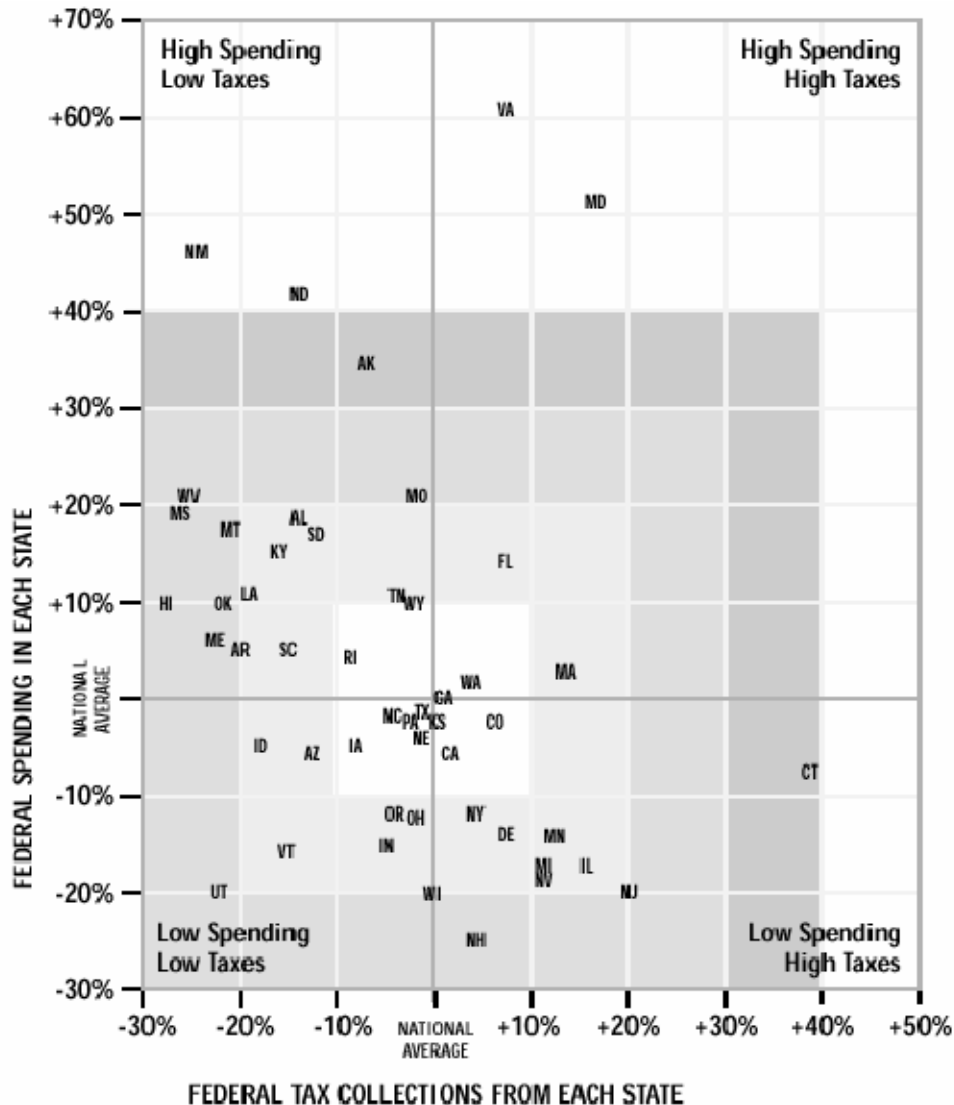


Source: Walder, J. and H. Leonard, *The Federal Budget and The States*, Fiscal Year 1997, p.1.

Of course, where each state ranks in its total or per capita BOP reflects its situation in terms of tax payments to and payments from the federal government. Graph 2 plots each state according to whether it is close to the national average on both these fronts. On a per capita basis, Connecticut pays close to 40 per cent more in taxes, and receives about 8 per cent less than the national average; Hawaii pays close to 30 per cent less in taxes and receives 10 per cent more in federal spending than the national average. Aside from the two states in the capital region, only three states exceed the national average for both spending and taxes. Florida's large elderly population benefits from Social

Security and Medicare, which accounts for 70 per cent of federal spending in that state. Federal spending in Massachusetts and Washington is only slightly above the per capita national average.

Graph 2
Federal Spending and Tax Collections as a per cent of the National Average



Source: Walder, J. and H. Leonard, The Federal Budget and The States, Fiscal Year 1997, p.31.

The geographic distribution of federal taxes is closely related to income. Personal income taxes account for almost half of federal revenues, and social insurance taxes (linked to Social Security and Medicare) based on wages another third. Thus the Northeastern states and a cluster of Atlantic and Pacific coastal states, and several Great Lakes states pay the highest amount of taxes, whereas the lower income states in the South pay the least.

The geographic distribution of federal spending is more complex. The largest component of federal spending is payments to individuals, largely determined by the proportion of elderly residents in each state. Agriculture subsidies are concentrated in farm states. And the location of defence spending is

largely a function of where defence contractors and existing military facilities are located. Apart from that, other factors may reflect deliberate Congressional strategic or political choices, or initiatives by the states themselves.

