

Ross Finnie

School of Policy Studies
Queen's University

Daniel Schwanen
Editor's Note 2

Ross Finnie
The Brain Drain: Myth and Reality –
What It Is and What Should be Done 3
Introduction 3
The Brain Drain: An Empirical
Perspective 4
Brain Drain Policy 12
Conclusion 25

Peter Kuhn (University of California,
Santa Barbara)
The Brain Drain: A View from Below 30

Peter Barrett (Canadian Medical Association)
Who Let the Docs Out? 37

John Helliwell (University of British Columbia)
Brainstorming 46

David Stewart-Patterson (Business Council
on National Issues)
The Brain Drain is a Symptom of Broader Ills:
Tax Policy is a Critical Part of the Cure 50

Daniel Schwanen (IRPP)
Minding the Brain Drain 55

Ross Finnie
Rebuttal: Clarifications, Responses
and Closing Remarks 58

The Brain Drain: Myth and Reality

What It Is and
What Should
be Done

Editor's Note

The extent and causes of the brain drain, the net annual loss of talented Canadian individuals to the United States, have been hotly debated since the mid-1990s. This study by Ross Finnie and the five comments that accompany it update our knowledge of the question in three ways.

First, Finnie draws a clear and concise picture of the phenomenon, in a way that provides a solid basis for discussion. Second, he interprets the data with a view to assisting policy-makers in addressing the problem. He rejects generalized tax cuts as too costly insofar as the goal of fixing the brain drain is concerned, and instead recommends more specific policy solutions. These include a reversal of past spending restraint in publicly funded sectors affected by the brain drain, along with efficiency-enhancing reforms, and measures that would make it easier to retain key personnel and risk-takers in both the public and private sectors.

Third, the discussion that follows the main paper by Finnie provides us with a useful analytical platform from which to rejoin the debate in the years ahead, when new data become available. It brings to light not only sharp differences of perspectives on what is to be done, but also subtle yet important differences of emphasis, for example concerning whether more funding for public services will necessarily improve the quality of these services. All five discussants agree that quality of life in Canada for highly talented individuals is a key factor in retaining them. All agree that retaining them is, in term, an important factor in improving Canada's publicly funded services and the dynamism of its private sector. But they certainly differ in emphasis as to the role that different policy measures can play in improving Canada's performance on that score.

Peter Kuhn and Dr. Peter Barrett have practical, front-line expertise with respect to the brain drain. Significantly, they both put a great emphasis on the need for Canada to compete on quality of life and working conditions — not necessarily synonymous with increased government spending — in order to retain more of its top talent. John Helliwell warns us that this cannot properly be achieved by a wholesale adoption of the US tax and public spending structure, without endangering aspects of life in Canada which recent research suggest might be key to our sense of well-being. David Stewart-Patterson and Daniel Schwanen are more critical of Finnie's approach, suggesting that his analysis should be placed in the context of the overall lack of dynamism of Canada's economy. On that score, tax reform and greater reliance on market-based incentives may play more prominent roles — and restored tax-financed spending a less clear-cut role — than Finnie allots them in his recommendations.

It is to Ross Finnie's credit that he wholeheartedly supported the publication of these different views on his article and on the brain drain question in general, in addition to providing the intellectual stimulus for them with his paper. I believe that the interplay of different perspectives in this publication will enhance the quality of the discussion in Canada on the need and the means to retain this country's top talent.

The Brain Drain: Myth and Reality – What It Is and What Should be Done

Ross Finnie

Introduction

“...I’d like to hear a responsible discussion of whether we really do have a brain drain from this country. And whether the ‘push’ of high taxes is as important as the ‘pull’ of more opportunities elsewhere. And whether there are serious proposals about changing both the push and pull without changing the nature of Canada.”¹

Is the brain drain a crucial issue or sensationalized exaggeration? To the degree it is important, what are the policy options? In particular, what measures could be taken that would not change the basic nature of the country? Specifically, is cutting taxes a reasonable policy suggestion well-suited to the problem or a malfitting strategy propounded by those who want less government to further that political agenda?

The brain drain debate thus rages – marked by confusion and frustration, largely because there has been relatively little hard data available, and because that which exists has often been twisted into very different forms by those with competing policy agendas.² In short, the issue has been characterized by a good deal of heat and rather little light.

This paper has two main goals. The first is to pull together and summarize the available evidence regarding the size and nature of the outflows, thus dispelling some popular myths while establishing an empirical basis from which the issue can be usefully addressed. The data will show that the brain drain is in fact not very significant in terms of the total numbers involved, but that there is reason for concern regarding certain specific types of individuals, including doctors (particularly specialists), nurses and other health-care workers, university professors, cutting-edge R&D and high-tech workers, and high income – and highly talented – individuals in general.

The second goal is to address some of the major related policy issues. The first of these is the often mentioned general cuts in personal income taxes. Combining the evidence on departures with simulations of the effects of various tax cuts on these flows and government revenues demonstrates that the declines in public spending that would necessarily result from a tax-cut strategy would greatly dwarf the resulting brain drain effects themselves and that the tax-dollar costs “per brain” would be very high. Therefore, while there may or may not be good reasons to lower personal income taxes, that question should be addressed on its own terms, with the associated brain drain effects considered almost incidental to the larger direct effects of such a policy. In short, tax cuts would comprise a very blunt and inefficient instrument for dealing with the brain drain.

Three general policy principles are then established. First, given that the brain drain problem is mostly about a relatively small number of specific types of individuals leaving the country (doctors, R&D workers, etc.), initiatives should be targeted on those particular groups, thus minimizing the “spillover” effects of the actions taken.

Second, policy measures should begin by examining the general problems in the identified brain

drain sectors that should be addressed on their own account, with such actions very likely having salutary effects on the outflows as well. For example, doctors and nurses left in large numbers during a period when significant cutbacks in the health system made practicing medicine in Canada a much less attractive proposition and reduced the quality of health care Canadians were receiving. If these trends were reversed, the quality of health care should be restored in the manner that Canadians seem to want *and* the brain drain attenuated. In this sense, the brain drain is not just a problem unto itself, but a warning light that can indicate areas where we should be taking action for more general reasons, while doing so should help staunch the unwanted outflows — a “virtuous coincidence” of policy outcomes.

The third policy principle is to go beyond the general sectoral-wide measures just described to focus on the specific workers — doctors, nurses, professors, R&D and high-tech workers etc., and especially the “best and brightest” among them whose losses are the most costly for the nation. Such measures, necessitated to a significant degree by the strong demand for these workers at the international level, could range from wage increases and improved working conditions in sectors where governments have such direct leverage; through fostering and supporting excellence by supporting research innovation, and other creative and dynamic activities; to specific tax changes that would make remaining in the country more financially worthwhile for certain types of highly “drainable” workers.

With these general policy principles established, a range of specific proposals is then suggested. Implementing these particular measures should diminish the drain brain, while illustrating the sorts of initiatives that could be applied more generally. Taken together, the suggested actions outline an efficient and effective approach for dealing with the brain drain problem as it

exists in Canada today which would *not* change the basic nature of the country — and would indeed *strengthen* it as various underlying problems signalled by the brain drain were attended to.

As a whole, this paper should advance the brain drain debate in several ways: by putting it on a useful empirical footing, the starting point for any useful policy discussion; by placing the general personal income tax cut suggestion in a better light and thus perhaps taking it off the list of policy choices; by providing some general principles for effective and efficient policy undertakings; and by suggesting a range of specific measures for some of the most important brain drain groups and thus pointing the way to other policy actions. This paper is certainly not the last word on the brain drain issue, but it is hoped that it will at least further our understanding of what the terms of the debate are and what might be done.

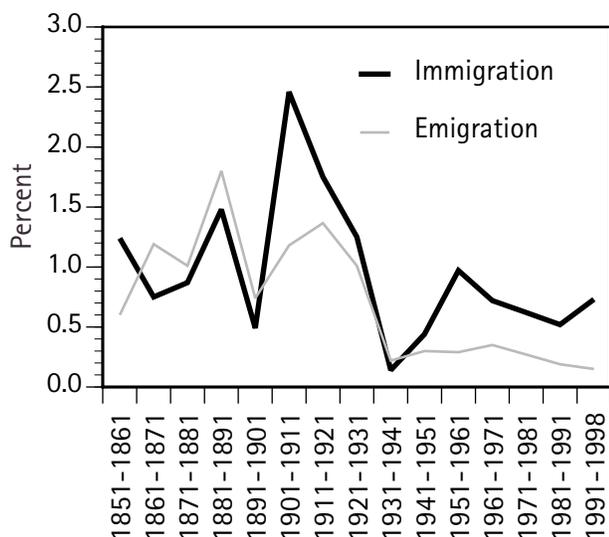
The Brain Drain: An Empirical Perspective³

Much of the debate about the economic importance of the brain drain has centred on the magnitude of the overall outflow of workers to the U.S. The failure to put the US flows into the larger international perspective, to differentiate the US flows into their component parts and to understand the quality of the workers lost has significantly limited our understanding of these movements and the appropriateness of any actions that might be taken to reduce them. The aim of this section of the paper is to provide the needed empirical perspective.

Outflows to all destinations

We begin with a historical perspective. The first graph, based on historical census data, shows that Canada has enjoyed a net inflow of permanent migrants for a very long time and that this pattern

Graph 1
Annualized Permanent Immigration to and Emigration from Canada as a Percentage of the Population, 1851-1998



Source: Census Data (see Statistics Canada [2000])

continues into the present. Furthermore, judged in relative terms, levels of permanent out-migration are currently near an all-time low.

As for more recent trends, Statistics Canada has employed three different data sources to provide estimates of the size of the total outflows: personal income tax data, the Census Reverse Record Check and the US Current Population Survey (see box 1). Probably the most reliable of these are the tax data, derived from the records of those moving from Canada using the address provided on individuals' tax files. These indicate that the number of tax filers leaving Canada to all destinations has increased steadily in recent years, from about 15,360 in 1991 to 28,870 in 1997, with an average of about 21,700 per year over this period (graph 2). Estimates from the two other sources generate estimates of a similar magnitude.⁴

There are a number of reasons for this increasing number of leavers. Most importantly, labour markets, especially those for the most highly skilled, have become increasingly global, driven

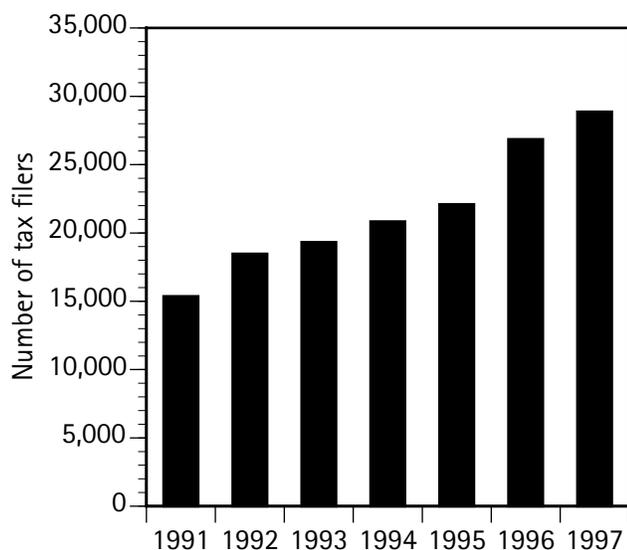
Box 1 Data Sources on Emigration

Reverse Record Check (RRC): The RRC is the means by which Statistics Canada estimates coverage in the Canadian Census of Population. A by-product of the RRC is an estimate, for the five year inter-censal period, of the number of people who were living in Canada at the time of the 1991 census or who entered Canada between 1991 and 1996 who were then residing in the United States at the time of the 1996 census. Permanent movers in the RRC data are defined as people who, at the time of the RRC, had left Canada with no intention of returning as well as those who had resided outside Canada for at least two years but whose intentions about returning were unknown. Temporary movers are people who, at the time of the RRC, had resided outside of Canada for at least six months but who expressed their intention of returning, or who had resided outside Canada for no more than two years if their intentions were unknown.

Canadian Personal Taxation Data: All residents receiving income from Canadian sources are required to file a Canadian tax return, including people leaving Canada during a given tax year. Upper and lower bounds of out-migration to the United States can be derived by geo-coding the address provided by such tax filers. The reason these data can be used only to calculate upper and lower bounds on the outflow of individuals to the U.S. is that roughly 1/3 of these filers file from a Canadian address; the bounds result from making limiting assumptions about the destination of such filers. The taxation data provide no information on the permanency of these moves.

The Current Population Survey (CPS): The CPS is a monthly survey of US labour market conditions. Since 1994, a supplementary survey has been conducted in March to profile the characteristics of foreign-born people residing in the United States. The survey thus provides an estimate of the number of Canadian-born individuals who entered the United States during the 1990s and were still living there each year from 1994 to 1999. The CPS includes people whose usual place of residence for a period of six months or longer is the United States and as such does not include people in the U.S. for shorter durations. Nor do the CPS data pick up individuals who were born elsewhere who came to Canada and subsequently left the country to live in the U.S.

Graph 2
The Magnitude of Emigration to All Destinations – Tax Filers Who Ceased to Reside in Canada



Source: Revenue Canada tax files, Small Area and Administrative Data Division, Statistics Canada.

by a similar expansion of the markets for goods and services and the companies rendering these, and in many cases the relaxing of laws regarding the cross-border movements of workers. As a result, both inflows and outflows have increased, and not just for Canada but around the world. So while it is important to understand the extent, direction and quality of these flows, the recent increases at this broad level are probably to be expected and not necessarily cause for alarm.⁵

The magnitude of the flows to the United States

Much of the controversy surrounding the brain drain has focused on the flow of skilled workers to the United States, and these movements have indeed increased in recent years. This is not very surprising for a number of reasons.

The first is the increasing integration of the two economies. Over the past decade and a half Canada has become increasingly dependent on international trade in general, and exchanges

with the U.S. in particular. Exports now represent 46 percent of GDP and imports 41 percent, and the U.S. accounts for 87 percent of the former and 64 percent of the latter.⁶ An increase in the bilateral exchange of workers would be the natural consequence of this increased economic contact between the two nations.

Second, the US economy experienced an unprecedented period of economic expansion through the 1990s, one that boosted salaries, especially for those at higher earnings levels, and pushed unemployment rates in many occupations to historic lows in a labour-hungry environment. Consequently, US employers turned elsewhere to meet their needs. Canada offers a nearby pool of highly educated and experienced workers who are easily able to step into US jobs and find themselves at home in that country, making it an attractive source to fill the labour gaps, especially at the higher skill levels where the Canada-US wage gap tends to be greatest.⁷

Third, NAFTA has greatly reduced the administrative barriers to the bilateral exchange of skilled workers between Canada and the US, leading to an increase in the level and duration of both temporary (see box 2) and permanent migration of skilled workers between the two countries.

The same three data sources used to estimate the size of the total outflows reported above (RRC, CPS and tax) have also been used to estimate temporary and permanent migration to the U.S. These sources suggest that annual average emigration to the U.S. in the 1990s was in the 22,000-35,000 range, thus representing about 0.1 percent of the Canadian population. (This estimate includes individuals of all ages, including retired persons, children and other non-working individuals, whereas the total outflows reported above were for tax filers/workers only.) However, like the flows to all destinations, these rates are low by historical standards.⁸

The Reverse Record Check data provide an estimate of total out-migration to the U.S. at the high

Box 2

Temporary Visas: All Bets Are Off

Visa data on "temporary" workers, including those entering under special arrangements stemming from NAFTA are available from the US Immigration and Naturalization Service and have been used to estimate the level and trend of temporary migrants to the U.S.⁹ These analyses seem to indicate that a significant number of workers have been leaving Canada to work in the U.S. on a "temporary" but perhaps prolonged basis, with a certain number of these individuals assumed to be converting to permanent residents in time. The data also seem to show a sharp increase in the late 1990s. These results have, not surprisingly, been a source of concern regarding levels and trends in emigration and the ability of the more conventional data sources to fully capture recent developments.

These empirical patterns cannot, however, be confirmed by other data, and their general significance is very much open to question. In some cases, for example, these temporary visa figures include very short-term stays, as little as a few weeks, which could in no real sense be considered as any sort of "emigration." Furthermore, the lengths of stay observed in the data are often overstated because many of those leaving the U.S. to return to their countries of origin, Canadians in particular, do not turn in their visas at time of departure.

As for the number of visas, individuals in the U.S. on temporary visas who leave that country for any period of time to go to any other country except Canada or Mexico are issued new visas upon their re-entry, as are those who go to one of those two countries for more than thirty days, thus resulting in multiple issues and an inflated number of entrants.

Similarly, for some types of visa, renewals are uniformly treated as new issues and are therefore included in the numbers, thus biasing them further upwards. Furthermore, apparently most individuals for whom simple extensions are available choose instead to obtain new visas because the

procedures are easier. With most visas good for one year, a new entry will be registered on an annual basis for each individual. However, a six-month category—resulting in two registered entries per year corresponding to the standard renewal procedures—has been increasingly used of late, especially for nurses, who comprise a substantial share of these entrants, thus driving the data further askew.

The number of temporary visas issued also appears to have been affected by changes in administrative policy, with the post-1997 increases upon which many analysts have concentrated, in particular, appearing to stem from efforts by US officials to reduce the number of workers without valid documentation in the U.S.

It is, furthermore, not possible to convert the most common type of temporary visa ("TN" for Trade-NAFTA) to a permanent residency, thus casting doubt on any assumptions about the longer-term nature of these movements.