This brings us to the distributional consequences of the federal fiscal activity (the fisc). Perhaps the most important observation is that the principal consequence of the fisc is across individuals, less so among states. Whereas the range of individual earnings is huge, from near zero to millions or more, average state incomes vary by about 25 per cent of the national average. As a result, the redistributive impact of the fisc across states is only a very small part of the story. That being said, on balance the fisc does produce a net distribution from wealthier to less wealthy states. Most of this is due to the correlation of taxes with income, resulting in higher per capita tax payments from wealthier states. Federal expenditures are mildly redistributive towards poorer states. On average, the wealthiest states receive about \$900 per capita less in federal spending than the poorest states. Thus both sides of the fisc contribute to a state-to-state redistribution from wealthier to less wealthy, although taxes are the more effective redistributive mechanism.

Part 3. Fiscal Federalism in Canada

Federal-provincial fiscal relations

As noted earlier, the provinces exercise much greater exclusivity in the delivery of health, education and social service programs than do the states in the U.S. As a consequence their share of expenditure typically exceeds that of Canada's federal government and the U.S. states' share as a proportion of GDP. Another fact that sets federal-provincial relations apart from federal-state relations is that the two central provinces (Ontario and Quebec) are so dominant in both population and output.

However, unlike the U.S., where little attempt has been made to coordinate or harmonize the state and federal taxing initiatives, Canada has enjoyed a more integrated fiscal regime marked by:

- (i) The federal government as the collection agency for personal income taxes,
- (ii) The use of the federal personal income tax as the basis for provincial personal income taxes, and
- (iii) The right of provinces to "opt out" of federal or federal cost-shared initiatives in exchange for tax points and agreement to provide similar services provincially.

The 1990s saw considerable fiscal retrenchment. For the two major federal-provincial cost sharing programs—Established Program Financing (EPF) covering health and higher education and the Canada Assistance Plan (CAP) covering social assistance—the federal government altered the growth formula of federal cash payments. In the case of CAP, the federal government "capped" its contributions—normally 50 per cent—in selected provinces. In Ontario, though hardest hit by the recession, the effective contribution rate was 29 per cent, and at the margin zero.

Both programs had implicit weaknesses. EPF was built on a structure that involved assigning tax points to the provinces coupled with cash grants from the federal government. But the client base and costs in higher education and health were rising more quickly than the funding formula could handle, and with the imposed restrictions there were fears the federal cash portion would disappear within a decade. The recession and cutbacks in the employment insurance program had also expanded CAP's client base beyond its funding capability. In 1996-97, after extensive discussions with the provinces, the federal government decided to combine both programs into a new block-funded program, the Canadian Health and Social Transfer (CHST).

The cash portion of the CHST is a relatively unconditional block grant which requires only adherence to the Canada Health Act, and to the provision that there be no residency requirements limiting access to social assistance. Most of the funding emphasis has been put on the health and education side. However, on the side of social assistance the provincial governments are relatively free to set their own benefit levels and experiment with work, training and other related incentives to encourage employable beneficiaries to become self-sufficient.

Apart from the CHST, the federal government now appears increasingly to be limiting its socially directed expenditure programs to those areas where it has a clear constitutional authority—aboriginal

people, old age security, equalization payments and employment insurance—and to be pursuing the Constitution's commitment to equalising opportunities through measures that reflect its traditional fiscal authority. Rather than pushing the goals of higher education through explicit conditions in CHST, for instance, it has shifted its focus to individual students in the form of tax credits, scholarships, loans and study grants. And in support of its child care commitments it has used the traditional income tax system to target benefits at low-income parents, as well as the employment insurance system to extend parental benefits by 25 weeks.

Indeed, for many years the insurance features of the Employment Insurance program have been supplemented with income support provisions favouring persons in the regions of high unemployment, on maternal or parental leave, and those undertaking training. As such, the EI program has been traditionally a major instrument for redistributing funds from low to high unemployment provinces, which correlates with high-and low-income provinces.

In the recent years of low unemployment and strong economic growth the federal government used the massive surplus on the EI account to reduce its accumulated debt, and the extent of the redistribution has been less visible. But it is very significant nonetheless. Ontario takes the biggest hit. In 1997, for instance, Ontario contributed over \$5 billion, and Quebec and the western provinces \$4 billion, in EI surpluses used to lower the federal debt, while the four Atlantic provinces on balance drew funds from the program. This is totally unlike the U.S. situation, where unemployment insurance is operated by the states, and (although usually supplemented federally in difficult times) thus mainly self-financing.

Some years ago the federal government offered to transfer the development portion of EI funds for training to the provinces and most have taken that route. Indeed, even prior to that the federal government signed over all its employment, training and immigrant settlement responsibilities in Quebec to that province's government. And, of course, the federal government has long since dropped most of its urban development and social housing efforts, unlike its counterpart in the United States. And whatever regional policies it once pursued, these are much reduced and relatively well buried in the funding agencies that report through Industry Canada. The principal explicit regional transfer mechanism remains the Equalization program.

There have been some criticisms of Equalization payments, reflecting efficiency and equity concerns.² The efficiency argument, which has been widely echoed in the literature on UI, is that redirection of funds to regions of high unemployment or low income reduces mobility from low to high productivity regions and thus helps perpetuate the problem. The equity argument holds that because the funds are from general revenue, and the grant is unconditional, the poor in the richer donor provinces may well be subsidizing the rich in the receiving provinces. Whatever the merits of both arguments, and they have been well discussed and critiqued³, Section 36(2) of the Charter affirms Parliament's commitment to the principle of making equalization payments.

² Usher, Dan, The Uneasy Case for Equalization Payments

³ Boadway, Robin, Book Review, National Tax Journal, Vol. XLIX, No.4, p.677-686

Table 3
Equalization Payments
(and other Taxation Agreements)
by Province, 1997

	\$ millions	\$ per capita
Canada	9,914	330
Newfoundland	1,022	1,845
Prince Edward Island	200	1,460
Nova Scotia	1,206	1,290
New Brunswick	992	1,316
Quebec	4,185	573
Ontario	28	2
Manitoba	1,110	977
Saskatchewan	50	49
Alberta	-6	-2
British Columbia	-2	-1
Yukon	283	8,844
Northwest Territories	846	12,441

Source: McCracken, M.C., *The Distribution of Federal Spending and Revenue: Implications for the Provinces*, p.20.

Redistribution among provinces through federal revenues and expenditures

How extensive is the redistribution embodied in Canada's federal fisc? There is a considerable amount of redistribution from the wealthier to the poorer provinces. In 1997, the federal government's revenues per capita ranged from about \$4,500 in Alberta and Ontario to under \$3,000 in Newfoundland and New Brunswick. By contrast, its per capita expenditures for 1997 ranged from a low of under \$3,400 for Alberta and Ontario to over \$7,000 in Nova Scotia, PEI and Newfoundland. As a result, Alberta and Ontario had net per capita balance of payments (BOP) deficits of over \$1,000, and Nova Scotia, PEI and Newfoundland had per capita balance surpluses of over \$4,000 (Table 4).⁴

⁴ For technical notes on scaling of revenues and the precise definition of the terms redistribution and balance of payments, see the section *Data and Definitions* at the end of this paper.

Table 4
Federal revenues, spending and balance by province, 1997

	Dollars per capita			Balance (\$millions)
	Revenues ¹	Expenditures	Balance	
Canada (average)	3,878	3,878	0	0
Newfoundland	2,498	7,413	4,915	2,723
Prince Edward Island	3,054	7,861	4,807	659
Nova Scotia	3,034	7,674	4,639	4,338
New Brunswick	2,914	6,411	3,497	2,637
Quebec	3,299	3,881	582	4,255
Ontario	4,426	3,379	-1,047	-11,794
Manitoba	3,224	5,599	2,374	2,697
Saskatchewan	3,154	4,571	1,418	1,449
Alberta	4,586	3,002	-1,584	-4,494
British Columbia	3,858	3,235	-623	-2,468

¹Revenues have been scaled to equal expenditures.

Source: Statistics Canada Cat. No. 13-213, Provincial Economic Accounts, and calculations by Informetrica Limited

Seven provinces gain on a per capita basis, whereas Alberta, Ontario and British Columbia contribute. On the other hand, because of the size of its population, Ontario is by far the largest donor province in terms of total dollars (\$11.8 billion), and the Atlantic Provinces collectively are the largest beneficiary region (\$9.6 billion).

Both revenues and expenditures contribute to the overall redistribution of funds, but unlike in the United States where the tax system achieves most of the redistribution, in Canada the expenditure system dominates. This can be seen in Table 5. On a per capita basis, there was a transfer to Newfoundland of 27.5 per cent of personal income, of which 7.7 per cent was from lower taxes and 19.8 per cent from higher federal expenditure. By contrast, Ontario experienced a loss of 4.1 per cent of personal income per capita, resulting from paying federal revenues 2.2 per cent above the national average, and receiving federal expenditures 2.0 per cent below the national average.

In 1997, gross federal finances (revenues plus expenditures) amounted to roughly \$232 billion, of which \$18.8 billion or 8 per cent were redistributed among the provinces. Of the total redistributed, more than \$8 billion were in the form of per taxpayer revenue differentials as between the rich and poorer provinces. Federal expenditures favouring the poorer provinces redistributed almost \$11 billion (Table 6).

Table 5
Federal Revenues and Expenditures by Province, 1997

	Deviation from national average as share of personal income		Balance as share of personal income
	Revenues ¹	Expenditures	
Newfoundland	7.7%	19.8%	27.5%
Prince Edward Island	4.4%	21.4%	25.8%
Nova Scotia	4.2%	19.1%	23.3%
New Brunswick	4.9%	12.9%	17.8%
Quebec	2.6%	0.0%	2.7%
Ontario	-2.2%	-2.0%	-4.1%
Manitoba	3.0%	7.9%	10.9%
Saskatchewan	3.6%	3.4%	7.0%
Alberta	-2.8%	-3.4%	-6.2%
British Columbia	0.1%	-2.7%	-2.6%

¹ A positive revenue figure means that federal taxes are lower than the national average, and resources are distributed to the province. A negative figure means the federal taxes are higher than the national average, and resources are distributed away from the province.

Source: Statistics Canada, Cat. No. 13-213, Provincial Economic Accounts, and calculations by Informetrica Limited

Table 6
**Redistribution, Federal Government
Revenues and Expenditures**

	Total federal	Total revenues	Total expenditures (billions of dollars)	Expenditures excl. equalization
Total amount	232.0	116.0	116.0	107.2
Amount redistributed	18.8	8.2	10.7	7.4
Share redistributed	8%	7%	9%	7%

Source: Statistics Canada Cat. No. 13-213, Provincial Economic Accounts, and calculations by Informetrica Limited

The federal government's principal revenues derive from personal income and payroll taxes, and the GST. Its expenditures are more diverse. They can be clustered into exhaustive expenditures—payment for goods and services, including wages; transfers to persons—OAS/GIS, EI and other benefits; and transfers to provincial and local governments. Each of these expenditure categories has interprovincial distribution features.