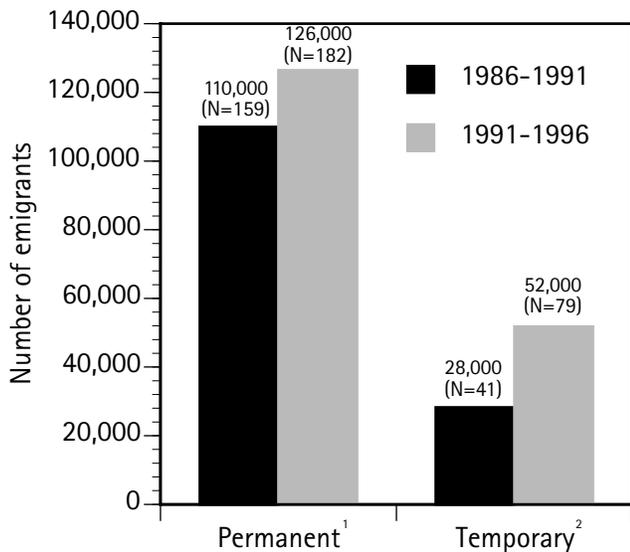
Finally, to the degree these temporary movements are indeed just that, they would capture the useful accumulation of work experience and the acquisition of various job skills that will increase their productivity when they return to Canada, thus representing a sort of "brain improvement" (little different than individuals going abroad to study and then returning home) rather than a loss in any long-run sense.

In summary, it will be important to watch these temporary visa data to better ascertain how many individuals are actually involved, to better calculate the duration of the departures, to learn more about the kind of movements they represent, and to assess the degree to which they matriculate into permanent displacements. But they do not currently appear to comprise a very reliable indicator of the true extent or nature of this type of emigration. Any interpretation of these flows should therefore be made with a great deal of caution.¹⁰

end of this range. More specifically, these data suggest that between 1991 and 1996 178,000 people left Canada to go to the U.S., and past experiences indicate that 126,000 of these would be expected to remain permanently in the United States and 52,000 to return to Canada (graph 3).¹¹ Emigration to the U.S. was, furthermore, 30 percent higher in

this period than from 1986 to 1991 (as estimated from the previous RRCs), permanent migration increasing by 15 percent and temporary migration doubling. Alternatively, the tax filer data permit estimates of the upper and lower bounds of the number of Canadian tax filers who moved to the United States: from the 8,000 to 12,000 range in

Graph 3
Emigration to the United States (All Individuals) 1986-1991 and 1991-1996, Census Data



Notes:

N = sample size

1. Permanent emigrants are persons who, at the time of the census, had left Canada with no intention of returning, and those who had resided outside Canada for at least two years but whose intentions about returning were unknown.

2. Temporary emigrants are persons who, at the time of the census, had resided outside Canada for at least six months with the intention of returning, or had resided outside Canada for no more than two years if their intentions were unknown.

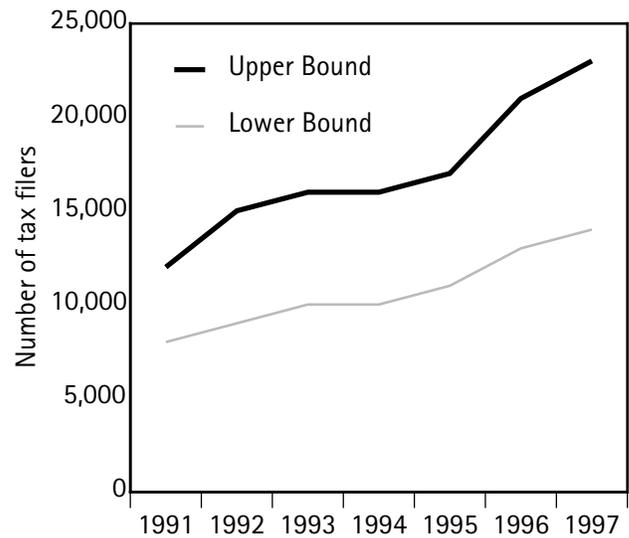
Source: Statistics Canada, Reverse Record Check Program, 1991 and 1996 censuses.

1991 to the 14,000 to 23,000 range by 1997 (see graph 4). Adjusting for family members who accompany these tax filers renders these figures more or less consistent with those from the Reverse Record check data. The sample size upon which the CPS estimates are based are too small to provide very reliable estimates of the levels or trends in the flow of workers, but are generally consistent with the other data.

To put these numbers back into an international perspective, the Reverse Record Check data also reveal that between the 1986-91 and 1991-96 periods, the share of all Canadian emigrants to the United States remained approximately constant,

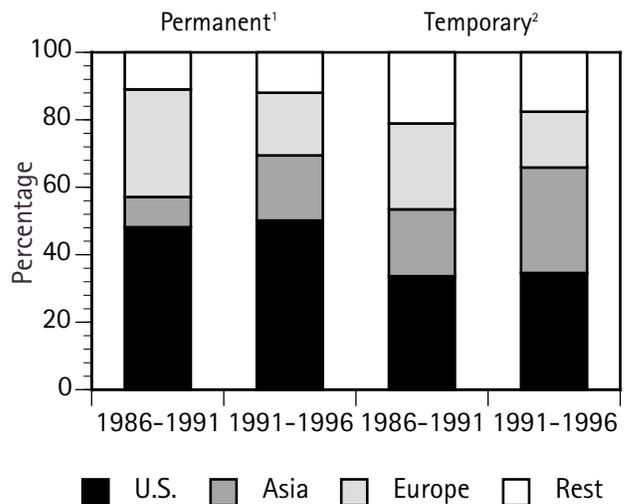
R O S S F I N N I E

Graph 4
Emigration to the United States – Estimated from Tax Filer Data



Source: Revenue Canada tax files, Small Area and Administrative Data Division, Statistics Canada.

Graph 5
Destinations of Emigrants Who Left Canada, 1986-1991 and 1991-1996, Census Data

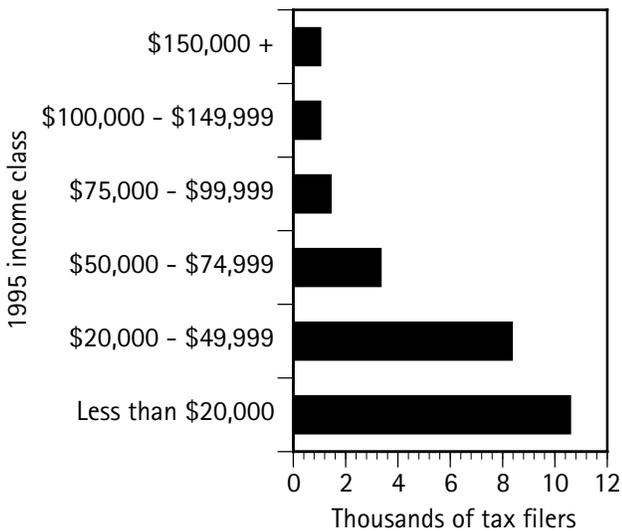


1. Permanent emigrants are persons who, at the time of the census, had left Canada with no intention of returning, and those who had resided outside Canada for at least two years but whose intentions about returning were unknown.

2. Temporary emigrants are persons who, at the time of the census, had resided outside Canada for at least six months with the intention of returning, or had resided outside Canada for no more than two years if their intentions were unknown.

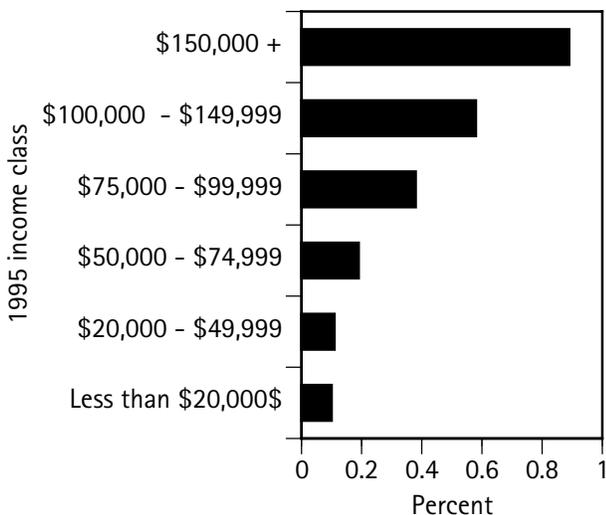
Source: Statistics Canada, Reverse Record Check Program, 1991 and 1996 censuses.

Graph 6
Income Levels of Tax Filers Who Ceased to Reside in Canada (All Destinations), 1996



Source: Revenue Canada tax files, Small Area and Administrative Data Division, Statistics Canada.

Graph 7
Percentage of Tax Filers Who Ceased to Reside in Canada by Income Level, 1996



Source: Revenue Canada tax files, Small Area and Administrative Data Division, Statistics Canada.

at about half of all permanent emigrants and a third of all temporary emigrants (graph 5). (There was a noticeable shift from Europe to Asia over this period, reflecting a shift in the source of immigrants to Canada in recent years.) Moving to

the U.S. has not, therefore, gained any special attraction over these recent periods, and challenges the notion that Canada necessarily needs to become more like the U.S. to reduce the recently increased flows.

The characteristics of the flows to the U.S.

We now move from the magnitude of the outflows to their nature, focusing on who is leaving in terms of their level and types of human capital, specific job skills and other labour market attributes. Whereas we have seen that the overall size of the flows is not great, here we see they are significant, indeed worrisome, for certain types of workers whose talents will surely be missed.

The income levels of emigrants to the U.S. and elsewhere

First, the tax data indicate that the overwhelming majority of taxpayers leaving the country in 1996 for all countries, not just the U.S. (those data are not available), earned less than \$50,000 in the last full year prior to their departure (graph 6). But when the data are viewed differently, the country does indeed appear to be losing a significant fraction of its labour market elite, at least as judged by individuals' incomes, with 0.89 percent of all taxpayers earning \$150,000 or more in the last full tax year preceding their leaving the country, which contrasts with the 0.12 percent departure rate for all tax filers taken together (graph 7). Emigration rates were also well above average for those earning \$75,000-\$99,999 and \$100,000-\$149,999. Furthermore, some of the lower income individuals who left might be recent graduates or others who are just getting started in their careers and whose losses are, therefore, more significant than suggested by their recent income levels.

On the other hand, the higher income categories comprise only a few thousand individuals in total and some of them will return one day. These outflows are, furthermore, offset by individuals of a similar type moving into the country,

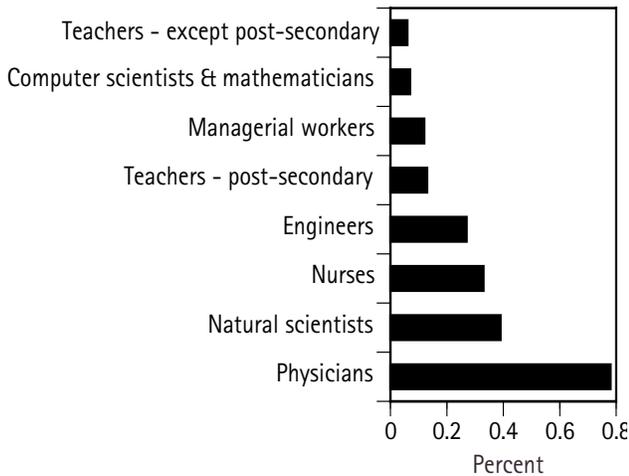
The Brain Drain: Myth and Reality - What It Is and What Should Be Done

and although there are no good data on these counter-movements, they might be substantial, especially in a context where highly skilled workers in particular have become more mobile. This is no more than speculation, however, and the results do point to some potentially worrying elements regarding the characteristics of departing workers. We now turn to other data to assess their occupational and educational characteristics.

Occupational and industrial characteristics of migrants to the U.S.

Estimates based on data provided by the US Immigration and Naturalization Service and the 1996 census suggest that Canada has indeed been suffering a net loss of workers in several key knowledge occupations (graph 8). The estimates indicate that, for example, almost one percent of the country's physicians left Canada for the U.S. in 1996-97 alone (which casts some light on the income patterns just noted as well). Natural scientists, nurses, engineers, post-secondary teach-

Graph 8
Annual Emigration to the United States as a Percentage of the Canadian Work Force in Selected Knowledge-Based Occupations, 1996-1997¹



Notes: 1996 to 1997 annual average for emigration; 1996 data for work force by occupation.

Sources: U.S. Immigration and Naturalization Service and Statistics Canada, 1996 census.

ers (i.e., professors) and managerial workers also left in substantial proportions.

Putting these data together with information available from Citizenship and Immigration Canada permits the calculation of net flows by occupation between the two countries. The most startling figures are the huge net losses for physicians and nurses, with departures outnumbering arrivals by ratios of 18.7 and 15.3 to one, respectively (graph 9). Substantial net losses are also seen for the other high-emigration occupations noted above.¹²

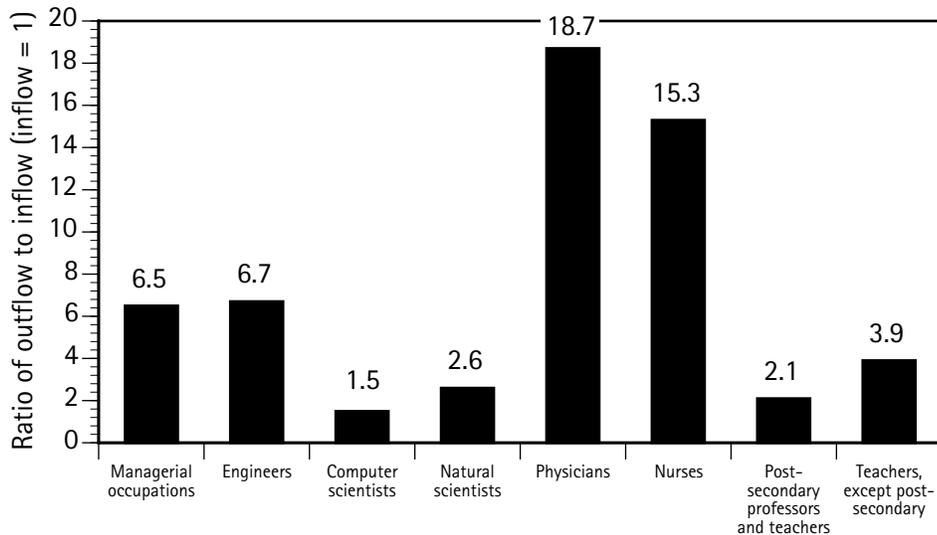
The picture is much the same when viewed in terms of industrial sector. The tax filer data show that in 1996 ten industries accounted for over one-fifth of the close to 27,000 movers, including a cluster of those in the high technology sector (table 1). The other losses were spread quite uniformly over a large number of other industries.

Educational characteristics of US-bound emigrants

US CPS data can be used to examine the educational credentials of Canadian migrants, both temporary and permanent, to that country. They show that recent migrants to the United States possess very high levels of education relative to the average levels of both the Canadian-born population and recent immigrants to Canada. Among migrants to the U.S. aged 16 and over for the period 1994-1999, for example, 49 percent had a university degree. In comparison, data from the 1996 census indicate that only 12 percent of the Canadian-born population and 21 percent of recent immigrants to Canada had this level of education.

Finally, it appears the economy is losing a significant fraction of its most highly educated recent graduates. Despite losing only 1.5 percent of all post-secondary graduates from the class of 1995, fully 12 percent of the doctoral graduates were living in the U.S. three years later, in 1998. Furthermore, the overwhelming majority stated they had left for employment-related reasons and

Graph 9
Ratio of Outflow to Inflow from Permanent Migration Between
Canada and the United States, Managerial and Selected Professional
Occupations, 1990-1997



Sources: U.S. Immigration and Naturalization Service and Citizenship and Immigration Canada, Landed Immigrant Data System.

a disproportionately high percentage (44 percent) ranked themselves in the top 10 percent of their graduating class. Migrants were also somewhat more likely to have received scholarships and other academic awards.¹³ On the other hand, these figures include foreign-born individuals who received their degrees in Canada and, again, do not take into account that some of these individuals will eventually return with useful work experience and important job skills. Neither do we know if these recent patterns represent any sort of departure from historical patterns.¹⁴

Summary of the evidence

The most important points regarding the empirical evidence on the brain drain may be summarized as follows:

- The total number of Canadians leaving the country, as a percentage of the overall population, is quite small, is currently quite low by historical standards and is part of a long-run net inflow of migrants.

- Flows to the U.S. are also low by historical standards but rose through the 1990s.
- These recent increases are, however, not surprising, as labour mobility has increased generally at the global level, especially for certain high skill types. In addition, the increased integration of the American and Canadian economies, partly due to FTA and NAFTA, has brought the two economies closer together, thus making such exchanges more natural and in some ways easier to accomplish. Finally, the US economy has been through an exceptionally strong growth period and has been attracting labour from around the world, especially highly skilled individuals drawn to the exceptional expansion at the high end of the earnings distribution for certain occupations; the flows from Canada are to some degree simply part of this larger pattern.

Table 1
Tax Filers Leaving¹ Canada for All
Destinations, by Industry of Employer, for
the Ten Industries with the Largest Loss
of Employees, 1996

Industry (1980 SIC code)	Number of Movers in 1996
Hospitals	1,060
University education	910
Elementary and secondary education	690
Architectural, engineering and other scientific and technical services	660
Computer and related services	580
Banks, trust companies and credit unions	520
Food services	440
Federal government services ²	420
Communication and other electronic equipment	360
Other business services	290
All remaining industries	10,640

Notes: Data based on Revenue Canada income tax files.

1. These data exclude movers without earned income and those self-employed. The industry is that of the movers' principal employer (in terms of 1996 earnings).

2. Except Defence Services.

Source: Statistics Canada, Small Area and Administrative Data Division.

- Most of those leaving are widely distributed across the spectrum of income distribution and come from a great variety of occupations and industries. However, emigration rates are greater at higher income levels, and the movements of certain groups of “knowledge” workers represent substantial shares of the domestic stock and are far greater than the offsetting inflows. These include doctors, nurses, teachers, engineers, scientists, high-tech workers and higher income individuals in general. These losses are undoubtedly being keenly felt and in most cases represent the forfeiture of large social investments in the education of these departing

individuals. To the degree the brain drain is a problem, this is presumably where our concerns should be focused.

Brain Drain Policy

Some general policy principles

The evidence presented above has shown that the brain drain is not particularly large in terms of the total numbers involved, but that certain areas of concern exist, especially in terms of losses to the United States: health sector workers, especially physicians and nurses, university professors, cutting edge R&D and high-tech workers, and very high income individuals in general.