Within the total expenditures, \$3 billion was redistributed through exhaustive expenditures, \$4 billion in transfers to persons, and over \$5 billion in transfers to other governments (Table 7). Within transfers to other governments, the smaller component Equalization Payments accounted for most of the redistribution, whereas only 9 per cent of the other \$15 billion transfers to other governments were redistributed. The latter transfers consist mostly of the CHST, which still has redistributive vestiges in its formula left over from the EPF/CAP days.

Table 7¹
Redistribution through Federal Government Expenditures
by Expenditure Component
 (billions of dollars)

	Exhaustive	Transfers to persons	Transfers to other gov'ts (TOG)	TOG Equalization	Other
Gross flows	34.1	58.3	23.6	8.8	14.8
Total redistributed	3.0	3.9	5.4	5.5	1.3
Share redistributed	9%	7%	23%	63%	9%

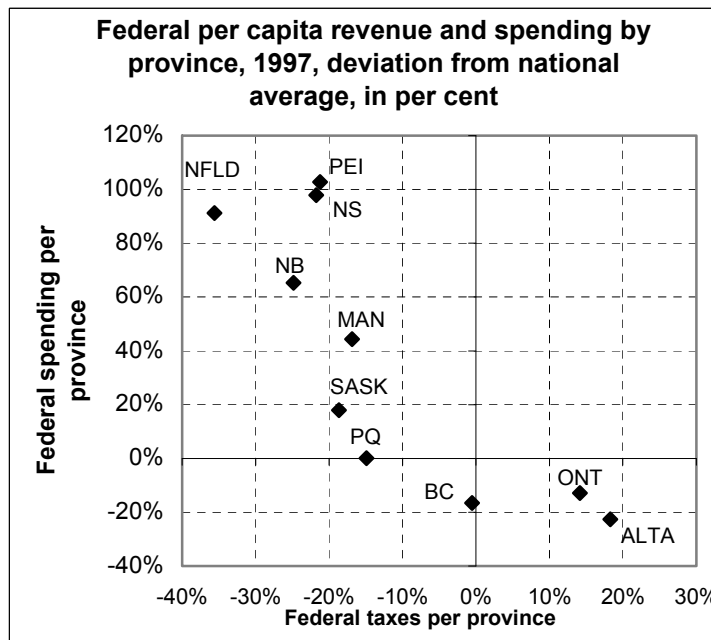
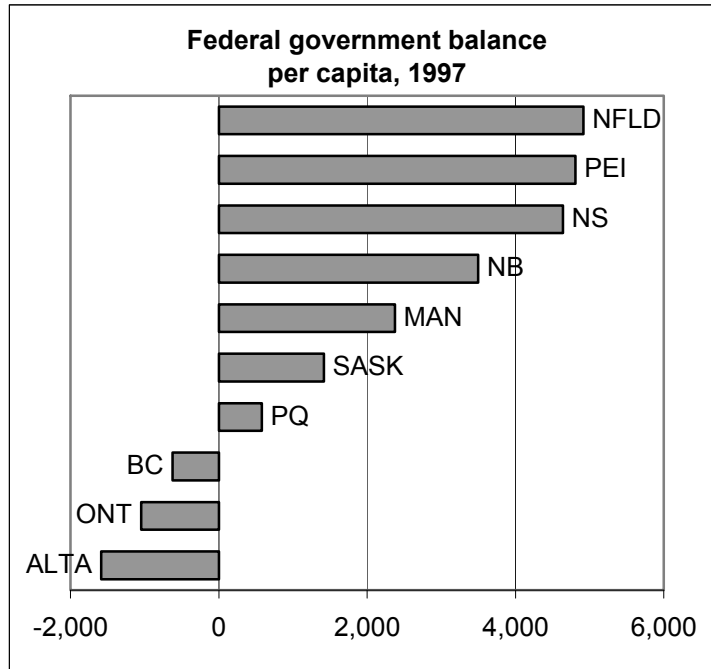
¹The redistributive component of total federal expenditures shown in Table 9 is smaller than the sum of the redistributive components of the three expenditure categories in Table 10. This is so because the pattern of redistribution may vary between expenditure categories. For instance, exhaustive expenditures may be above the national average in a province, while transfers to persons are below the average in the same province. In calculating the redistributive component of total expenditures, these two items cancel each other out, in whole or in part. The same reasoning applies to the breakdown of transfers to other governments into equalization payments and other transfers.

Source: Statistics Canada, Cat. 13-213, Provincial Economic Accounts, and calculations by Informetrica Limited.

The equalization program is explicitly intended to redistribute resources between provinces. This program has no direct counterpart in the U.S. Not a great deal of redistribution among the provinces is accomplished through other federal expenditures, however (Table 6, last column).

Looked at overall, Canada's federal fisc on a per capita basis appears to be somewhat more redistributive than that of the United States. The four Atlantic Provinces receive 65 to 100 per cent more than the national average in federal spending and contribute at least 20 per cent less than the national average in taxes. Residents in the three provinces—Alberta, Ontario and B.C.—traditionally excluded from receipt of Equalization Payments, foot the bill (Graph 3).