One of the general principles of economic policy is that the specificity or breadth of the measures adopted should be commensurate with the problem faced so that it is addressed as efficiently as possible with minimal collateral or spillover effects. Since the issue here is that certain relatively small, identifiable groups of individuals have been leaving the country, our inclination should be to direct initiatives at these particular individuals. *Policies to stem the brain drain should therefore be targeted on the particular groups of workers for whom outflows are a significant problem.*

At the same time, it seems that many of the worrisome outflows involve individuals in occupational and industrial sectors characterized by broad-based problems of a serious nature *apart* from any brain drain. Doctors, nurses and others in the health-care sector, for example, have been leaving at a time when a combination of budget cuts and increased demands on the system have contributed to a deterioration in their working conditions and frustrated their efforts to practice the kind of medicine for which they were trained, while citizens have experienced parallel declines in the

quality of the health care received. University professors have been going abroad as their teaching environments and research opportunities at home have deteriorated, while students' learning conditions and the nation's research capacity have suffered. Those in R&D activities have been departing as the country has been trying to address a general lack of scientific, technical and innovational dynamism that has been inhibiting its productivity, competitiveness and wealth-creation. The high-tech departures have occurred as the Canadian industry has been struggling to succeed at the international level in what is an extremely competitive sector. The brain drain, is therefore, to a significant degree a symptom of deeper problems that need to be addressed for their own sake, even as any related improvements should indeed attenuate the loss of skilled workers in these sectors. *Policies should, therefore, begin by addressing the broad underlying problems that exist in the sectors of concern.*

Finally, within the problem sectors, more specific measures should focus on the workers in question (doctors, nurses, professors, R&D and high-tech workers etc.) while remembering that the brain drain problem is largely an issue of losing our "best and brightest." These individuals face the most attractive outside opportunities precisely because they have the specific skills and/or exceptional abilities in demand in some very competitive international labour markets. *Initiatives should, therefore, include measures aimed at the specific workers in question, focusing on the most talented and internationally mobile among them.*

In summary, brain drain policies should be: 1) *targeted*, in terms of being directed at particular groups of workers for whom the brain drain is an identified problem and which together comprise a good deal of the nation's brain drain problem; 2) *sectoral*, in that they should address the broad problems that exist in the relevant occupational and industrial sectors, problems which should be addressed on their own account but which should

also reduce the related losses; and 3) *worker-specific*, in the sense of including measures directed at the specific individuals in question, focusing on those who face the best outside opportunities and who would be missed the most.

The rest of this section follows these general principles as it provides concrete suggestions for dealing with the brain drain in some of the important groups that have been identified, and illustrates the sorts of initiatives that could be employed elsewhere.

The general income tax cut suggestion: a non-starter

The bluntness of the tool and its associated costs

First, let us deal with the general income tax-cut solution. It is commonly suggested that an important means of reducing the brain drain would be to reduce personal income taxes in a general way, especially at higher income levels. The logic goes something like this: 1) individuals are leaving to go to the U.S. at least partly to receive higher after-tax earnings; 2) although gross pre-tax salaries play an important role in this dynamic, Canada's higher personal income tax rates leave individuals with less after-tax income for a given amount earned; 3) therefore, income taxes should be cut to increase Canadians' post-tax incomes and reduce the brain drain.

Following from the preceding discussion, however, it is clear that reducing income taxes for all individuals, or even just those at the high end, to try to prevent a very small and very specific group of individuals from leaving the country would represent a very blunt policy instrument. The problem is that such general tax cuts would apply to all individuals even though — as the exit numbers shown above indicate — it is the behaviour of only the very small proportion of the population that leaves in a given year that we would like to influence. The cost of any such general tax-cut policy would, of course, be the resulting decline in gov-

ernment revenues and public spending, presumably including the country's major social programs. In short, general income tax cuts would represent an extremely inefficient means of combating the brain drain, especially when other policy instruments are available.

Furthermore, it is not clear to what degree cutting taxes would actually reduce emigration. Individuals move for many job- and earnings-related reasons, including the higher gross salaries that typically drive the greatest part of the existing post-tax wage differentials, the availability of more challenging job opportunities, other work-related considerations and personal factors. Tax cuts would therefore likely have a relatively small overall effect in the face of all these reasons.¹⁵

The effects of the reductions in public spending necessitated by a tax-cut policy would, in addition, presumably have various emigration-*increasing* effects through their impact on the quality of life available in this country, which is a countervailing appeal for many who currently choose *not* to leave. These certainly include the individual-level benefits upon which some analysts focus and make comparisons in terms of what might be available on a private basis in the U.S. (health care, post-secondary education, etc.)¹⁶ But they also include the various public goods which *cannot* be purchased at the personal or even local community level, such as the ability to safely walk the streets almost anywhere at any time, the advantages of better public health, the full "insurance" aspect of a more generous safety net and other such advantages. Any significant cuts in social spending would, furthermore diminish the deep satisfaction many Canadians feel by being part of a society where equality of opportunity, compassion for the disadvantaged, cultural identity and other goals related to common purpose and social justice are given a more central place. In short, if Canada simply became more like the U.S. (due to a set of deep tax cuts), those who value this country precisely for the ways it differs

from its southern neighbour would not find it as attractive to remain here, and some of these individuals would leave.

A final consideration of the tax-cut strategy is that Canada's public social spending also has a productivity element. The nation's public education and health systems, more generous welfare plans and other tax-financed programs not only have important social insurance and redistributive functions and in some cases, notably health care, important efficiency properties in terms of delivering a given level of services to the general population, but also directly contribute to a more engaged and productive citizenry, as evidenced by our more favourable records regarding infant mortality, health, literacy, incarceration and other social indicators. Any such efficiency properties that would be lost if a lower-tax/lower-benefits system were adopted should be taken into account when the productivity benefits associated with the hoped-for diminished brain drain stemming from a low-tax/low-benefits solution are considered.¹⁷

The numbers: tax cut simulations

To place the income tax proposals in a better light, simulations of adjustments to the Canadian income tax system have been performed. While these are not meant to be exhaustive with respect to the type or magnitude of the tax change ideas that have been floated, they at least give a sense of what such initiatives might mean in terms of the number of individuals affected, the impact on their disposable incomes and the effect on total government revenues.

Five illustrative scenarios are considered: the first three are based on increasing the income level at which the top federal tax rate in Canada begins, a common suggestion in the brain drain debate; the last two represent more wholesale shifts toward the American tax system. More specifically, we look at: 1) moving the point at which the top Canadian rate of 29 percent begins

to where the American rate increases from 28 percent to 31 percent (to CDN \$76,015 from CDN \$60,009); 2) moving the point at which the top Canadian rate begins to where the American rate increases from 31 percent to 36 percent (to \$170,305); 3) moving the point at which the top Canadian rate begins to where the top American rate of 39.6 percent begins (to \$367,957); 4) replacing the three-tiered Canadian system of rates with the full six-tiered American system, adjusting for the nominal exchange rate; 5) adopting the full federal US system at the same dollar levels, i.e., not adjusting for exchange rates.¹⁸

The results, shown in Table 2, generally show that the smaller tax changes would have little effect on individuals' average after-tax incomes with a substantial percentage of the population

affected in a minor way, and that the losses in government revenues would be commensurately moderate but certainly not trivial when viewed either in aggregate terms or, especially, on a "per brain" basis. The larger changes would of course generate greater effects throughout.

More specifically, the first scenario, a smallish increase in the income level at which Canada's top personal income tax rate cuts in, generates a relatively small loss of \$697 million in government tax revenues (federal and provincial combined), but also has little effect on individuals' incomes, increasing average disposable income a mere \$651 for those in the top income category (\$150,000 or more), and less for those below that, hardly the sorts of differences that would change many individuals' ideas about leaving the country.

Table 2
Tax Change Simulation

Outcome	Scenario				
	1	2	3	4	5
Government Revenue Loss (millions)	697	1,724	2,185	10,983	2,561
Average Change in Disposable Income (per family) by Family Income Level					
\$75,000 - \$100,000	117	143	143	1,923	565
\$100,000 - \$150,000	294	542	543	2,009	157
\$150,000 +	651	2,780	4,060	4,587	7,833
All Families	51	127	161	862	241
Percentage of Census Families Affected					
\$75,000 - \$100,00	26.2	26.2	26.2	99.9	96.6
\$100,000 - \$150,000	56.7	56.7	56.7	99	87.1
\$150,000 +	93.4	93.5	93.5	97.8	96.9
All Families	9.8	9.8	9.8	74.9	71.3
Number of Census Families Affected (in thousands)					
\$75,000 - \$100,000	354	354	354	1,346	1,303
\$100,000 - \$150,000	512	512	512	894	787
\$150,000 +	336	336	336	352	349
All Families	1,336	1,336	1,336	10,163	9,667

Skipping the second scenario and moving straight to the third, we see a total loss in government revenues of a more substantial \$2.2 billion per year. Seen against total government spending, the amount is not particularly large but represents, for example, about half of what the provinces received from the federal government in their hard-won September 2000 health-care accord. Disposable incomes are also up more, an average of \$4,060 for families with incomes of \$150,000 or more. Such differences could be important for those families at that precise income level but would be less significant for the higher income families in this open-ended income class. Perhaps more telling is that the changes in disposable income would average a much smaller \$543 for those with incomes from \$100,000 to \$150,000 and just \$143 for those from \$75,000 to \$100,000. Most would deem such differences negligible.

In the absence of much hard empirical evidence on the effects of changes in taxes or post-tax incomes on out-migration (see above), one may only speculate regarding the extent to which such changes would affect individuals' decisions to stay or leave. Nevertheless, suppose we give a generous benefit of the doubt to the tax-cutting camp and assume that such a change (scenario 3) would cause 5,000 individuals to stay in Canada. (Recall that the empirical section reported that there were only about this number of leavers with incomes over \$75,000 *in total* in 1996, the last year for which such calculations were made.) The annual cost in terms of reduced government revenues would be \$437,000 per person, calculated quite simply as the associated reduction in government funds divided by the number of individuals hypothesized to stay in the country as a result. If we assume a smaller number of circumvented exits, the cost per person obviously rises: retaining 2,500 individuals would drive the cost to almost \$900,000 per person. Other figures are offered just below.¹⁹

Are such individuals really worth such an investment, year after year, in perpetuity? This money could instead go into general public expenditures and improve the quality of life of the Canadians who benefited from such spending. Or, the \$2.2 billion could be spent on alternative anti-emigration initiatives. Such an amount could, for example, fund a large number of university scholarships to encourage entry into the science and technology areas of particular concern; create hundreds of additional research chairs to directly advance the nation's R&D capacity and keep many of our best professors at home; pay for some of the cutting-edge medical equipment whose current absence frustrates our health professionals and causes our quality of health care to suffer; fund other tax measures which are much more targeted on brain drain workers themselves; or provide for other remedial measures. These would almost surely represent better ways of "spending" this money in terms of both enhancing the nation's productivity and stemming the brain drain.

The bluntness of the general tax-cut strategy is also seen in the number of people affected by the changes: in the case of scenario 3, a total of 1.4 million census families, or 9.8 percent of all those in the population, to stop, at very best, 5,000 individuals from leaving. That makes for 267 families affected, and of course a greater number of separate individuals, for every person whose behaviour might, under a generous set of assumptions, be altered.

Turning to the first, and more radical, of the last two tax change scenarios, we see that adopting the entire US tax system while adjusting the tax brackets by the exchange rate would make for large changes in every respect: an \$11 billion decline in government revenues, substantial increases in individuals' disposable incomes, and the great majority of families in the population being affected. If we use Wagner's estimate²⁰ that such a tax change would prevent the departure of about ten

percent of the US-bound emigrant population and assume it would have a similar effect on departures for other destinations, this would keep something like 5,000 individuals at home at a cost of approximately \$2.2 million per non-drained brain.²¹ But here it is even more preposterous to think of such changes as representing migration policies as such, since the “side effects”—the effects on governmental spending and the effects on the tax change on other behaviour would likely be much more important than anything to do with the associated brain drain effects *per se*. The final scenario, adopting the US tax system without adjusting for the value of the dollar, has smaller effects, but is not in fact so different from scenario three, and need not be pursued any further for this reason.

Tax cuts: the tail wagging the dog and recent tax-cut initiatives

It may thus be concluded that general income tax cuts should not play a central role in the brain drain debate because the (net) effects of smaller cuts on the number of persons leaving would not likely be very great, while the “spillover” effects of any larger cuts in terms of reduced government revenues and the associated reductions in public spending and other effects would be so large as to render any resulting brain drain effects relatively puny in comparison. Meanwhile, other policy options are available (see the following sections). In short, there might be good reasons to reduce personal income taxes, but that debate should be engaged on its own terms rather than dragged into the brain drain issue in the tail-wagging-the-dog fashion it has been of late, as in, “We need to reduce our ‘brain draining’ levels of taxation.”

This position is not altered by the substantial general personal income tax cuts announced in the February 2000 budget and the October 2000 update. Consistent with the preceding discussion, there are two main reasons for this. First, while general income tax cuts may (or may not) represent an

appropriate policy move at this time, the associated brain drain effects are likely to be moderate and could thus comprise only a correspondingly small part of the justification for such a policy initiative. And second, while it would be fortuitous if the brain drain were in fact reduced to a substantial degree because of these tax changes, it seems overwhelmingly likely that there will still be significant outflows even after these tax cuts have kicked in completely, thus leaving room for other more targeted initiatives of the type discussed below.

In short, income tax policy, at the general level, should be formulated more or less independently of its brain drain effects; while brain drain problems are best addressed with specific brain drain policy solutions. We now turn to these.

Public-sector-type workers

Health workers: doctors, nurses and others

One group of concern is doctors, specialists in particular.²² As noted earlier, their outflows have been significant in terms of the numbers involved and represent the loss of highly skilled individuals in whom the nation has generally invested a great deal, a medical school education being a very expensive proposition in terms of government funding. Furthermore, their talents are especially missed at a time when the demand for doctors continues to rise while the supply of new doctors is still suffering from the medical school cutbacks implemented in the early 1990s and an increasing number of practitioners is reaching retirement age.

For these reasons, and following the general policy principles set out above, it would appear that brain drain initiatives should indeed include measures targeted on doctors as a group (the first principle), and start by considering initiatives related to the health sector, in which they are employed, as a whole (the second principle). This is perhaps an especially obvious strategy in a con-

text where the large cuts in health spending implemented in most provinces in the early- and mid-90s clearly exacerbated the outflow of doctors from the country. Those cuts contributed to the deterioration of doctors' working conditions and their growing frustrations with their ability to practice medicine in the manner in which they were trained due to the lack of operating room time and back-up support, the dearth of state-of-the-art equipment, the loss of support staff and other shortcomings in the system.²³ A general sustained reinvestment in the health system should, therefore, significantly stem these flows while providing Canadians with important improvements in the health care they receive.

Furthermore — and fundamental to this level of our policy approach — Canadians do indeed seem to favour such reinvestments on their own grounds, thus creating a virtuous coincidence in policy terms: better health care as its own worthwhile goal, this leading to an associated reduction of the brain drain which, in turn, would further augment the former. The exodus of doctors is, in this perspective, not just a problem to be dealt with on its own terms, but also a useful warning as to just how much the health sector has suffered and thus a further signal of the need to address the larger, more fundamental issues in that area.

Such a dynamic represents the basic nature of the second policy principle in a specific context: the brain drain signals larger problems in the relevant sector; the resulting actions (if appropriate) represent worthwhile undertakings on their own; the brain drain is reduced as a result of these general improvements; the sector benefits further from the reduced brain drain.

If, however, such sectoral-wide initiatives did not reduce the outflows to the degree desired, the third (worker-specific) level of the policy strategy would suggest going beyond the health system in general to focus on physicians *per se*, the goal being to make practicing medicine in Canada

more attractive in the context of a strong competing demand for physicians from the U.S. and elsewhere. Raising fee schedules or otherwise improving their terms of employment or working conditions would be one obvious set of measures.²⁴ And again keeping with the principles established above, such initiatives should be sharply focused on the types of doctors who are most likely to leave, those whose losses would have the most deleterious impact, and for whom preventive measures would have the greatest effect in reducing their departures. Specialists, for example, would probably be favoured over family practitioners in this respect. A combination of sector-wide and worker-specific initiatives could thus be implemented to reduce the brain drain of doctors in a desirable and efficient manner.

Another group of health-care workers worth considering is nurses. Significant numbers of them have gone south of the border and these outflows have also been costly to our health-care system (policy principle number one). The sort of sectoral investments aimed at improving the whole health system (principle two) should again obtain positive results both in terms of delivering the improved health care Canadians appear to want as a goal in itself and in reducing the number of nurses leaving the country as their working conditions improve. The impact of such general initiatives would be especially direct if they included re-creating the positions that were eliminated in the lean years and then perhaps expanding on those numbers, thus providing the job opportunities which were so scant for well nigh a decade, forcing nurses abroad.²⁵ If necessary, other more worker-specific measures such as salary increases and other improvements in working conditions and terms of employment could also be initiated (policy principle number three), with particular emphasis, again, on those most in demand (specialists, the most highly skilled, etc.). The policy model has been outlined

in the case of doctors and does not need to be more fully developed here.

The same general approach could be used for other skilled health sector workers: the size and cost of their outflows might make them worth targeting (first principle); their outflows would decline in response to any general reinvestments in the health system which should probably be made for their own sake (principle two); and further worker-specific measures might be appropriate if the sector-wide initiatives did not cut the flows sufficiently (principle three).

This notion of “brain-drain-as-wake-up-call” should, however, not only alert us to the apparent need to reinvest in the Canadian health system and the brain-drainable workers therein, but also to consider the need for more structural reforms in the sector, which is generally not forced in this direction in response to competitive pressures as much as it probably should be. Furthermore, a period of reinvestment would be a good time to institute such reforms. More is said on such matters below.

With this broad set of suggestions set out, it should be noted that there have been some significant developments along these lines of late. Health-care funding, in particular, appears to have turned the corner, having risen significantly in the past few years, and will benefit from an injection of \$21 billion into the system over the next five years, stemming from the federal-provincial agreement reached in the summer of 2000. One could debate where exactly this leaves the system after the previous half-decade or so of cuts and increasing demands on the system, but more resources are generally better than fewer resources for delivering better health care — and for stemming the brain drain. In short, we should see some reduction in the outflows, at least relative to their worst levels, when more recent data become available. Nevertheless, more, and in some cases somewhat different initiatives along the

lines sketched out above are probably needed to stem the drain more fully.