Graph 3



Part 4. Some Comparisons

In both the U.S. and Canada the federal governments faced the problem of having their legislated programs administered even-handedly across a very diversified continent. In the U.S. conditional grants continue to be the instrument of choice. The tilt of the federal fisc towards the poorer states has increased slightly, with the reductions in defense spending which tended to be concentrated in higher income states. Indeed the -25% expenditure correlation coefficient for 1997 cited in Table 8 reflects a reversal of the positive 20% coefficient prevailing in the 1980s.

Canada has fewer jurisdictions, and the two levels of government have been quite successful in dividing responsibilities for funding and administering programs within their own jurisdiction. To achieve national goals in health, higher education and public services, the federal government has used the power of the purse where jurisdiction is provincial, leaving the provinces to administer their own programs. In all cases they have done so. This has been accomplished through the two large federal-provincial transfer programs, the CHST and Equalization Payments (there are others but they are relatively small). Both transfer programs are remarkably free of conditions.

Indeed, because of its fewer jurisdictions, and the fact that the Constitution clearly gives the provinces exclusive responsibility for municipalities, Canada has seen to the vertical and horizontal interdependencies of government activities through a system of "co-operative" or "reciprocal" federalism. This consists of federal-provincial committees, starting from first ministers down to mid-level public servants, whose objectives are to achieve policy coherence and reciprocity and consistency across the diverse provinces.

We have seen that in both countries the federal fisc has redistributive consequences for the states/provinces on both the revenue and expenditure sides. In both countries the redistribution is from high to low income jurisdictions. In the U.S. the revenue correlation is high, because of the progressivity in the income tax structure and the fact that states with higher average incomes pay more taxes than low-income states. There is a much lower correlation on the expenditure side, since the U.S. has no equivalent of Canada's Equalization or federally run Employment Insurance programs (Table 8). What correlation there is springs as a fall-out from other programs targeted at special groups such as the elderly, urban poor, etc.

Table 8
Correlation with Personal Income
per Capita, 1997

Correlation coefficients	Canada	United States
Revenues	96%	96%
Expenditures	-89%	-25%
Balance	-94%	-70%

Source: Walder, J. and H. Leonard, *The Federal Budget and The States, Fiscal Year 1997*, p.42, and calculations by Informatrica Limited.

In Canada the federal fisc has a pronounced provincial tilt from high income to low income. On the revenue side the correlation arises for the same reasons as in the U.S. On the expenditure side, the very nature of programs that involve transfers to individuals, and Equalization payments, are the basis for redistribution. The main transfers to individuals all entail cross-subsidization from some groups to others, with some portion crossing provincial boundaries as a serendipity effect. EI is mainly a transfer from the steadily employed to the frequently unemployed, CHST from the healthy to the sick and to students, CPP/QPP and OAS/GIS from working adults to retirees. Together they entail interprovincial flows of funds away from Ontario, Alberta and British Columbia to the weaker provinces, thereby augmenting the effects of Equalization.

Equalization payments are only partial contributors to the redistribution generated by the federal fisc, and their hypothetical exclusion—as per the U.S. practice—would only reduce the share of expenditures redistributed from 9 to 7 per cent (Table 6). Of no less re-distributional significance is the nationally administered Employment Insurance system. While contributions are standard across the board, since they are payroll based it is not surprising that higher income and employment provinces contribute proportionately more per capita than their less robust counterparts. On the benefit side the reverse tends to be so. The results on a per capita basis for the year 1997 ranged from roughly \$660 in Newfoundland and P.E.I. to -\$478 and -\$458 in Ontario and Alberta respectively.

We then posed the hypothetical questions: "If Canada moved completely to the U.S. system of no equalization and the equivalent of state run self-sufficient Employment Insurance what would be the annual savings for the donor provinces and the revenue shortfalls for the recipient provinces? Would the provincial distributional picture begin to resemble the fairly random scatter of the United States shown in Graph 2?"

The answer to the first question depends of course on whether the federal government raised other taxes to replace the EI surpluses it now pockets. Assuming it did not, based on 1997 figures, the savings for Ontario, Alberta and British Columbia would have been in the order of \$9.1 billion, \$2.3 billion and \$2.4 billion respectively. The Maritimes collectively would have lost about \$3.5 billion and Quebec about \$1.2 billion. (Table 9)

The answer to the second question is displayed in Graph 4. The result is a slight flattening out of federal spending and taxes per province. But even without the binding glue of such national policies as Equalization Payments and nationally run Employment Insurance, the combination of other federal policies, both on the revenue and expenditure side, generally result in a federal fiscal system that tends to favour resource transfers from stronger to weaker provinces.

Although Quebec is adversely affected by the loss of Equalization Payments, there is still not the same random scatter produced by the U.S. system. Of course, as between the two countries, the picture may be simplified because of the differences in the number of provincial vs. state jurisdictions. But Graph 4 also suggests that in terms of fiscal federalism Canada's traditional approaches to "cooperative" or "reciprocal" federal-provincial relations, and a "progressive" federal fiscal stance vis-à-vis the provinces, are quite firmly rooted.

Despite the preceding counterfactual calculations, Canada is not about to "Americanize" programs that constitute an integral part of Canada's federal-provincial compact, and the federal government's

constitutional commitment. Nor is it about to emulate the U.S. system of shared jurisdiction that sees the federal government intervene directly or through detailed conditional grants down to very local levels of urban renewal, education, environmental and occupational health and safety and other areas assigned in Canada to the provinces.

The fiscal redistribution among states in the United States federal fisc is to a degree accidental, and driven largely by revenue flows and the demographic and economic circumstances within each state. In Canada the practice of federal intervention, following upon federal-provincial agreement, to redistribute resources from more to less favoured provinces or regions is more deeply entrenched.