The university sector

Another important case is the university sector, which appears to have been losing a significant number of professors, including some of its best, as well as a sizeable proportion of its recent Ph.D. graduates to the U.S. To some degree this has always been the case and is to be expected since the U.S. has many of the world’s best and richest universities and is thus able to make attractive offers to eminent or rising scholars in terms of salaries, teaching loads and research opportunities. But though the data are relatively scant, there seems to be a general feeling that the situation has worsened in recent years and that the departures are cutting a greater swath through the Canadian academic community than in the past.

If this is the case, we should hardly be surprised. Put bluntly, Canadian post-secondary education is in a state of crisis. Government operating grants have declined, and substantially increased tuition fees have not offset these cuts even as enrolments have risen, putting great pressures on the system. Class sizes have risen; the number and variety of course offerings and degree programs have been reduced; required new buildings have not been built; equipment has increasingly passed out of date and into disrepair; freezes and cuts in salary scales and research grants have been the typical order of the day; there has been very limited hiring of new, vibrant faculty and regular professors have been replaced by sessional lecturers and teaching assistants. In short, these are not particularly happy times at Canadian universities for students or faculty.²⁶

Thus, with striking similarities to the health sector, the twin pressures of significant spending cuts in real terms and rising demands on the system have rendered universities less interesting and rewarding places to work, while US demand

has remained relatively strong, or even increased, especially for those at the top of their fields. So these professionals, like doctors, have been departing in greater numbers for the U.S., and again these have included a disproportionate number of our best.²⁷

The irony is that this deterioration has occurred at a time when there is a growing recognition that university and college graduates are a critical element of the nation's human resources and are fundamental to its ability to compete in the new/knowledge-based/global economy, and that university-based research is similarly more crucial than ever. Thus, again like the health sector, the brain drain from our universities is not only a problem in itself but also a useful warning signal that indicates the extent to which the university sector is facing serious problems well beyond those related to the brain drain and the need to reinvest in the sector, even as such general initiatives would help stem the associated brain drain as well.

We begin, then, by recognizing that university professors are probably a group upon which we should focus some of our brain drain attentions (the first policy principle), and that action should start with addressing the broader problems in the sector, to the extent that such initiatives are worthy on their own account (the second principle). As above, this could quite easily begin with a reversal of the general funding restrictions seen over the last decade or more. Such an undertaking might involve substantial sums of money, but the benefits would also be similarly broad, with the associated reductions in the brain drain, as in the health sector, again comprising a virtuous coincidence of policy outcomes. This alone might get us at least a good part of what we would hope for in terms of reducing the unwanted outflows.

Additional worker-specific measures to further stem the outflows could, however, be targeted on

professors per se, especially the more active and talented ones among them, our "academic stars" (the third policy principle). These latter measures could come in the form of boosting salaries and, probably at least as importantly, improving the research opportunities available, thus making it more rewarding to be a professor in a Canadian university, especially for those at the top echelons of their fields.²⁸

A combination of sectoral and worker-specific measures could, therefore, again be a cost-effective way to drive the brain drain down for one of the specific groups of workers for whom it is currently a problem (see box 3).

There have in fact been some significant developments along these lines over the last few years. For example, some universities have diverted their funds at the internal level to create special "retention" funds to provide salary premiums and research monies for those who face the greatest outside opportunities. Even more interesting, the recently instituted Canada Research Chairs program represents a sizeable new funding commit-

Box 3 A Cost-Effective Strategy

It might be useful to provide a hypothetical estimate of the costs of such a strategy in "per brain" terms and compare this to the income tax simulations provided above. Suppose, for example, 1,000 academics facing outside offers (or potentially so) were given \$50,000 each (higher salaries and additional research funds). Such sums would surely affect the decisions of a good number of these individuals, but let us suppose, perhaps conservatively, that 20 percent (200) of them decided to stay as a result. The program would cost a total of \$50 million, or \$250,000 per brain, around half of the most optimistic calculations given above in terms of a general tax strategy. In addition, to the degree the money improved the quality of teaching or amount of research, there would be direct benefits associated with this spending, thus reducing the net costs further.

ment that over the next few years will initially establish 2000 of what might be thought of as US-like professorships at Canadian institutions and then grow further. Also, there has been a reinvestment in the federal granting research agencies (SSHRC, NSERC, etc.), considerable sums have gone into the Canadian Fund for Innovation for research infrastructure and a system of National Health Institutes for research in the medical sector was just recently introduced.

As with the health system, both the warning represented by the departing scholars and the opportunities flowing from the infusion of new funds may indicate the need for, and the means of, making structural reforms in the post-secondary system so it better meets the country's needs in terms of training minds and providing job skills and generating cutting-edge research. Money should not simply be shovelled into the system without question, but should instead flow to where it would be best spent as part of a general assessment of what is good, what needs to change and what will make the system better.

Brain-drain-as-wake-up-call for further change

In summary, the outflows of certain groups of valued, internationally mobile public-sector workers (such as those in the health-care sector, university teachers and other skilled personnel) could be efficiently addressed with a combination of sector-wide and worker-specific measures – and all without changing the fundamental nature of the country. Indeed, as opposed to a general tax-cut strategy which would surely do that, the measures proposed here should *strengthen* the nation's fabric, fortifying some of the country's central institutions – health care, post-secondary education – rather than contributing to the demise that general tax cuts would inevitably engender.

Money should not, however, simply be poured willy-nilly into the problem sectors or toward the

specific workers in question and we should be especially aware of self-interested persons and representative bodies calling for this sort of thing. These sectors are generally protected from market competition and thus risk becoming inefficient in ways they should and need not. The brain drain problem can, therefore, not only flag both the insufficient financial support which recently has characterized these sectors and the need to meet especially hot labour market competition for certain groups of workers, but also point to where changes in the existing systems are needed.

For example, perhaps certain services currently provided by hospitals should indeed be turned over to private clinics or at least be offered in a manner more convenient to patients rather than conforming to "hospital hours."²⁹ Maybe we should be re-thinking the manner in which doctors are remunerated. Perhaps a system of 24-hour walk-in clinics should be developed. Why not put more money into prevention? A similar set of questions might be asked regarding the post-secondary education system and other sectors experiencing the loss of workers to other countries. A more efficient system should mean better quality health care, or education, or whatever other good or service is being offered, at a lower cost, obviously a desirable result for its own sake and with potentially positive effects for the related brain drain problems as efficiencies are gained, the systems work better, and related savings are reinvested in intelligent ways. In this way, the brain drain could represent a very positive force for change, perhaps of a relatively fundamental nature in at least some cases, as we respond to the signal for the need to think outside the proverbial box.

Private-sector workers

We now consider the private sector. The most commonly cited examples of where the brain drain is a particular problem are the R&D and high-tech sectors, based on the significant num-

bers involved (as seen above) and their importance to the nation's economic performance. The first of the policy principles set out above would, therefore, indicate the need to target these sectors in terms of brain drain initiatives.

The second policy principle would then suggest identifying any general problems in these sectors that should be addressed on their own account. Rather than seeing the outflows of individuals engaged in R&D activities or the high-tech sector as isolated phenomena to be responded to in a piecemeal fashion, it should be determined to what degree these outflows are symptomatic of more general problems that should be attended to in any event. Strengthening these sectors should then lead to better-paying and more interesting and challenging jobs, thereby reducing the brain drain, and in turn feeding back into the sectors' dynamism — once again a virtuous coincidence of policy outcomes.

The R&D sector

This is hardly the place to enter into any definitive analysis of the nation's R&D performance, but it would appear there is substantial room for Canada to become a more dynamically innovative country, and public policy could play an important role in this.³⁰ It helps to first look to the U.S., the undisputed world leader in terms of pure R&D and the downstream commercialization of the fruits of those activities and the country to which we lose most of our departing R&D professionals. Among the contributing factors to the US dominance are that it has many large companies which possess the financial resources to engage in their own major research programs and the product lines and market shares to make these activities worthwhile; that there exist a good number of publicly funded national research institutes which bring together critical masses of researchers and focus their efforts in areas of pure and applied research; and that their universities play a critical

role in coordinating and concentrating research resources in cooperative endeavours.

The challenge, then, is to find a Canadian way of achieving a similar R&D dynamism. We don't have many large companies that can engage in large-scale R&D activities on their own, we haven't had an extended system of national research institutes or research-oriented associations, and we don't have universities with the expansive research undertakings supported by large amounts of private and public capital on the US scale. What can we do to compete?³¹

First, action could begin with rejuvenating the government-financed and operated National Research Council, which was emasculated in the early 1990s, as a larger and more dynamic pure and applied research organization, or perhaps develop a number of loosely-related NRCs focused on different domains (health, electronics, etc.) to act as the keystones of the nation's R&D activities. Second, a greater amount of university-based research could be encouraged by directly providing funding for specific projects and the required underlying infrastructure. Third, despite the fact that Canada already provides many generous tax incentives for private R&D activities, further measures could be considered, including various tax changes of the type recently suggested in the context of the high-tech sector, as discussed below.³² Finally, the government could play a more active role in encouraging, facilitating and helping finance various types of R&D consortiums with varying elements of public, private and academic participation.

Such initiatives, among others, should invigorate the nation's R&D sector and thereby reduce the related brain drain to more acceptable levels as a greater number of more interesting and higher paying jobs became available. Nevertheless, our third, worker-specific policy principle would suggest the need to consider other initiatives more narrowly focused on making working in the R&D sector in this

country more rewarding, especially in the short run. These are highly sought-after and very mobile workers for whom gross earnings are generally higher, and taxes lower, in the U.S. than in Canada. It might, therefore, make sense for governments to take actions that help narrow these gaps for these particular workers and thus keep more of them at home.

Such worker-specific policies represent a greater challenge for private-sector workers than the public-sector workers discussed above because the direct levers accruing to an employer, such as directly raising salaries or changing working conditions, are not available to the government. Other instruments are, however, available. One can, for example, imagine governments identifying specific tax measures that would apply largely to R&D workers which would have basically the same effect of increasing the post-tax remuneration of the workers in question. Some examples relating to high-tech workers are discussed in the next section, but similar measures could conceivably apply to R&D workers more generally.

This would essentially amount to doing in a very selective way what many low-tax advocates suggest doing at a very general level, but would be much more efficient in terms of delivering a given amount of reduced brain drain per foregone tax dollar spent. On the other hand, the notion of giving tax breaks to a relatively specific group would have to be defended. The most straightforward rationale is that we want to keep these workers in the country due to their importance to economic growth, and such directed tax breaks would represent an efficient way of doing this.

There have in fact been some important recent developments along these lines. First, the federal government has made some substantial reinvestments in university-based research in the ways discussed earlier: the creation of the Canada Research Chairs, the restoration of the previous spending cuts to the research-granting agencies and investments in research infrastructure through the Canadian Foundation for Innovation.

Second, and relatedly, the critical area of health research has been given an important boost by the development of a series of National Health Institutes, among other measures. Third, Industry Canada has developed a number of research consortiums of the general type suggested above, meant to gather, coordinate and focus various Canadian R&D interests and in some cases join them with international efforts in the same areas. Finally, the year 2000 budget and subsequent update have offered some important tax changes that should have their greatest effects on R&D activities in general and the high-tech sector in particular (as discussed below).

These developments are to be applauded, and what is primarily needed from this point is more – probably many more – of these types of initiatives: more research institutes, greater support for university-based research, more incentives for private R&D activities, more consortiums and so on. This would result in a greater amount of high-quality R&D taking place in this country, more good jobs for Canadians in the critical science and technology areas, and a reduced brain drain of these valued workers.

The high-tech sector

Turning to the high-tech sector specifically, its strong overlap with R&D activities (many important R&D activities are related to high-tech and the sector is largely driven by R&D of particular types) means that most of the above discussion applies, and no more need be said here. However, one specific recent development worth mentioning is the tax changes that have been made in the name of stemming outflows of R&D workers. In particular, the taxation of stock options has been delayed until shares acquired when the option is exercised are sold rather than when they are acquired. Additionally, the tax on capital gains has been effectively reduced through a substantial reduction in the inclusion rate, which is now actually lower

than in the U.S.; rollovers of investments in certain types of companies now shield qualifying investments from taxation until they are taken out; and the general corporate income tax rate is being gradually reduced to 21 from 28 percent.

While these are general tax changes with very little that is specific to investments in the high-tech or R&D sector per se, the effects will, as intended, likely be felt most in these often more entrepreneurial, capital-intensive sectors where stock options are a preferred means of compensation, and so on. The effects of these measures should, therefore, be significantly focused where they will do the most good in terms of directing investment funds to these sectors and making working in Canada more attractive for this important group of highly skilled knowledge workers.

These strategies, it should be again noted, are more useful – and more efficient – in terms of both achieving broad economic goals (making the economy more efficient) and stemming the brain drain than, for example, any general reduction in personal income tax rates. First, these policies make sense in their own right with most of these reforms and initiatives being long overdue. Second, the concentration of their effects in the “brain drain sector” means they should do the job of keeping these workers at home with minimal effects on others.

Other private-sector workers

The same approach of sector- and worker-specific initiatives could be used for other private-sector workers who are concentrated in particular industries and occupations. While this leaves aside brain drain workers in other sectors, the brain drain problem is typically defined in terms of such specific groups, especially the ones discussed here (as substantiated in the empirical section of this paper), so it would seem that the problem could be largely dealt with in this way. Also, the changes discussed above in the tax treatment of investment incomes could make a significant

difference for higher income individuals more generally, but in a much more efficient manner than the personal income tax initiatives which have been suggested.³³

Supply-side policies

This paper has focused on the brain *drain*, but a related issue is the *supply* of skilled knowledge workers and the possibility of filling labour shortages where outflows have been problematic. The first point to make here is that if the underlying problems are not dealt with, any enhanced supply will tend to be sucked out of the country as much as current workers.

That said, there are certain areas where we are likely to face labour shortages in the years to come, regardless of what is happening in terms of the brain drain, since the new global economic order means that the same forces that have caused the strong demand for certain types of workers in other countries and enticed Canadians to leave this country are largely operating in a similar manner here. In short, brain drain workers represent areas where there might be concerns regarding domestic supply in the years to come even if the outflows problem is addressed. Here, we briefly discuss two key groups in point, post-secondary graduates and immigrants.

Post-secondary graduates

To start, the general state of the post-secondary system must be addressed: Are we producing the quantity and quality of such “knowledge” workers for Canada to compete at the international level in the 21st century? The general decline of the post-secondary system has been discussed above and need not be addressed further here. It is, however, a key issue which must be attended to.

A more specific issue is whether we are producing the right *mix* of graduates. The shares of graduates of different disciplines seems, for example, to have been surprisingly stable, and it

is entirely possible that the system needs to be more responsive to market demands in this respect.³⁴ At the same time, careers in what should be growth areas (e.g., science and technology disciplines) have not been as enticing as one might have expected and producing more science and technology workers makes sense only if we have an economy that takes advantage of their talents. Finally, it is not clear if the country is producing enough graduates at the Master's and Ph.D. levels, especially in the critical areas of science and technology.³⁵

Immigrants

In summarizing the existing evidence, Zhao et al. find that while Canada suffers a net loss to the U.S. for various critical classes of knowledge workers, the substantial inflows from other countries generally leave the country as a net gainer in terms of overall flows, even in such critical areas as computer programmers.³⁶

The questions that remain, however, include the following: What is the quality of these workers? Are their talents being fully utilized in this country? Could immigrant selection procedures, settlement policies, professional accreditation procedures or other structures change so as to permit the country to take greater advantage of this source of highly skilled labour? How many leave for the U.S. after only short stays in Canada and could anything be done to keep them here?

Immigrants offer a rich source of highly skilled labour for Canada. They possess unique sets of talents stemming from their educational backgrounds, accumulated job experiences, the different languages they speak, their understanding of other cultures and other attributes which are particularly valuable in the emerging global economy and in which Canada could compete at the international level in the years to come. Addressing these issues could therefore pay large benefits to Canada in brain drain areas as well as more generally.

Conclusion

The brain drain is a problem that needs to be addressed.

However, the problem is of a very different nature than many might imagine. The brain drain is, first, certainly not a question of great hordes of Canadians leaving *en masse*, since current outflows are quite small by historical standards. Focusing on the movements to the U.S. which dominate the debate, outflows do appear to have increased in the 1990s but are still estimated to amount to between only fifteen and twenty-five thousand workers per year, about one-tenth of one percent of the working population.

Nor do the data indicate that great swaths are being cut through the ranks of our "best and brightest"; the flows are simply not very large even at the high end, as, for example, measured by individuals' income levels. Several thousand "higher income" (generously defined) departures per year (to all destinations) would simply not seem to be grounds for panic, especially when many of these individuals will come back at some point with new skills and valuable experience to lend to the country.

That said, the brain drain is a significant problem in the sense that certain specific groups of highly skilled workers are leaving in substantial numbers and will be missed, including doctors and other health-care workers, university professors, engineers and scientists and others in R&D activities generally and the high-tech sector in particular, and those at the top end of the income ladder.

With the empirical record established, various policy options have been considered. General income tax cuts would comprise an extremely blunt policy instrument for dealing with the brain drain because they would apply to all individuals, most of whom are not at the slightest risk of leaving the country, and would be very costly in terms

of the associated revenue losses and consequent reductions in public spending. Even under the most wildly optimistic assumptions, the cost per brain would be high, about half a million dollars per brain, year after year, and might well be several times this amount. In short, there may or may not be good reasons to cut personal income taxes, but that issue should be considered on its own terms rather than dragged into the brain drain debate in the tail-wagging-the-dog fashion it has been of late since the associated brain drain effects would likely be very small and dwarfed by the more general consequences of any such initiative.

A range of alternative strategies have been offered, guided by three policy principles. First, initiatives should target the relatively few specific groups of workers that comprise the greatest part of the brain drain problem. Second, actions should begin by addressing the general problems that characterize the brain drain sectors, problems which need to be addressed on their own account, with an understanding that such actions will also lead to a reduced brain drain as the sectors are strengthened and more interesting and better paying employment opportunities emerge. Third, to the degree that such sectoral actions do not stem the outflows to the desired levels, other worker-specific measures could be adopted, with these focused on the most talented individuals who face the best outside offers precisely because of their special skills in some very competitive labour markets.