Table 9
Net Provincial Balances
from Eliminating Equalization Payments and
"Provincializing" Employment Insurance, 1997

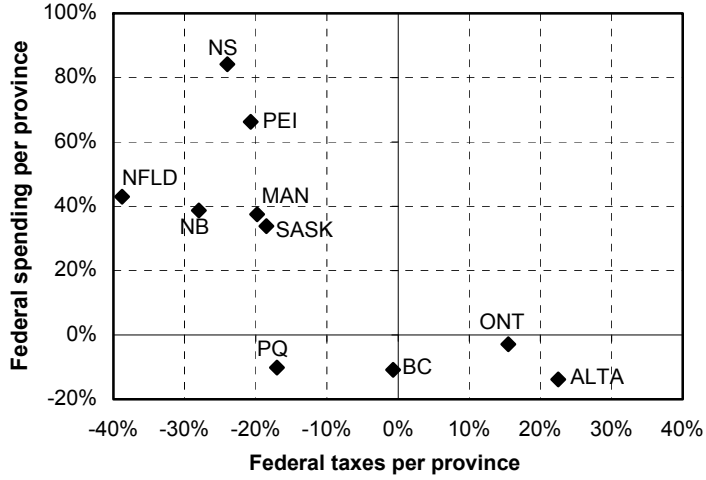
	Equalization payments (\$millions)			Employment Insurance balance	Overall balance including EI (\$millions)
	taxes ¹	benefits	balance		
Newfoundland	105	1,022	917	365	1,282
Prince Edward Island	28	200	172	91	263
Nova Scotia	224	1,206	982	10	992
New Brunswick	171	992	821	134	955
Quebec	1,711	4,185	2,474	-1,266	1,208
Ontario	3,814	28	-3,786	-5,379	-9,165
Manitoba	292	1,110	818	-402	416
Saskatchewan	243	50	-193	-335	-528
Alberta	966	-6	-972	-1,300	-2,272
British Columbia	1,189	-2	-1,191	-1,222	-2,413

¹Assumes these are proportional to the federal personal levies.

Source: McCracken, op. cit. and Informetrica estimates.

Graph 4

Federal per capita revenue and spending by province, excluding equalization payments and unemployment insurance, 1997, deviation from national average, in per cent



Part 5: Productivity and Federal Fiscal Arrangements

At this juncture an observer might well observe: "This is all very interesting but what does it have to do with productivity and the recent decline of Canada's living standards relative to the United States over the past decade or so?" This brings us back to our initial GDP per capita identity and the partitioning of GDP per capita into that associated with the employed and the non-employed. We saw that about 70 per cent of federal expenditures went as transfers to individuals or other governments largely in support of the non-employed. Which raises the question: Do transfers of this magnitude, both intra- and inter-province, not hurt Canada's productivity performance? More particularly, don't Canada's unique EI and Equalization programs, that are deliberately designed to shift resources from high productivity, income and employment provinces to low productivity, income and employment provinces, have the effect of significantly reducing overall productivity growth, especially in relation to the U.S.?

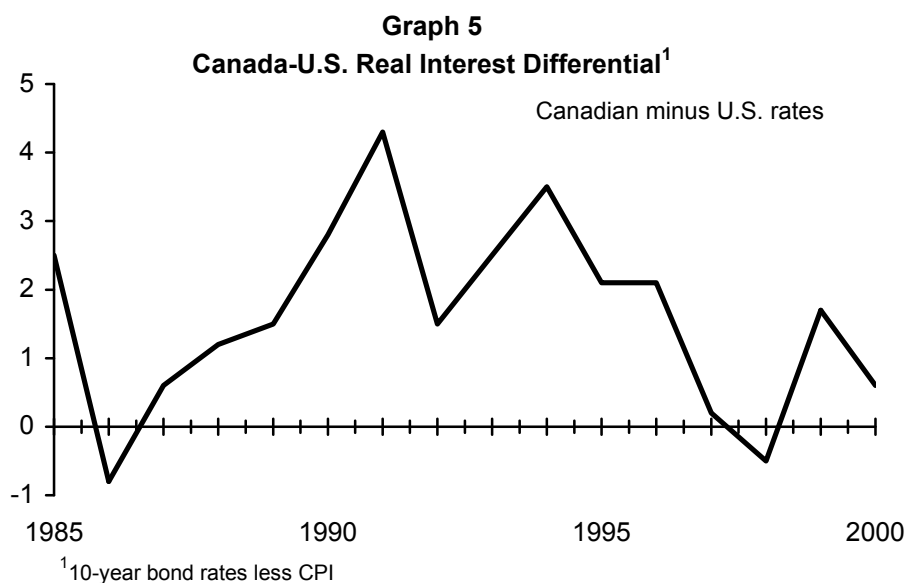
With respect to the CHST transfers it is generally agreed that for at least that portion that reinforces the health or skills of persons in or destined for the labour force the expenditures should be considered as investments in human capital, and judged accordingly. That which goes towards the elderly, or the permanently sick or disabled or incarcerated, should be judged on different criteria. And while there may be more or less efficient ways of delivering education and health care it is generally agreed that they contribute to productivity and GDP per capita growth over the long haul. The CHST fiscal formula is driven mainly by population, and thus it mainly entails intra-provincial transfers, although there are some inter-provincial flows. And compared to the U.S. system, at least on the health front the Canadian system appears to be the more efficient, on whatever measure one selects—life expectancy, patient access or overall public-private costs as a proportion of GDP. On the education front, as Fortin reported in the last Monitor, we have the same secondary and post-secondary enrolment rates as the U.S. for roughly the same proportionate costs, and while not great our showings compare favourably to the U.S.'s on international literacy and numeracy tests.

Canada's combined old-age security programs CPP/QPP and OAS/GIS also compare favourably with the U.S. social security system in that the latter is contributory only and does not offer income protection such as the OAS/GIS does to the elderly who may have limited work experience or none at all. The latter program, in particular, has mainly intra- but some inter-provincial re-distributional consequences from employed to non-employed. As will be seen in Appendix A, the CPP/QPP involves very limited inter-provincial transfers.

Finally, there are the two programs specified above, the EI and Equalization programs, and Canada's inferior productivity performance and reduced living standards relative to the U.S. With respect to the EI, it must first be acknowledged that Canada's federally-based system has traditionally been much more generous than the U.S. state-based system on almost any measure selected. Insofar as it encourages less geographic mobility or the perpetuation of labour-intensive seasonal jobs, undoubtedly it contributes somewhat to lower measured productivity. Much the same can be said for the Equalization program. This of course begs the question of the associated benefits of greater personal income security, better quality services and the preservation of local communities that the two programs allegedly encourage, and which are to a degree less present in the U.S.

As to the widening gap in U.S.-Canada living standards, and Canada's dismal productivity performance, it should be noted that—as Sharpe clearly states—that gap occurred mainly in the years leading up to and following the 1990-92 recession. Since the mid-1990s our productivity performance has been quite exceptional, even though it has been eclipsed by the U.S. There has been no serious change to the Equalization program or formula for over twenty years, so it is difficult to finger it as a significant contributing cause. Much the same can be said of EI. If anything, it has become slightly more restrictive in recent years.

Moreover, while theoretically the worry about shifting resources from high to low productivity regions is valid, one should not confuse average and marginal measures. There is no question that workers in Alberta and Ontario, and to a lesser extent British Columbia, enjoy overall value-added per worker measures that are the highest in Canada, while the lowest occur in the Maritimes. But in any given year the richer provinces are not necessarily those where the fastest output or productivity growth is taking place and where theory suggests resources should be shifted. Indeed, it is worth noting that in exactly half the twelve years 1989-2000, covered by Sharpe's study, a Maritime province led all provinces in annual output per employee growth.



Undoubtedly there were many contributing factors to the widening U.S.-Canada living standards and productivity gap, but there is little reason to believe that it was due to differences in the two country's social programs or federal fiscal arrangements, which have generally been in effect for a much longer period. The more likely culprit can be seen in Graph 5. It may be recalled that during the late 1980s Canada adopted a much more severe monetary policy than that in the U.S., with the Governor of the Bank of Canada calling for a target of "Zero Inflation". This resulted in increases in interest rates in Canada such that the Canada-U.S. after-inflation real long-term rate averaged over 2 per cent, even exceeding 4 per cent in one year, well into the 1990s. This increase in the relative price of capital in Canada undoubtedly added to the severity of the recession, discouraged investment, deepened unemployment, drained federal and provincial budgets and contributed to the worsening of the living standards of Canadian working men and women relative to their U.S. counterparts.

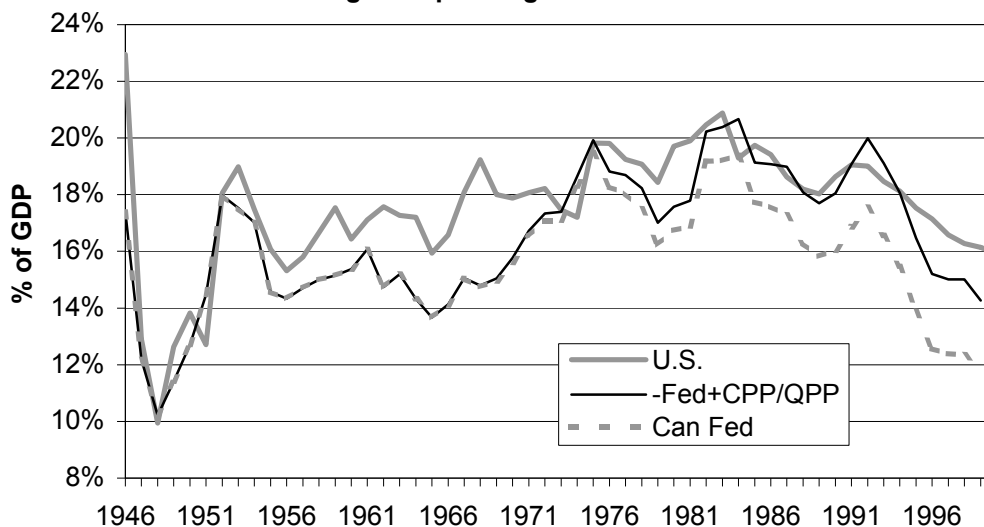
More recently, of course, Canada's inflation rate has been lower than the U.S.'s, the Canadian-U.S. real interest differential has fallen to the 0.5 per cent range, and the economy appears to be relatively robust in its response to the current business downturn.