For example, the alarming loss of health professionals to the U.S. in the 1990s may be linked to the cuts in health systems instituted across the country at that time. Therefore, initiatives could begin with a reversal of those trends, an expensive proposition but one possessing commensurately broad benefits well beyond any brain drain effects, and one which recent polls, elections and budgets suggest the public wants. If those general measures and the resulting rejuvenation of the health sector did not reduce the outflows to the desired

levels, certain measures more specific to workers, including salary increases and other improvements to employment conditions, could be adopted to make careers in these areas more rewarding. Similar strategies were sketched out for those in the education sector, as well as private-sector R&D and high-tech workers. Supply-side measures related to post-secondary graduates and immigrants should also be apart of any general brain drain policy initiative, since these are areas where demand is likely to outstrip supply at the international level for years to come.

In conclusion, then, the brain drain is principally a problem of specific types of highly skilled workers leaving the country. They are *pushed* by various underlying problems in the sectors in question and *pulled* by the associated pockets of strong labour market demand at the international level, especially in the U.S. Therefore, the most effective and efficient general strategy for dealing with the problem would be to address the deeper sectoral issues at their general levels, thus dealing with the push factors, and then make working in Canada a more attractive proposition in terms of remuneration and working conditions for the relevant groups of workers, thus addressing the pull side of the dynamic.

Such directed and focused strategies would address the brain drain problem as it actually exists. And unlike the general tax-cut approach, they would do so without changing the basic nature of the country. Indeed, the brain drain “problem” could lead to a strengthening of the country in this respect, to the extent that it led to intelligent policy initiatives that shored up various key sectors in our economy while indeed keeping some of our key knowledge workers at home. All this would thus comprise a “Canadian way” of meeting the brain drain challenge rather than simply following the American lead in a race to the bottom in terms of taxes and, of necessity, public spending. The challenge is there for us to properly assess, the solution to be chosen.

Notes

* Ross Finnie is a Research Fellow and Adjunct Professor in the School of Policy Studies at Queen's University. The views and opinions expressed here are his alone and should not be ascribed to the institutions with which he is affiliated.

Special thanks go to Scott Murray, Director General of the Institutions and Social Statistics Branch at Statistics Canada, who contributed greatly to this paper. The empirical section is, in particular, based on work he has directed and in which he has participated.

The participation of the five commentators is very much appreciated, having made for the wider discussion and debate which had been hoped for.

The author is grateful to Herb O'Heron of the Association of Universities and Colleges of Canada for helpful discussions and materials provided; to representatives of Industry Canada and the Department of Finance for discussions regarding various Government programs; and to Don McDougall and Mars Mainville for excellent research assistance and administrative help.

Finally, appreciation is expressed to the IRPP for supporting this paper, and particularly to Daniel Schwanen, who guided the project from beginning to end and offered many useful suggestions throughout, including detailed comments on various drafts.

- 1 Gzowski (2000).
- 2 See Emery (1999); Simpson (2000) and Wagner (2000) regarding the politicization of the brain drain debate. Emery, in particular, predicts the issue will never go away because various other causes will continually be linked to it for reasons of political expedience.
- 3 This section borrows very heavily from Zhao et al. (2000). A great debt is owed to one of the co-authors of that piece, Scott Murray of Statistics Canada, for his participation in the writing of this section.
- 4 Zhao et al. (2000).
- 5 Some portion of the increased flows of workers from Canada in recent years can probably be attributed to the large numbers of highly educated and mobile immigrants who came into the country over this period and before and who subsequently continued on to some other final destination.
- 6 2000 data. Cansim tables 227-0001 and 227-0002. In comparison, total exports represented 26 percent of GDP in 1982 and imports 22 percent and the US shares of those were 69 percent and 67 percent, respectively.
- 7 See Simpson (2000) and Helliwell (1999, 2000), among others, regarding the Canada-US wage gap.
- 8 See Zhao et al. (2000) and Helliwell (1999) for a historical perspective of the Canada-US flows. Helliwell argues that the long-term downward trend has been principally due to a narrowing of the income gap between the two countries as well as expanded opportunities for post-secondary education in this country, offset by improvements in the employment opportunities in certain sectors in the U.S. and improvements in transportation and communication which have lowered the personal costs of leaving.

- 9 Conference Board of Canada (1999); DeVoretz (1999); DeVoretz and Laryea (1998); Iqbal (1999) and Globerman (1999).
- 10 See Hoefler et al. (2000) for an excellent discussion of these points, Helliwell (1999) for a general concurrence with the assessment adopted here, and Globerman (1999) and Simpson (2000) for alternative descriptions of the different kinds of temporary visas and types of workers covered by them.
- 11 It is an open question as to whether this historical relationship between permanent and temporary emigrants has shifted in recent years.
- 12 It should be noted that occupational characteristics are currently available only for permanent migrants to the U.S.
- 13 Frank and Belair (2000).
- 14 See Helliwell (1999, 2000) for an analysis of graduates from the University of British Columbia and a discussion of those data in the context of the more general National Graduate Survey-based results.
- 15 There is relatively little hard data available on the specific reasons individuals emigrate, but that which exists suggests that tax rates are by no means a dominant factor. See McKendry et al. (1996) regarding doctors, Frank and Belair (2000) for the case of recent post-secondary graduates, Conference Board of Canada (1999) for references to other specific studies, Simpson (2000) for a sample of "Star-Spangled Canadians" covered in his interviews and Helliwell (2000) for a summary of the existing evidence.
- 16 That is, Canadians pay for their health system, post-secondary education system and other benefits and services through their tax dollars, while these have to be purchased in private markets in the U.S. (in particular), and the benefits of those socially provided items have to be taken into account when evaluating the effects of taxes on well-being and comparing post-tax incomes in the two countries.
- 17 A forthcoming special volume of *Canadian Public Policy* (Sharpe et al., eds.) addresses the efficiency side of inequality and public spending.
- 18 These simulations were carried out using the Statistics Canada SPSPD/M database and model, a micro-level system designed to estimate the effects of changes in the tax system or other policy parameters on a variety of outcomes, such as those studied here. The figures presented here are based on the 2000 tax year. The SPSPD/M has a "static" setup in that any potential behavioural responses, such as individuals' work patterns, are not taken into account, but suits our purpose of giving a rough idea of how government revenues and individuals' incomes might shift with the tax changes being considered. The author is grateful to Brian Murphy of Statistics Canada for carrying out these simulations and related discussions.
- 19 These calculations do not take into account the offsetting savings in government revenues that would result from reducing the number of emigrants, but these would be relatively small. If, for example, the tax cuts prevented 2,500 individuals from leaving and each of these paid \$100,000 in taxes, the offset would be \$250 million — about one-tenth of the estimated tax revenue losses.
- 20 Wagner (2000).

- 21 Suppose we take emigration to the U.S. to be approximately 25,000 per year (greater than the upper bound given in graph 3). With graph 5 telling us that U.S. emigration amounts to about half of all outflows, Wagner's 10 percent yields a total effect of a reduction of 5,000 emigrants per year. Dividing the \$11 billion revenue loss by this number gives the \$2.2 million cost per brain (Wagner 2000).
- 22 McKendry et al. (1996).
- 23 See Helliwell (1999) and Simpson (2000), among others, for similar views regarding the importance of such "push" factors in the health sector, as well as other public sectors (e.g., education). The Canadian Medical Association (1999) offers one perspective of the decline in spending on health care and its effects, while McKendry et al. (1996) report that working conditions were a significant factor for many doctors who left the country and for those thinking about leaving, even though many of them considered Canada to have a generally better health system than the U.S.
- 24 Canadian doctors largely are paid a good deal less than their American colleagues, and this gap has grown significantly over the last decade as physicians' salaries have seen phenomenal growth in the U.S. while they have lagged here. Canada need not match those American fee structures for several reasons: the social benefits and general quality of life offered in this country (as discussed above); the preference for the Canadian medical system which the majority of doctors in this country hold (McKendry et al. [1996]); and the fact that staying home for purely personal reasons is typically the first choice of most individuals. That said, narrowing that wage gap would certainly help reduce the outflows. This might not seem like very attractive policy-making from a social equity perspective since doctors are already among the most highly paid individuals in the country and benefit significantly from their largely government-funded education. But the reality of the situation is that they can often earn much more elsewhere, and if we refuse to deal with the problem in such a pragmatic manner we need to be ready to accept the exodus.
- 25 In his analysis of University of British Columbia graduates, Helliwell (1999) finds no such exodus of nurses in the 1990s and blames the departures found at the national level on the health-sector cutbacks that reduced job opportunities in other provinces.
- 26 See AUCC (1999) for documentation and discussion of these developments.
- 27 One common dynamic of the 1990s has been for some of our best senior faculty to accept early retirement buyouts and then take up lucrative offers in the U.S.
- 28 The average tenured professor at the average university, for example, faces little in the way of attractive job offers elsewhere, while the good ones face such opportunities in abundance. Initiatives should recognize this dynamic and be appropriately focused.
- 29 The recent nationwide outcry over access to MRI machines has, interestingly, led at least some hospitals to extend their hours, while in other cases private clinics seem to be absorbing the overflow demand, amidst considerable debate regarding equality of access.
- 30 See Lavoie and Finnie (1999) for a general discussion of the nation's performance regarding these sectors in the

context of the career opportunities available for recent science and technology graduates and Schwanen (2000) for an excellent extended discussion of the nation's R&D performance from the perspective of the brain drain per se which is very much in the spirit of the analysis offered here. Other writers who focus on the science and technology sectors include DeVoretz (1999) and DeVoretz and Larya (1998).

- 31 It is important to understand that R&D often needs to be undertaken on a large (and costly) scale and typically has a diffuse, unpredictable and "public" nature to its output. Such conditions lead to a natural market failure in terms of generating the optimal amount of R&D, thus opening the door to policy measures to help solve the problem.
- 32 See Mintz (forthcoming) for a good discussion of some of the most important tax issues of the day, especially as they relate to economic efficiency.
- 33 Capital is generally a much more mobile factor of production than labour. This means that it is important to bring Canadian treatments into line with our competitors, which is one important reason why those changes make much more sense on their own than do general reductions in personal income taxes.
- 34 Finnie (2001, forthcoming), for example, shows that the shares of bachelor's level graduates across different discipline categories were effectively unchanged from the early 80s to 1990.
- 35 See Lavoie and Finnie (1999) for an empirical analysis of the careers of recent science and technology graduates and a discussion of these related issues, and Schwanen (2000).
- 36 Zhao et al. (2000).

References

- Association of Universities and Colleges of Canada. *Trends: The Canadian University in Profile*. Ottawa: Association of Universities and Colleges of Canada, 1999.
- Canadian Medical Association. *Investing in Health Futures: No Time Like the Present*. Canadian Medical Association, report prepared for the 132nd Annual Meeting (1999).
- Conference Board of Canada. *Are We Losing Our Minds? Trends, Determinants and the Role of Taxation in Brain Drain to the United States*. Ottawa: Conference Board of Canada, 1999.
- DeVoretz, Don and Samuel A. Laryea. "Canadian Human Capital Transfers: The United States and Beyond." C.D. Howe Institute *Commentary*, no. 115 (1998).
- DeVoretz, Don. "The Brain Drain Is Real and It Costs Us." *Policy Options*, Vol. 20, no. 7 (September 1999): 18-24.
- Emery, Herb. "The Evidence vs. the Tax-Cutters." *Policy Options*, Vol. 20, no. 7 (September 1999): 25-29.
- Finnie, Ross. "Fields of Plenty, Fields of Lean: the Early Labour Market Outcomes of Canadian University Graduates by Discipline." *Canadian Journal of Higher Education*, Vol. 31, no. 1 (Spring 2001): 141-176.
- Finnie, Ross. "Earnings Differences by Major Field of Study: Evidence from Three Cohorts of Recent Canadian Graduates" (with Marc Frenette). *Economics of Education Review*, forthcoming.

- Finnie, Ross. "A Matter of Discipline: Early Career Outcomes of Recent Canadian University Graduates." In *Out of the Ivory Tower — Canadian Universities and the Knowledge Economy*, ed. David Laidler. Toronto: C.D. Howe Institute, forthcoming.
- Frank, Jeffrey and Eric Belair. "Pathways to the United States: Graduates from the Class of '95." *Education Quarterly Review* (Statistics Canada Cat. No. 81-003-XIE), Vol. 6, no. 3 (May 2000): 36-44.
- Globerman, Steven. "Perspectives on North American Free Trade." Industry Canada Research Publications Program, Paper no. 3 (April 1999).
- Peter Gzowski. "Come Clean if You Don't Know Which End is Up." *The Globe and Mail*, October 28, 2000: A11.
- Helliwell, John. "Globalization: Myths, Facts and Consequences." C.D. Howe Benefactors' Lecture (2000).
- . "Checking the Brain Drain: Evidence and Implications." *Policy Options*, Vol. 20, no. 7 (September 1999): 6-17.
- Hoefler, Mike, Doug Norris and Elizabeth Ruddick. "Canadians Authorized to Work in the United States Under NAFTA Provisions." Paper presented at the November Metropolis Conference, Vancouver, 2000.
- Iqbal, Mahmood. "Are We Losing Our Minds?" *Policy Options*, Vol. 20, no. 7 (1999): 34-38.
- Lavoie, Marie and Ross Finnie. "Is It Worth Doing a Science or Technology Degree in Canada? Empirical Evidence and Policy Implications." *Canadian Public Policy*, Vol. 25, no. 1 (March 1999): 101-121.
- McKendry, Robert J.R., George A. Wells, Paula Dale, Owen Adams, Lynde Buske, Jill Strachan and Lourdes Flor. "Factors Influencing the Emigration of Physicians from Canada to the United States." *Canadian Medical Association Journal*, Vol. 4, no. 2 (January 1996): 171-181.
- Mintz, Jack. *Most Favored Nation: Building a Framework for Smart Economic Policies* (provisional title). Toronto: C.D. Howe Institute, forthcoming.
- Schwanen, Daniel. "Putting the Brain Drain in Context." C.D. Howe Institute *Commentary*, no. 140 (2000).
- Simpson, Jeffrey. *Star-Spangled Canadians: Canadians Living the American Dream*. Toronto: Harper-Collins, 2000.
- Wagner, Don. "Do Tax Differences Contribute Toward the Brain Drain from Canada to the U.S.?" Paper presented at the Canadian Economics Association meetings, Vancouver, 2000.
- Zhao, John, Doug Drew and T. Scott Murray. "Brain Drain and Brain Gain: The Migration of Knowledge Workers from and to Canada." *Education Quarterly Review* (Statistics Canada Cat. No. 81-003-XIE), Vol. 6, no. 3 (May 2000): 8-44.

The Brain Drain: A View from Below

Peter Kuhn
University of California,
Santa Barbara

Several months after I moved to the U.S., a prominent Canadian academic e-mailed me a question: “What does it feel like to be a drained brain?” The question gave me pause, because it reminded me that becoming a “drained brain” was one of the most difficult decisions I have had to make in my professional life.

Since that time I have had almost two years to reflect on what my personal experiences might contribute to an understanding of Canada’s brain drain question. Rather than address broad statistical issues, which Ross Finnie has handled very nicely, my comments offer a personal perspective based on what I have experienced firsthand: what it’s like to be a skilled worker, particularly in the academic sector, on both sides of the forty-ninth parallel. Clearly, the proper view of my experiences is as a case study, which might point out some important issues that deserve more general and thorough investigation.

Let me begin by noting my total agreement with three main points made by Finnie: First, the brain drain clearly does not consist of huge absolute numbers of people. Second, its importance is likely restricted to a few key sectors, such as higher education, technology and health,

although I wonder whether the arts, entertainment, sports and management should be added to this list. Third, within each of these sectors, the most worrisome aspect of the migration to the U.S. is its concentration among those workers who are performing well above average in their chosen professions. In what follows, I add just two main observations to Finnie’s analysis: I try to quantify, as well as possible, the *real* salary gap (including intangibles and quality of life) for skilled workers between the U.S. and Canada. I then survey a number of possible policy remedies that emerge from this analysis, focusing on the academic sector where I have some firsthand knowledge.

How Big is the *Real* Salary Gap for Skilled Workers Between Canada and the U.S.?

Salary

Let me begin with an example, and a story. The example comes from my own profession, where I am familiar with current pay levels and trends. Entry-level salaries for newly minted economics Ph.Ds hired at US research universities last year were around \$72,000. At a 65-cent exchange rate this is just under \$111,000 Canadian, which is more than most Canadian full professors earn at the peak of their careers. Indeed, it is a salary not at all atypical for, say, an academic dean.

The story involves a young Canadian economist who was recently a co-applicant on a research grant with a US academic. The economist shall remain nameless but has generously granted me permission to report the incident. Since US granting agencies provide partial salary replacement to grantees, the Canadian economist was required to report his/her salary to the research institution preparing the grant application. Shocked by the

difference between what the Canadian and US researchers on the same grant would be paid, the accounting department at this institution suggested the Canadian economist be considered for a special salary supplement designed to help researchers from Third World countries.

The above examples suggest a large Canada-US wage gap, and a big temptation for Canadian scholars to leave. But do they? One could argue that this large apparent salary difference is an illusion based on an undervalued Canadian dollar and a higher Canadian quality of life. While it is clear that certain highly visible non-traded goods, such as restaurant meals, are not currently priced at purchasing power parity in the two countries, a number of other factors also affect the Canada-US real salary comparison. How do these stack up? In what follows I consider a number of such factors in turn.

Taxes

The overall level of income taxes in the U.S. versus Canada is the most well-known of the factors that tend to undo purchasing power parity differences in Canada's favour. Income and consumption taxes paid by highly skilled workers are *much* lower in the U.S. than in Canada, and some observers engaged in hiring in my profession have argued that this effectively undoes any departures from purchasing power parity between the two countries. I am not aware of any hard calculations, but based on personal experience this seems roughly true. Thus, if tax differences roughly offset deviations from purchasing power parity, the current exchange rate is approximately the right one to use in comparing salaries. As already noted, this does not make Canadian salaries look good.