Appendix A

Canada / Quebec Pension Plans

In Part 1 of this study comparisons are drawn between the amounts of U.S. and Canadian federal and state/provincial/local expenditures in selected years and their share in relationship to GDP. The comparisons, however, are somewhat misleading because of differences in the treatment of U.S. social security contributions and benefits and those of Canada's CPP/QPP in each country's national accounts. The U.S. includes them as part of federal revenues and expenditures whereas Canada treats them as separate for purposes of its National Accounts. This difference in the accounting treatment of the pension entitlements has the effect for instance from the U.S. perspective of skewing Canada's federal expenditures as a share of GDP downward by more than two percentage points. Indeed if Canada had adopted the U.S. accounting procedures, Canada's federal expenditures as a share of GDP would have tracked the comparative annual U.S. figure much more closely since the introduction of CPP/QPP in the late 1960s. Graph A-1 shows federal expenditures as a share of GDP for the U.S. and Canada over the period 1946 to 2000 including and excluding CPP/QPP.

Graph A-1
Program Spending - Canada and U.S.



Source: Statistics Canada and U.S. Department of Commerce, National Accounts, and calculations by Informetrica Limited.

There is also the question of how much this exclusion of Canada's CPP/QPP from the national and provincial accounts skews the redistributational comparisons explored in this study. It was observed in Part 2, for instance, that U.S. social security payments were a major redistributational factor in the state of Florida.

For Canada, we re-calculated the estimates presented in Part 3, Table 10, to include CPP/QPP. The results are shown in Table A-1. CPP/QPP it turns out is not by itself a significant inter-provincial redistributive instrument. In 1997, of the \$22.9 billion in expenditures less than \$1 billion, or only 4 per cent, entailed redistribution among the provinces. Two provinces, Alberta and British Columbia, were net donors; eight provinces including Ontario were net recipients. For Quebec, of course, the effects were minimal since CPP is available to relatively few in-migrants from other provinces and the redistributive effects of QPP are virtually all within the province.

Table A-1
Redistribution through Federal Government Expenditures
by Expenditure Component
(billions of dollars)

	Expenditures	Exhaustive expenditures	Transfers to persons	Transfers to other gov'ts (TOG)	CPP/QPP
Gross flows	138.9	34.1	58.3	23.6	22.9
Total redistributed	10.7	3.0	3.9	5.4	0.8
Share redistributed	8%	9%	7%	23%	4%

Source: Statistics Canada, Cat. 13-213, Provincial Economic Accounts, and calculations by Informetrica Limited.

That Alberta was the largest per capita donor province is not surprising considering its youthfulness and relative prosperity. Its median age is well below the Canadian median, and its old-age dependency ratio of 14.8 compares favourably to the national 18.5 ratio. More surprising, perhaps, is Ontario as a net receiver province. Ontario's old-age dependency ratio is only slightly higher than the national average. However, a possible explanation may lie in Ontario's traditionally high male and female participation rates and the fact that for many senior families both members contributed to and are drawing CPP entitlements.

Data and Definitions

The analysis of federal government revenues and expenditures starts with federal expenditures per capita overall. In the U.S., all domestic expenditures—those in the fifty states and the District of Columbia—are included. In Canada, expenditures in the ten provinces are included. Interest on the public debt is not included in federal expenditures, since it cannot be allocated to the states and provinces. It is however included in the overall Canadian and U.S. expenditure figures shown in Tables 1a and 1b.

Total federal revenues do not equal total federal expenditures so defined, but for the purpose of analysing the geographic distribution of federal revenues and expenditures, revenues are scaled so that they equal expenditures in the aggregate and on a per capita basis. In recent years, federal revenues have been higher than expenditures excluding interest on the public debt in both the U.S. and Canada, so that revenues are scaled down in the analysis.

Federal revenues and expenditures by state or province are then expressed in per capita terms by dividing by the population of the state or province. The difference between per capita revenues and expenditures of a state or province and the national average is the per capita balance of payments of the state or province, and measures the redistribution of resources to or from the state or province.

For instance, 1997 federal government expenditures in the ten provinces combined were \$116.0 billion or \$3,878 per capita. Revenues collected in the ten provinces amounted to \$154.1 billion, or \$5,153 per capita. Federal revenues in Ontario were \$5,882 per capita. After adjusting to match expenditures, per capita federal revenues in the ten provinces were \$3,878, and in Ontario they were \$4,426. The difference between these two amounts (\$548), multiplied by Ontario's population, is part of Ontario's balance of payments with respect to the federal government, and is also a component of the redistribution of financial resources between the provinces brought about by the federal government.

For the U.S., a further adjustment is made to take account of differences in the cost of living among the states. Personal income per capita, and all federal revenues and expenditures at the state level are divided by the cost of living. Federal revenues are scaled to expenditures after the cost-of-living adjustment. However, a comparison of the cost-of-living adjusted and non-adjusted data show trivial differences except for the outlying states of Alaska and Hawaii. There were virtually no changes in the circumstances of states and their rankings, and no instances where use of the adjusted data changed a state's balance from surplus to deficit or vice versa. No cost-of-living adjustment was made to the data for Canada because no reliable, up-to-date estimates of spatial differences in the cost of living are available.

For Canada, except where deliberately shown, data for the Territories are excluded from the tabulations. Also, unlike the U.S. data, which includes federal Social Security and Medicare/Medicaid programs, the Canadian data exclude the Canada and Quebec Pension Plans, which the National Accounts treat separately. (See Appendix A) Canada's Medicare expenditures under the Canada Health Act are provincial.

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