Compensation structure

Moving away from the overall level of compensation to its structure, Canadian academic compensation lacks two features of US compensation

that make the U.S. especially attractive for academics who are above-average performers in their field, or who are in fields that are in high demand. One is a substantial component of salary that is directly linked to one's research output, called "summer money."¹ Established researchers receive summer money as part of the research grants they win from institutions like the National Science Foundation (NSF). Newly hired faculty are typically offered two to three years of start-up summer money by their university, to help them get established in the grant-writing process. Typical amounts of summer money are two- to three-ninths of one's annual salary. Thus, the correct starting US salary in my profession is more like $((1 + 2/9) \times 72,000)$ \$88,000 US, or \$135,000 Canadian. This is more than double typical starting salaries in Canada. It is noteworthy that this (approximately) 2/9 summer premium is, in a sense, performance-linked: it can continue for a lifetime, but only if the individual in question remains a successful grant applicant.

The second aspect of compensation structure that makes the U.S. an attractive destination for those Canadians who are above-average performers in their fields, or who are in high-demand fields, is the greater reliance on merit pay and market-based pay in US universities. The lack of such pay in Canada is partly attributable to a high level of faculty unionization. For example, a large majority of Ontario universities now have unionized faculties; the general antipathy of unions to merit and market-related salary differentials is well-known.² Similar problems exist in the minority of universities that remain non-unionized. The top US universities face no such constraints and pay hefty premiums to top scholars whose work is in high demand. In fact, the US academic labor market has come to resemble the market for professional athletes, where bidding wars among several universities for top talent are not uncommon. In addition to market-based pay, many US univer-

sities, such as the University of California system where I work, offer meaningful regular merit raises to productive senior scholars, a practice that is, to my knowledge, either very rare or non-existent in Canada.

The relative reluctance of Canadian universities to tolerate merit and market-based pay differentials, both within and across departments, makes a US destination even more attractive for precisely those individuals Canada presumably most wants to keep.

Colleagues

Academics and other skilled workers place a great value on the ability to keep learning new things in their work. They do this partly out of love, but also because the financial incentives in their professions reward knowledge. Because one of the best ways to ensure continued learning is to have bright, stimulating colleagues, the quality of one's current and future colleagues is one of the most important factors involved in choosing a workplace.

Although the presence of well-trained and stimulating colleagues is a more intangible aspect of the job package, it interacts with the tangible salary component in an important way. Low starting salaries (by international standards) offered by Canadian departments can make senior Canadian researchers (who might otherwise be happy with their own salaries) skeptical about their university's ability to attract exciting younger colleagues. Thus, salaries matter not just for their own sake, but for the kind of working environment they can produce. This fact, again, puts Canada at a disadvantage in attracting and keeping top scholars.

Amenities

A colleague of mine who recently left Canada was approached before his departure by his department chair, who emphasized the downsides

of a move to the U.S.: crime, pollution, drugs, no public health insurance, decaying public schools, etc. Aside from its questionable effectiveness as a way to encourage one's best employees to stay, it is worth examining the validity of this claim as it applies to the highly-skilled "brains" who might be drawn to the U.S. by higher salaries.

The US locations in which drained brains are likely to live and work are not "average" places. To the contrary, as Robert Reich argued in a perceptive and prescient book, skilled workers, whom he calls symbolic analysts, tend to congregate in very specific U.S. locations such as Princeton, New Jersey; New York's Westchester County; Austin, Texas; Bethesda, Maryland; Raleigh-Durham, North Carolina; and Palo Alto, California. These locations are distinguished by the presence of one or more first-rate universities and by a very high quality of life. A recent survey of recent US economics Ph.Ds from top schools (who, stereotypically, care only about their work) revealed a surprising emphasis on the quality of life in the location they were choosing.

Because of the specific locations where skilled workers tend to congregate in the U.S., most of the "downsides" mentioned by my colleague's chair are simply non-issues for highly skilled workers moving there. The areas in question tend to have a pleasant climate and lifestyle, in addition to low pollution, crime and an absence of drugs (for example, drugs were much more prevalent in my children's Canadian schools than in their current schools). High quality health care is provided by one's employer. In most of these aspects the U.S. is at least comparable to Canada.

In fact, for one public good that is particularly relevant to highly skilled workers, the U.S. has, in my personal experience, a substantial advantage. This is the quality of public education specifically geared to children who are bright and motivated and who wish to excel. Because schools are something highly educated parents tend to care pas-

sionately about, it is particularly unfortunate that the public schools my children encountered, in a desirable Canadian neighborhood, exhibited an astonishing reluctance to promote and encourage excellence, among both students and teachers. The same culture of “levelling down” prevailing in the unionized universities seemed to be present in our children’s public schools, where offering extra challenges to more-motivated children was at times frowned upon as unfair, at other times just too much bother. Our children’s current schools, which are also public schools, challenge children of all abilities and backgrounds. The contrast could not be more stark.

A final, undeniable aspect of amenities is the weather. While Canada has some milder and highly desirable enclaves, such as West Vancouver, it is an inevitable and unfortunate fact that, by international standards, even the nicest parts of Canada have a harsh climate. While one might wish to deny that highly skilled workers are motivated by such factors, the evidence on continued US population flows to the south and southwest, and the accelerating demand by America’s best and brightest to live in these areas strongly suggests the contrary. While the Canadian climate is, of course, not a policy parameter any government can control (though I sometimes wonder why the Canadian government is so eager to support anti-global warming initiatives!) I raise the climate issue to make the following point. If Canada’s climate is seen as a minus by most would-be immigrants (especially for those not accustomed to it), it is not absurd to argue that to really be able to attract top talent Canada needs to offer a compensating wage premium to encourage those people to locate here, much like Alaska and Canada’s territories offer higher wages to encourage people to locate in their regions. Simply eliminating the large after-tax wage gap may not be enough.

In sum, attempts to argue that intangibles, including such things as socialized medicine and

high-quality public schools, somehow make up for lower cash salaries in Canada, do not hold water for highly skilled “brains.” (They may very well apply to lower-income individuals but this is not at issue in the brain drain debate.) Policymakers hoping to retain top talent in Canada — indeed, those who hope to attract it to Canada — need to take this into consideration.

Foregone opportunities and interactions

The above discussion of attracting foreign talent to Canada raises the issue of foregone opportunities. In fact, the most insidious, and hardest to measure, aspect of the brain drain concerns the *quality* of the workers and scholars Canada *would have* been able to attract over the past decade or so had it offered a more competitive working environment. Twenty years ago Canadian universities offered relatively competitive salaries to those in the U.S., often outbidding US universities for top talent. Many talented people came north at that time in what was probably a healthy two-way exchange of brains. This is no longer the case. The occasional, highly visible departure of well-known Canadian academics to the U.S. in recent years is only the tip of a much bigger iceberg. Importantly, because it concerns the quality of the workers who would have come to Canada had things been different, the size of this iceberg cannot be measured by counting the total inflows and outflows of Ph.Ds from Canada, as some analysts have attempted to do.

A final point about real salary differentials is that the various dimensions of compensation discussed above interact in important ways. My family’s situation is an example, albeit a highly personal one: Had the local public goods (in our case, essentially the schools) been better, Canada’s lower salaries and higher taxes would, I believe, have seemed acceptable. Or, had our after-tax salary been high enough to allow us to purchase a private alternative to what we felt was a sub-stan-

dard public product, this would have been acceptable as well. But with all these dimensions working together, the camel's back was broken.

Policy Remedies

In a classic article on immigration, George Borjas (1987) argues that the United States would do well to encourage immigration from countries that have greater wage equality than it does and to discourage immigration from high-inequality countries. The reason is the U.S. will attract the “stars” from the high-equality countries, who can raise their salaries by moving to the U.S., but will disproportionately attract labor-market “lemons” from high-inequality countries. The principle, though not the degree, is the same as that which prompted highly educated scientists and engineers to flee East Germany for the West during the Cold War.

According to Borjas' argument, the U.S. is making out very well with its Canadian immigrants because its labor market rewards exceptional ability and effort much more. One obvious policy solution, of course, is to raise the level of earnings inequality in Canada, but this strikes me as both unnecessary and unlikely to be acceptable to much of the Canadian public. It is unnecessary because, as Ross Finnie has shown, the brain drain is concentrated among the top-performing workers in a few key sectors. To address the problem Borjas identifies, Canada needs to raise inequality only among highly qualified Canadian workers. Certainly, poverty within this group is not an issue, so allowing pay differentials within this group to more accurately reflect differences in achievement and in demand for specific fields of knowledge might be one way to allow Canada to retain its best workers at minimal social cost.

In the rest of this section I offer three concrete policy suggestions aimed specifically at the brain drain in Canada's academic sector. All of them are

based on two premises. The first is that, given the current funding situation and political climate, a large, across the board salary increase for Canadian university professors is simply not going to happen. The second is Borjas' insight that raising pay inequality to more accurately reflect an individual worker's productivity in the immigration source country helps prevent other countries from cherry-picking its top talent.

1. Increase the proportion of salary going to merit- and market-based pay in Canadian universities. One way to do this is, of course, is for universities to make aggressive salary counter-offers to their own professors who receive job offers in the U.S., offers which should take into account some of the tax and other differentials outlined in the last section. But this is not enough, for two reasons. First, if it becomes apparent that the only way a scholar can raise his/her salary is by generating an outside offer, a policy that relies exclusively on offer-matching will encourage job search. Second, given the economic environment described in the last section, it is very hard to turn a US offer down once it has been generated. Thus, measures that recognize above-average achievement before it is too late are required. Such measures require offering sizable real salary increases to scholars of all ages and incomes who publish in the highest-ranked international journals in their field. Fields or departments which adopt the nihilistic postmodern position that no objective measure of research quality exists, should reasonably be allowed to languish without a merit pay budget.

In this area, the recently established Canada Research Chairs are a step in the right direction, but Canadian universities' recent collective decision to put a hefty overhead “tax” on them leaves them less than credible as means of attracting new talent from outside the country or, for that matter, of luring most expatriate Canadian scholars back to Canada. Rather than *taxing* this inflow of federal money, Canadian universities would do well to *supplement* it with various forms of matching funds (as my current university does when an outside donor endows a chair) to create a truly excellent and desirable package.

2. Allow salary differentials across fields of study to reflect differences in demand. Forcing the same bureaucratic salary structure onto fields with very different levels of demand in the current labor market means that, ultimately, one attracts and retains top scholars only in those fields that are in low demand.

3. Canadian granting agencies such as the Natural Sciences and Engineering Research Council (NSERC) and Social Sciences and Humanities Research Council (SSHRC) should start paying summer salary to their most highly ranked applicants.

The above recommendations may not seem very substantial but, if truly taken to heart, would in fact mean a major change in the organizational culture of some Canadian universities, away from an emphasis on equality and bureaucracy and toward excellence and adaptability. The changes would require a great deal of courage on the part of any administrator who ushered them in.

Finally, it is worth pointing out that the above recommendations are particularly aimed at the academic sector. Together with the health sector, universities have the distinction of being a Canadian public-sector industry competing for workers with an industry that is partly (in fact substantially at the top) private in the U.S. The changes suggested above are likely more relevant to those kinds of sectors than others which are largely private in both countries.

Conclusion

The current real salary gap between Canada and the U.S. is very large for top performers in the academic sector. While one cause of this is just a lower overall wage level in Canada, another — one much more amenable to policy changes — involves the *structure* of wages within the academic sector. I have argued that considerable progress in reducing, or

perhaps even reversing, the brain drain might be made at low social cost by allowing the structure of wages in Canadian universities to more accurately reflect individual merit and market demand.

Notes

- 1 Of course, a number of Canadian and US academics also supplement their salaries by consulting, but this is a fee-for-service transaction where one produces a specific product for a client, not the sort of basic research supported by summer grant salary.
- 2 See for example, Freeman (1982, pp. 3-21). A few years ago, the faculty association at York University proudly announced that it had completely eliminated merit pay for faculty.

References

- Borjas, G. "Self-Selection and the Earnings of Immigrants." *American Economic Review*, Vol. 77, no. 4 (September 1987): 531-553.
- Freeman, R.B. "Union Wage Practices and Wage Dispersion within Establishments." *Industrial and Labor Relations Review*, Vol. 36 (1982).
- Reich, R.A. *The Work of Nations*. New York: Random House, 1992.

Who Let the Docs Out?

Peter Barrett, MD, FRCSC
Past President, Canadian
Medical Association

At the outset I would note that I will base my commentary on the perspective of the medical profession, with which I am most familiar. Ross Finnie is to be commended for highlighting the significance of the brain drain in occupations such as medicine and nursing, particularly when we continue to see stories under headlines such as “Physician brain drain overblown,” that trivialize it. Indeed, the federal government continues to deny there is a brain drain.² Finnie then outlines policy principles and approaches for addressing the brain drain. I will comment on each of these in turn.

Context – The Numbers

Finnie dramatically sets the context of the brain drain for medicine with reference to migration data between Canada and the United States that were compiled by Statistics Canada.³ These data show that over the 1990-1997 period, for every physician coming to Canada from the U.S., almost 19 left Canada to go to the U.S.

Table 1, taken from the Canadian Institute for Health Information, provides a perspective in

absolute numbers in physician emigration over the 1989-2000 period. The table shows physicians leaving for and returning from all destinations, although the majority of those movements would be between Canada and the U.S.

Table 1
Physicians Who Moved Abroad and Returned from Abroad Canada, 1989–1999

Year	Moved abroad	Returned from abroad	Net loss
1989	384	249	135
1990	478	263	215
1991	479	256	223
1992	689	259	430
1993	635	278	357
1994	777	296	481
1995	674	256	418
1996	726	218	508
1997	658	227	431
1998	568	319	249
1999	584	340	244
2000	420	256	164
Total 1989-2000	7072	3217	3855

Source: Canadian Institute for Health Information (2001 and earlier years)

Note: Moving or returning from abroad is defined as either having had or returned to a valid Canadian address.

Several highlights may be drawn from the table. First, physician emigration from Canada increased dramatically between 1989 and 1994, doubling to 777 from 384. Since 1994 the outflow has abated significantly to just over 400 in 2000. During 1998 and 1999 the number of physicians returning from abroad increased, thus the net loss was reduced to just under 250 physicians in each of those two years. The net loss further decreased to 164 in 2000. Nonetheless this is still equivalent to approximately 1.5 graduating medical classes. Over the 12-year period from 1989 to 2000 the net loss of physicians to emigration was almost 4,000.

I should add that these figures are most probably conservative, since those physicians who leave Canada immediately upon completion of post-graduate training may not be picked up in the tracking database. For example, a follow-up study of the cohort of physicians who exited post-graduate training in 1989 found that almost 10 percent were located in the U.S. or some other country in 1999.⁴

To set the stage for further remarks in my commentary, I would also note the following statistics for the 1999 physician migrants from or to Canada:

- of the physicians who left, 66 percent had received their MD degree within the last 15-year period;
- of the physicians who returned, 63 percent had received their MD degree within the past 15 years;
- specialists represented 69 percent of the physicians leaving and 67 percent of those returning, and family physicians/general practitioners represented 31 percent of those leaving and 33 percent of those returning.

In summary, over the past decade the net brain drain of physicians from Canada to the U.S. and other countries has been and continues to be significant. Finnie then develops the remainder of his paper around three policy principles:

1. Policies to stem the brain drain should be targeted on the particular groups of workers for whom outflows are a significant problem;
2. Policies should begin by addressing the broad underlying problems which exist in the sectors of concern; and
3. Initiatives should include measures aimed at the specific workers in question, focusing on the most talented and internationally mobile among them.

Assessing Finnie's Principles

First, I think Finnie is implicitly acknowledging an underlying first principle which would be an adaptation of the old marketing principle: it is much more expensive to recruit a new customer than it is to retain an existing one, and I would venture that it is less expensive to retain health workers than to train additional ones or, for that matter, entice back those who have left.

With regard to the first principle, I would not challenge Finnie's calculations that show that a general tax cut would prove to be very costly on a per-professional-retained basis. However, on the matter of tax policy, one measure the federal government could take that would remove a major irritant to the Canadian physician population would be to change the status of medical services from GST-exempt to one of zero-rating, whereby physicians would become eligible for input tax credits.

I believe Finnie's second principle (addressing broad underlying problems) merits a great deal of attention in Canada. Reflecting over the past decade I can think of four such underlying problems:

- from about 1992 to 1999 the signal to physicians was they were not wanted;
- despite the fact that the health sector is heavily dependent on the services provided by skilled and highly trained professionals, there is no high-level government policy statement that values and seeks to renew the health workforce;
- there has not been an appreciation of what it means to live beside the largest health-care economy in the world; and
- as budgets were squeezed over the 1990s, the infrastructure that contributes to the provision of quality patient care has been neglected.

I will elaborate these problems briefly.

The Signals

The first strong signal that physicians were not wanted came when the federal, provincial and territorial ministers of health met in Banff in January 1992 to discuss the 1991 Barer-Stoddart report, *Toward Integrated Medical Resource Policies for Canada*.⁵ Out of the comprehensive set of 53 recommendations in the report, the ministers cherry-picked the one recommendation with a number attached to it, namely the ten percent cut in first-year medical school enrolment that was implemented in the fall of 1993. Also in 1992 a wave of regionalization was initiated, beginning with New Brunswick, which had the effect at least in its initial phases of marginalizing physicians. A year later governments began proposing/introducing a range of punitive measures to promote distribution objectives. Probably the most extreme of these was a proposal by the Ontario government in April of 1993 to discount by 75 percent the fees of what would have been the majority of new family physicians, pediatricians and psychiatrists.⁶ Against this backdrop one should scarcely wonder why the number of physicians leaving Canada doubled between 1989 and 1994. It has only been in the last few years, with the growing awareness of the emerging physician shortage, that provincial/territorial governments have begun to acknowledge the need to treat the health workforce as a valuable resource. Dr. Robert McKendry's 1999 fact-finding report in Ontario, for example, offers a number of recommendations in this regard.⁷

One of the core principles of the United Kingdom National Health Services reads, "The NHS will support and value its staff." A recent application of this principle may be seen in a recent UK strategy document for the scientists, engineers and technologists working in health-care science. This three-point strategy covers pay and career opportunities, working conditions and recruitment.⁸

I would venture that such a consideration has been largely absent from Canadian health policy over the past decade, certainly at a national level and most probably at the provincial/territorial level. The health workforce received scant attention by the National Forum on Health. The provincial/territorial health ministers' 1997 *Renewed Vision for Canada's Health System* makes only incidental mention of the health workforce.⁹

By comparison, it is interesting to note that in the past decade no fewer than three task forces have been struck to address the renewal of the federal public service (Public Service 2000, La Relève and the 2001 Task Force).¹⁰

There are some signs that governments have belatedly begun to acknowledge that we are in a shortage situation. In November 1999, several health ministers met with members of the Canadian Medical Forum Task Force on Physician Supply in Canada which recommended 2000 first-year medical school places for 2000.¹¹ Since that time several provinces have announced increases in undergraduate enrolment and post-graduate training. As of July 2001 these increases numbered 353 undergraduate, 153 post-graduate and 37 re-entry (specialty) training positions.¹²

More recently, one of the key elements of the health accord concluded by first ministers in September 2000 addressed the supply of doctors, nurses and other health personnel.¹³ Specific points included identifying approaches to improve the education, training, recruitment and retention of our future health workforce, and working conditions, e.g., flexible working arrangements and continuing education.

Some promising developments have occurred: Health Canada has established the positions of Executive Director Rural Health and Executive Director Nursing Policy and the Canadian Nursing Advisory Committee was struck earlier this year.¹⁴ Human Resources Development Canada (HRDC) is in the process of initiating several studies in

health sectors including home care, natural products, nursing, oral health care, pharmacists and physicians.¹⁵ The Canadian Medical Forum, made up of the major national Canadian medical organizations, will be working with HRDC to implement the physician sector study over the next few years. And a recent groundbreaking collaborative consultation on research priorities in health services research by major granting agencies has identified health human resources as the dominant issue for the next two to five years.¹⁶

While I would not want to compromise the self-regulatory status of the health professions, if we are to continue to maintain health care as a public enterprise in Canada, I believe there needs to be a high-level policy acknowledgement of the value of and commitment to the enhancement and renewal of the health workforce.

The United States health economy is simply enormous. In 2000 it was estimated that roughly \$1.85 trillion was spent on health care, representing 13.1 percent of gross domestic product (GDP).¹⁷ This compares to an estimated \$95 billion in Canada during the same year representing 9.3 percent of GDP.¹⁸ While the rise of managed care in the U.S. constrained health-care cost growth somewhat over the 1990s, costs are again beginning to rise. According to the latest projections, health care will account for 13.9 percent of GDP in the U.S. in 2002 and 15.9 percent by 2010.¹⁹

While it was predicted in 1994 that there would be a surplus of 165,000 physicians in the U.S. by the year 2000, this had not materialized.²⁰ Indeed, in a July 2000 editorial in the *New England Journal of Medicine*, Dr. Fitzhugh Mullan, former chair of the US Council on Graduate Medical Education, reversed a previously held position to argue for increased medical enrolment.²¹

The size of this marketplace offers numerous opportunities for Canadian physicians and they are eagerly pursued by US recruiters. One indicator of the differential between the US and Canadian

markets is average net professional income of physicians. The best comparison available for 1995-96 suggests that the average net income of a physician in the U.S. was \$269,000, more than twice the \$119,000 for Canadian physicians.²²

There are many other attractive features of the US medical market. In 1994 Dr. Robert McKendry surveyed Canadian medical graduates who were working in the U.S. and a similar group working in Canada.²³ McKendry asked both groups about their satisfaction with 12 professional and personal factors. Among the 12 factors the only one for which the physicians in Canada reported greater satisfaction was the proximity of relatives and family. Table 2, abstracted from the McKendry study, shows striking differences in the satisfaction levels between the two groups, with those in the U.S. reporting much higher satisfaction with factors such as the availability of academic/research opportunities and adequate medical facilities/services.

Looking back over the past decade, I think policy-makers have largely ignored the US health economy and we have paid a price for doing so. Although the net loss has abated significantly over the past few years, governments continue to deny the "brain drain" at our peril. One factor that could contribute to a reversal in the abatement of the last

Table 2
Satisfaction with Selected Aspects of
Medical Practice: Canada vs. U.S., 1994

Selected factor	% reporting somewhat/ very satisfied	
	Canada	U.S.
Professional/clinical autonomy	59.4	79.4
Adequate medical facilities/ services	61.9	93.2
Level of remuneration	44.5	84.2
Academic/research opportunities	33.5	59.0

Source: J.R. McKendry et al., selected data from Table 5.

two years could be the steep rise in medical tuition over the past few years. If new graduates incur even larger debt loads it will be very tempting for them to move to the U.S., from where they will be able to repay their loans much more quickly.

One of the most visible indicators of the Canadian health-care infrastructure is the limited availability of advanced diagnostic and treatment technology. Canada is woefully behind with respect to access to such technology. Based on the most recent year for which data have been provided by the Organization for Economic Co-operation and Development, Canada's rankings in 1997 were as follows:

- computerized axial tomography (CAT) scanners, 14th out of 18;
- magnetic resonance imaging (MRI) units, 14th out of 17;
- lithotriptors, 13th out of 14; and
- radiation therapy equipment, 6th out of 20.²⁴

Another perspective on infrastructure is provided by the results of the third Commonwealth Fund International Health Policy survey, conducted by the firm of Harris Interactive on behalf of Robert Blendon and colleagues.²⁵ Approximately 500 physicians were surveyed in 2000 in each of Australia, Canada, New Zealand, the U.K. and the U.S. Table 3, taken from this study, shows that high proportions of Canadian physicians reported problems with access to care in their practices. While Canadian and U.K. physicians reported similar levels of problems, there were dramatic differences between Canada and the U.S. For example, Canadian physicians were almost eight times as likely to report problems with access to the latest medical and diagnostic equipment than their U.S. colleagues (63 percent vs. 8 percent). On the other hand, I would point out that Canadian physicians were much less likely to report patients being unable to afford prescription drugs and problems of external review of clinical decisions to control costs.

In the area of nursing, a recent policy synthesis prepared for the Canadian Health Services Research Foundation has documented a number of factors that contribute to a poor working environment for nurses and hence likely exacerbate the current nursing shortage.²⁶

While I would not want to be perceived as advocating that Canada should build anywhere near the capacity of the US health-care system, it is difficult, if not impossible to ignore it. Unless a concerted effort is undertaken immediately to address gaps in human and technological resources, I would not be surprised if more Canadian providers and patients will look across our borders. On the bright side, the federal government has made major investments in research over the past few years, including the Canadian Foundation for Innovation and the establishment of the Canadian Institutes for Health Research, which will certainly contribute to making Canada a more attractive environment for Canadian clinical scientists.

Targeted Initiatives

Finnie's third policy principle states that measures should be targeted at groups and the individuals within those groups most likely to leave. In the case of physicians Finnie proposes, "Such initiatives should be particularly focused on the types of doctors who are the most likely to leave, whose losses would have the most deleterious impact, and for whom preventive measures would have the greatest effect in reducing those departures." With respect to physicians Finnie suggests that "raising fee schedules or otherwise improving their terms of employment or work conditions would be one obvious set of measures."

The fact of the matter is that there are opportunities in the U.S. for Canadian physicians of all

Table 3
Generalist and Medical Specialist Physicians' Views on Problems in Health Care, in Five Countries, 2000

Problem	AUS (%)	CAN (%)	NZ (%)	U.K. (%)	U.S. (%)
Inadequate community resources					
Latest medical and diagnostic equipment	13 ^a	63 ^a	29 ^a	47 ^a	8
Hospital beds	67 ^a	72 ^a	57 ^a	79 ^a	12
General practitioners	17 ^a	55 ^a	5 ^a	44 ^a	19
Medical specialists or consultants	30 ^a	61 ^a	36 ^a	62 ^a	13
Home care	55 ^a	60 ^a	48 ^a	66 ^a	24
Long-term care and rehabilitation facilities	74 ^a	74 ^a	48 ^a	81 ^a	35
"Major problem" for their own medical practice					
Limitations on hospital care	34	35	33	51 ^a	38
Limitations on or long waits for specialist referrals	54 ^a	66 ^a	78 ^a	84 ^a	27
Long waiting times for surgical or hospital care	66 ^a	64 ^a	80 ^a	77 ^a	7
Limitations in ordering diagnostic tests or procedures	9 ^a	37 ^a	26	30 ^a	21
Patients cannot afford necessary prescription drugs	10 ^a	17 ^a	27 ^a	10 ^a	48
Limitations on drugs one can prescribe	12 ^a	17 ^a	37	8 ^a	41
External review of clinical decisions to control costs	21 ^a	13 ^a	16 ^a	19 ^a	37
Not having enough time with patients	37	42	32 ^a	62 ^a	42

Source: Commonwealth Fund/Harvard/Harris 2000 International Health Policy Survey of Physicians. ^ap<.05 for differences with the United States.

types. General practitioners/family physicians represent one third of the physicians leaving Canada, which corresponds roughly to the proportion of what the U.S. considers to be primary care physicians.

However, as I have previously noted, while physicians leave at all stages of their medical career, two-thirds in a given year are within 15 years of the receipt of their MD degree.

It is also evident that there is a large pool of Canadians practicing in the United States and elsewhere, some of whom might be persuaded to return. In his 1999 report for Ontario, McKendry recommended that "the Ministry of Health and Long-Term Care should develop a pilot recruiting campaign that targets expatriate Canadian-trained physicians now practicing in the USA or

other countries."²⁷ It seems to me that this would be well worth exploring.

Before briefly commenting on some possible options that address Finnie's third principle, I would propose three additional principles, to the effect that policy measures to retain and/or repatriate physicians in/to Canada should be:

- designed so as not to create inequity and destabilization among the pool of physicians practicing in Canada;
- implemented in the context of a provincial/territorial physician resources plan based on the need for medical services; and
- time-limited to a period sufficient for a physician to establish familiarity and attachment to his or her professional and personal milieu.

Options to Support Finnie's Third Principle

While I think Finnie's second principle (addressing systemic conditions) is where the greatest payoff will occur over the longer term, Finnie's third principle (targeting specific subgroups and individuals) does warrant consideration. Finnie specifically suggests "raising fee schedules" for the medical profession. I believe, however, that adjusting fee schedules to address emigration, particularly when it is difficult to precisely identify the target group, could be very divisive within the medical profession, and I would not be inclined to pursue this avenue in the first instance. It would seem to me there are two groups of physicians we might want to think of first when developing options:

- physicians in the early stages of their career; and
- the roughly 10,500 Canadian physicians currently practicing in the U.S.

Keeping in mind my three additional principles, one can think of measures that would address these groups.

Physicians in Early Career

It is increasingly the case that physicians are graduating with large debt loads and might be tempted to move to the U.S. in order to repay their debts more quickly.²⁸ One option would be to provide a measure of debt repayment for a period of service in Canada or, alternatively, to provide access to low-interest loans or bursaries. As I stated above this should be within the context of a physician resource plan, time-limited and with careful consideration to equity and fairness.

Physicians in the U.S.

There are currently more than 10,000 Canadian physicians in the U.S.²⁹ As I noted above, McKendry recommended trying to repatriate some of them and I do not believe anything has yet happened in this area. One option the federal government might consider would be some sort of income tax relief for a period of time. It appears there is historical precedent for this. In their recent article, "Why do highly skilled Canadians stay in Canada?" DeVoretz and Iturralde report, "In the late 1960s, after a decade of the brain drain to the United States, Canada induced Canadian academics to return with a combination of attractive career opportunities and three years of federal income tax forgiveness."³⁰ They suggest that such an approach might be applicable today with a three-point rationale:

- the foregone income tax can easily be recouped if a fraction of the repatriated Canadians remain in Canada;
- a three-year period might be just enough time for those returning to establish roots in the community; and
- repatriating Canadians would be less costly than importing highly skilled replacements from the rest of the world.

I believe these points are generally applicable to medicine although it goes without saying there would need to be further discussion and study. I should add that the issue of physician migration has become an international issue as many countries have found themselves in a shortage situation.

In closing, I hope Finnie's paper and my comments will contribute to the discussions and debates on this important topic. My view is that human resources is now the number one issue in the health sector, and we need to develop strategies and tactics without further delay.

Notes

- 1 Canadian Health Services Research Foundation (2000, p. 6).
- 2 McKibbin (2001, p. 59).
- 3 Zhao, Drew and Murray (2000, pp. 8-44).
- 4 Thurber and Buske (2000, pp. 1-8).
- 5 Barer and Stoddart (1991).
- 6 Shortt (1999, ch. 3).
- 7 McKendry (2001).
- 8 Department of Health, United Kingdom (2001).
- 9 Conference of Provincial/Territorial Ministers of Health (1997).
- 10 Prime Minister of Canada (2001).
- 11 Tyrrell and Dauphinee (1999).
- 12 Buske (2001).
- 13 Canadian Intergovernmental Conference Secretariat (2000).
- 14 Health Canada (2001).
- 15 Human Resources Development Canada (2001).
- 16 Canadian Health Services Research Foundation (2001a).
- 17 Heffler et al. (2001, pp. 193-203). Converted to Canadian dollars.
- 18 Canadian Institute for Health Information (2000).
- 19 Heffer et al. (2001, pp. 193-203).
- 20 Weiner (1994, pp. 222-230).
- 21 Mullan (2000, pp. 213-216).
- 22 Based on data from the American Medical Association Center for Health Policy Research, Socioeconomic Monitoring Care Surveys for 1995-1996, and from average billings data from the Canadian Institute for Health Information from 1995-96, less 34 percent for overhead.
- 23 McKendry et al. (1996, pp. 171-181).
- 24 Organization for Economic Co-operation and Development (2000).
- 25 Blendon (2001, pp. 233-243).
- 26 Canadian Health Services Research Foundation (2001b).
- 27 McKendry et al. (2001).
- 28 The Canadian Medical Association is very concerned about the increases in medical tuition and the prospect of deregulation. See CMA position paper, "Tuition fee escalation and deregulation in undergraduate programs in medicine," http://www.cma.ca/advocacy/tuition/position_paper.htm
- 29 American Medical Association Physician Masterfile (2000).
- 30 DeVoretz and Iturralde (2001, pp. 59-63).

References

- American Medical Association Physician Masterfile. March 2000. <http://www.ama-assn.org/ama/pub/category/2688.html> Accessed June 26, 2001.
- Barer, M. and G. Stoddart. *Toward Integrated Medical Resource Policies for Canada*. Winnipeg: Manitoba Health, 1991.
- Blendon, R. "Physicians' views on quality of care: a five-country comparison." *Health Affairs*, Vol. 20, no. 3 (May/June 2001): 233-243.
- Buske, L. "Additional undergraduate, postgraduate and reentry positions announced since summer 1999." Canadian Medical Association, Research Directorate, July 16, 2001.
- Canadian Health Services Research Foundation. "Commitment and Care: The Benefits of a Healthy Workplace for Nurses, Their Patients and the System." Executive Summary, http://www.chsrf.ca/english/document-library/prescomcare_e.html Accessed June 23, 2001a.
- . "Listening for Direction, a National Consultation on Health Services and Policy Issues." Ottawa: Canadian Health Services Research Foundation, 2001b.
- . "Physician brain drain overblown." *Quid Novi* (newsletter) (Winter 2000).
- Canadian Institute for Health Information. *National Health Expenditure Trends, 1975-2000*. Ottawa: Canadian Institute for Health Information, 2000.
- Canadian Intergovernmental Conference Secretariat. First Ministers' Meeting Communiqué on Health, September 11, 2000. http://www.scics.gc.ca/cinfo00/800038004_e.html Accessed September 12, 2000.
- The Canadian Medical Association is very concerned about the increases in medical tuition and the prospect of deregulation. See CMA position paper, "Tuition fee escalation and deregulation in undergraduate programs in medicine." http://www.cma.ca/advocacy/tuition/position_paper.htm
- Conference of Provincial/Territorial Ministers of Health. "A Renewed Vision for Canada's Health System." Toronto: Conference of Provincial/Territorial Ministers of Health, January 1997.
- Department of Health, United Kingdom. "National Health Service Making the Change: A Strategy for the Professions in Healthcare Science." <http://www.doh.gov.uk/makingthexchange/index.htm> Accessed April 25, 2001.
- DeVoretz, D. and C. Iturralde. "Why do highly skilled Canadians stay in Canada?" *Policy Options*, Vol. 22, no. 2 (March 2001): 59-63.
- Health Canada – Terms of Reference – Canadian Nursing Advisory Committee. http://www.hc-sc.gc.ca/english/nursing/cnac_tor.htm Accessed June 23, 2001.
- Heffler, S. et al. "Health spending growth up in 1999; faster growth expected in the future." *Health Affairs*, Vol. 20, no. 2 (March/April 2001): 193-203.
- Human Resources Development Canada Studies in Progress. <http://www.hrhc-drhc.gc.ca/hrhb/hrhb/hrp-prh/ssd-des/english/projects/projects.shtml> Accessed May 1, 2001.
- McKendry, J.R. et al. "Factors influencing the emigration of physicians from Canada to the United States." *Canadian Medical Association Journal*, Vol. 154, no. 2 (January 15, 1996): 171-181.

- McKendry, R. "Physicians for Ontario: Too Many? Too Few? For 2000 and Beyond," Executive Summary, <http://www.gov.on.ca/MOH/english/pub/ministry/mckendry/mcendry.html> Accessed June 23, 2001.
- McKibbin, S. "Braindrain 'a myth': Tobin." *Ottawa Sun*, June 15, 2001: 59.
- Mullan, F. "The case for more U.S. medical students." *New England Journal of Medicine*, Vol. 343, no. 3 (July 20, 2000): 213-216.
- Organization for Economic Co-operation and Development. *Health Data 2000*. Paris: OECD, 2000.
- Prime Minister of Canada. "Prime Minister announces formation of Task Force on Modernizing Human Resources Management in the Public Service." http://pm.gc.ca/.../default.asp?Language=E8Page=newsroom8Sub:NewReleases8Doc=managementtaskforce.20010403_e.htm Accessed May 1, 2001.
- Shortt, S. *The Doctor Dilemma: Public Policy and the Changing Role of Physicians under Ontario Medicare*. Montreal and Kingston: McGill-Queen's University Press, 1999.
- Thurber, D. and L. Buske. "Interprovincial and international mobility of the 1989 cohort of physicians who exited from Canadian post-MD training programs." Vol. 33, no. 3 (AMC Forum 2000): 1-8.
- Tyrrell, L. and D. Dauphinee. *Task Force on Physician Supply in Canada*. Ottawa: Canadian Medical Forum, 1999.
- Weiner, J. "Forecasting the effects of health reform on U.S. physician workforce recruitment." *Journal of the American Medical Association*, Vol. 272, no. 3 (January 17, 1994): 222-230.
- Zhao J. D. Drew and T. Murray. "Brain drain and brain gain: the migration of knowledge workers from and to Canada." *Education Quarterly Review* (Statistics Canada Cat. no. 81-003-XIE), Vol. 6, no. 3 (May 2000): 8-44.

Brainstorming

John F. Helliwell

University of British Columbia

What Do the Numbers Mean?

People come and people go, voting with their feet as to where they will live. For reasons not yet fully understood, those born in Canada have for the past one hundred years or more moved south in numbers three times as large as those moving north. There has been a long downward trend in both flows, measured as shares of the population, with the southbound flows on a slightly steeper decline. Ross Finnie provides a careful review of the several sources of hard data on the number of people moving south in the 1990s and sketches the outlines of an emerging consensus:

- There has been some increase during the 1990s in some types of southbound migrants, especially high-income tax filers and in some relatively small but specialized occupational groups;
- Even at their highest level during the decade, the flows were small relative to earlier times;
- More controversially, but correctly, he argues that the numbers moving are so

small, and tax factors a small enough part of the migration decision, that general tax policy changes would require large expenditure reductions for each migrant fore-stalled. Indeed, he notes that for the occupation groups he regards as the most expensive and problematic to lose – doctors, nurses, university professors and other researchers – their reasons for leaving relate primarily not to high taxes but to lack of public funding for the activities they are trained to do.

I have only a small quibble about the data before turning to the broader policy issues. In general Ross Finnie adopts the fairly common view that more out-migration, especially of the highly skilled, is a bad thing. For whom? That depends on the reasons for leaving and what the alternatives were. Just to be mischievous, I could make the case that in the mid-1990s context of sharply reduced job opportunities for nurses in several provinces, especially those just getting their qualifications, it was very fortunate there was a queue of US employers waiting to hire them. Spending on health care, education and research needs to be planned with a careful eye to demographic trends and the long term. A steady hand would seem to be required. The 1990s saw quite dramatic, and generally unplanned and unpredicted, changes in employment and spending on health care, education and research. It would have been better for all if these changes had been more gradual and implemented with a focus on the longer term. But they were not, for a mixture of reasons beyond the issue at hand.

Would anyone have been better off if those denied their expected job opportunities in Canada had not been able to find employment in the booming US markets? Probably not, but if the migrants prove difficult to lure back as their skills become increasingly needed in Canada

over the next decade, the additional costs of meeting future Canadian needs can be chalked up as a charge against the lack of foresight during the 1990s. Luring the best back is likely to require some employers to reinvest in information networks with pools of non-resident Canadians. Such networking by employers was standard practice forty years ago when there were next to no graduate programs for training researchers in Canada, and almost all Canadians went abroad for their training. At that time shrewd department heads kept tabs on the talent pools of Canadians abroad and recruited them home when the time was mutually advantageous.

Much has happened in the past forty years, and Canada has moved from being heavily dependent on foreign-trained researchers (whether or not the raw material came from Canada) to being a large and internationally recognized centre for high-level graduate training and research. Lack of general awareness of the magnitude of this change is probably part of the reason why there was so little complaint during the 1990s when the funding cuts for research and teaching noted by Ross Finnie were being made. Lack of awareness of Canada's large and increasing role in employing and training researchers drawn from all over the world has also led to what I regard as a widespread misinterpretation of the brain drain data.

This brings me to the data quibble. Ross Finnie writes, "It appears that the economy is losing a significant fraction of its most highly educated graduates. Despite losing only 1.5 percent of all post-secondary graduates from the class of 1995, fully 12 percent of the doctoral graduates were living in the U.S. three years later, in 1998." He goes on to note there are some complications to the comparison, but appears to accept the notion many others accept when seeing the same numbers: these figures demonstrate that the brain drain is indeed largest and most worrying at the top of the distribution of skills and training.

But undergrads and graduate students at Canadian research universities are now as different as chalk and cheese, or eggs and aluminum. The undergrad eggs are largely Canadian in origin and generally remain Canadian residents after their undergraduate degrees. The graduate students are to a substantial extent imported bauxite converted with Canadian effort and energy into aluminum widely sold on world markets. Would a big international sale of wheat or aluminum be treated as a loss for the Canadian economy or as a comparative advantage working for the general good?

The fact that so many with Canadian post-graduate degrees take jobs in other countries has led some to suggest an exit tax to recover the taxpayer subsidy to their education. At the undergraduate level, there is a net subsidy but little subsequent migration. For some professional schools there is perhaps more of a case to be made, but higher fees for these programs have weakened the argument substantially. But for the bulk of graduate work in research disciplines, I suspect a close accounting would show that imported graduate students typically contribute much more to Canadian research and teaching than they are paid, even if they leave with their newly minted Ph.Ds in hand. They are prepared to work at such low salaries because they are acquiring marketable skills and credentials as trainee researchers and teachers. This serendipitous combination makes universities and research hospitals perhaps the best-value locations for the production of research of national and global significance.

The high proportion of foreign-source students means it is highly misleading to compare undergraduate and graduate emigration rates. In fact, some calculations suggest the numbers of departing Ph.Ds are if anything smaller than for BAs, when measured as a fraction of the numbers of Canadians entering the program. For example, examination of data for Ph.D. students at the University of British Columbia shows that fewer than half are Canadian citizens, the rest coming from

more than 100 different countries. About 15 percent of the early-1990s UBC Ph.Ds are now working in the United States. But 7 percent of the current stock of Ph.D. students came from the United States, and the number of 1990s UBC Ph.Ds still living and working in Canada is actually greater than the number who started their studies as Canadian citizens or landed immigrants. Thus, despite Canadian immigration hurdles that make it difficult for Ph.Ds with student visas to take permanent employment in Canada, the Ph.D. programs are probably a source of net population and skill gain. For the undergraduate population, there is probably still a net loss at the BA level, although subsequent training and peripatetic careers make the accounting very complex and open-ended.

The essential point to be made is twofold: the high numbers of exiting Ph.Ds reflect most of all the global reach of the recruiting for Ph.D. programs, and the high numbers of those who stay post-Ph.D. reflects the fact that people, like plants, put down roots wherever they are, but the roots are especially deep and tenacious where the soil is good.

The Brain Drain in a Larger Context

Much of the discussion about the brain drain, as Ross Finnie notes, pinpoints migrants from Canada to the United States, and the policy changes proposed are intended to lessen the individual financial gains from moving south. These usually involve making Canadian tax and transfer systems more like those in the United States and hence should be seen in the larger context of North American and international relations. I have for several years been struck by the extent to which national economies and societies retain very distinctive flavours, and the same holds true, although to a much lesser extent, among regions within a coun-

try. This means there remains much scope for citizens and communities to choose what kind of society they want to live in and to elect governments to implement their wishes. But how do citizens trade off close-knit communities, social safety nets and high incomes when choosing where to live? If Canada were to adopt US-style tax and transfer systems, and achieve equally unequal distributions of income, in contrast to its more mid-oceanic past and present, would Canadians regard themselves as well served? Or would they find their society a pale imitation of something they did not really wish to emulate in the first place?

In the hope of shedding light on these fundamental but slippery questions, I have been spending a lot of time modeling large samples of international data on subjective well-being. What the results so far show is that individuals value good health, in both themselves and their communities, trustworthiness, community and religious participation, and quality of government. They attach positive value to higher incomes, but with sharply diminishing returns, both in terms of their own incomes relative to those of their neighbours and their national average income per capita. Thus as living standards gradually rise, people place higher and higher relative values on health care, participation and trust, compared to the declining importance attached to still higher levels of material consumption. This result is well-known from psychological research; it is hence unsurprising to find it replicated in this large international sample of data from the end of the twentieth century.

What are the implications of this well-being research for the brain drain discussion or, more generally, for some of the policies that have been suggested in response? Many of the policies proposed, although not those approved by Ross Finnie, involve changes that would threaten some of the non-material aspects of well-being in order

to provide a more unequal and possibly higher average level of consumption. Many of these proposals are explicitly intended to make Canada more like the United States in terms of public spending and taxation levels and structures. The well-being results suggest these could involve lowering the standards of those aspects of life individuals regard as most important, in return for possible income increases that are of declining importance. The international evidence suggests that while material standards of life are higher in the United States than in most other countries, subjective well-being is much higher in the Scandinavian countries, in large measure because of their high levels of trust, equality and governmental performance. This research is still in its early days, but the preliminary results have at least provided me with new grounds to be both cautious and skeptical.

Canada ranks very well in the United Nations Development Programme (UNDP) measures of the quality of life. It has been correctly pointed out that Canada does so well only because income increases are given a smaller weight at higher levels of income. The new well-being results, if they should stand up to further testing, suggest the UNDP method could be extended, since subjective well-being may depend even more heavily on the structure of community life and less on increasing levels of income and consumption in the richest countries.

The Brain Drain is a Symptom of Broader Ills: Tax Policy is a Critical Part of the Cure

David Stewart-Patterson
Business Council on
National Issues

The brain drain is a real and very worrying phenomenon, and its dimensions have been well described by Ross Finnie and others. But the brain drain is not an issue that can be considered in isolation. It is, as Finnie acknowledges, a symptom of broader failings within Canada's model of economic and social development. It is therefore pointless to judge any policy prescription solely on the basis of its expected impact on this one symptom.

The brain drain symptoms themselves are fairly clear. Statistics Canada has shown quite conclusively that relatively few Canadians leave; that the outward flow to the United States is dwarfed by immigration from other countries; and that those most likely to leave are among the most talented, highly educated and best-paid members of our society.¹

The one aspect of Finnie's analysis that receives inadequate attention is the real impact of high-end flows of talent at the company level. In our new book, *Northern Edge: How Canadians Can Triumph in the Global Economy*,² Thomas d'Aquino and I look at the global strategies of dozens of major companies in this country, both Canadian-based and foreign-owned. What we

identify is less a draining of brains than a looming crisis of leadership.

As Canadian companies have grown globally, they have had to hire skill sets not present within our borders. Their experiences have been remarkably consistent across all industries. Americans with global skill sets are happy to work for a Canadian company but are highly resistant to working in Canada even when Canadian employers are willing to offset both the currency risk and the higher personal tax burden. Similarly, when Canadian companies move talented mid-career managers abroad to gain the global experience that will prepare them for top jobs at the head offices, these future leaders frequently refuse to come home. The result is that as Canada's most successful companies become global enterprises — in their operations, in their base of investors and customers and in their attitudes — they also are experiencing an outward shift in strategic decision-making functions.

A handful of such shifts have attracted public notice: the decision by NOVA Chemicals to move most of its head office functions from Calgary to Pittsburgh, for instance, and the departure for warmer and tax-friendlier climes of more than 90 percent of the top 400 executives at Nortel Networks. These companies, however, are not alone. In a 1999 survey of member chief executives of the Business Council on National Issues, 40 percent rated the probability that their own job functions would leave Canada within a decade at 50-50 or higher.

Transportation and communications technologies now give highly skilled individuals a great deal of flexibility in choosing where to live and work. The key to robust growth in incomes within a region or country therefore lies in attracting and retaining a critical mass of such individuals to build world-leading centres of expertise.

Where key people choose to live has more economic impact than either the nationality of a company's ownership or the location of legal head

offices. Consider one example described in *North-ern Edge*. Air Liquide is a French-based multinational company specializing in industrial and medical gases, with 29,000 employees spread across 125 subsidiaries in 60 countries. In 1999, it invested in two major projects in Canada, an \$85 million air separation unit in Hamilton, Ontario, and a \$150 million plant in Edmonton, Alberta. The engineering teams building these plants both reported to the same executive, a Canadian based in Houston. But the project managers for the Hamilton project were based in France and the ones for the Edmonton project in Houston. In a post-project analysis, the company discovered that the European content in the Hamilton plant was twice that of the Edmonton project. Similarly, the Edmonton plant designed by the Houston team had much greater American content. The company was based in Paris and the division responsible for both projects in Houston, but the people calling the shots on the ground continued to deal primarily with suppliers they knew and personally trusted.

The economic impact of a single individual, in short, extends well beyond the income earned and the income taxes paid, and Canada's leadership losses already are significant enough to have begun showing up statistically. In high-technology manufacturing, the share of higher-paid non-production jobs within Canada has been declining precipitously even as it remains stable in the United States. With the average non-production job (research, management, finance, marketing and so on) paying \$58,000 a year compared with \$41,300 for people doing factory assembly work, Canada's relative specialization in the production functions within high-tech manufacturing represented a payroll shortfall by 1997 of \$1.37 billion in this sector alone.³

Canada's loss of high-end skill sets to date may be concentrated in a few sectors, either because of intense competition as in high technology or because of budget pressures as in health care and

education. But the same challenge will be faced by any employer in any sector that attempts to establish global leadership. A narrow sectoral approach simply will not suffice. To address the factors driving the brain drain, Canada also must address the broader economic challenge. The two are inextricably entwined.

Finnie, however, restricts his analysis of tax changes to the impact on the brain drain alone. This leads to a claim that "even under the most wildly optimistic assumptions, the cost per brain would be high, on the order of half a million dollars, and might well be several times this amount." He concludes that tax cuts are a "non-starter" as a means of addressing the brain drain, that while there might be other reasons to cut taxes, tax policy should be formulated more or less independently of its brain drain effects.

Having thus isolated the brain drain effect from other economic impacts when considering tax policy responses, he then suggests that public spending approaches should be considered in terms of a "virtuous coincidence." He argues that raising the compensation levels of public-sector professionals such as researchers, professors, doctors and nurses would be more effective than tax cuts because such targeted spending would both stem the brain drain and serve other worthy policy goals.

Public and private sector employers alike now are competing in a continental labour market for high-end skills. Compensation in universities and hospitals must rise just as it already has risen within many private-sector employers. But money for higher pay to doctors and nurses does not increase the timeliness, comprehensiveness or quality of public health care — it only makes those individuals better off and less likely to leave. Applying Finnie's tax-cut methodology to this proposal, a general pay raise for all health-care professionals to prevent a few from leaving also would produce a very high cost per brain not drained. Perhaps the cost would not be as high as for general tax cuts, but

by not even attempting such a calculation, Finnie fails to make a valid comparison.

Either tax cuts and increased public expenditures have to be compared solely on the merits of their impact on the brain drain or they have to be compared on the basis of their overall impact on economic growth and social development. Because the brain drain is a symptom of broader problems, the latter approach is clearly preferable.

In discussing the impact of a change in tax rates, the brain drain is merely one highly visible element of the marginal economic burden. By setting aside all other impacts of taxation on economic activity, Finnie overestimates the cost of tax cuts and underestimates their benefits. The reverse is true for his analysis of approaches based on greater public spending.

On the spending side, for instance, he makes the claim that a period of reinvestment in health care would encourage innovation and structural reform. The evidence suggests that in health care, the opposite is true, that necessity rather than generosity is indeed the mother of invention. Hospitals in Winnipeg, for instance, cut almost one quarter of their acute care beds over a six-year period beginning in 1991. Yet by 1999, the Manitoba Centre for Health Policy and Evaluation concluded that there had been no impact on access to hospital care, on the quality of care, on the post-operative health of patients or on the health of the population as a whole.⁴

Similarly, Finnie makes no attempt to identify the source of funding for the increased public expenditures he proposes in health care, education and research. He makes a general statement that "the reductions in public spending necessitated by a tax-cut policy would, in addition, presumably have various emigration-increasing effects through their effects on the quality of life available in this country." But if the additional money for health care, education and research is to be raised by reallocation from existing public spending programs, presumably there would be offsetting declines in

other forms of government-driven quality of life. There might still be a net benefit in such reallocation, but he identifies no downsides.

If, on the other hand, the increased expenditures were to be funded by higher taxes, there would be both immediate reductions in private consumption and ongoing negative impacts on economic growth. Again, it is reasonable to argue that increased public investment in education or health care could be good policy, but the money has to come from somewhere. The full range of both benefits and costs must be taken into consideration in comparing alternatives.

By the same token, Finnie's analysis of the cost of tax cuts is based on a static model that does not take into account any potential behavioural responses. Reduced tax rates usually will lead to some loss of government revenue. The net loss, however, will certainly be smaller than the gross as, for instance, people spend the extra money in their pockets and generate other tax revenue in the process. This loss also will diminish over time as the lower tax burden accelerates economic growth and increases the tax base.

Furthermore, as d'Aquino and I point out in *Northern Edge*, there are ways to reduce the tax burden on the most mobile factors of production without net loss of revenue by shifting Canada's tax mix. Finnie does acknowledge that some of the tax cuts made recently (the lower capital gains inclusion rate, the improved treatment of stock options and tax-deferred rollovers of entrepreneurial investments) were effective in addressing the brain drain. Further cuts in the taxes on capital and high-income people could be achieved as part of a broad shift in the tax structure from an income toward a consumption base.

This need not be as crude as a swap involving lower personal income taxes for a higher GST (although that would be effective). Canada also could shift its personal income tax system toward a consumption base without giving up a progres-

sive rate structure. For instance, it could expand RRSP limits or introduce a second tier of tax-prepaid retirement or education savings plans, in which contributions are not deductible but income accumulates and can be withdrawn tax free. The result would be an income tax levied less on what people earned than on how much of their earnings they chose to spend. Shifting toward a consumption base might seem unfair because lower-income families are less able to save, but is it better for the country to tax someone for earning a million dollars — or for living like a millionaire?

Next, consider the quote from Peter Gzowski with which Finnie begins his paper, raising the question of whether the "push" of higher taxes is more or less significant than the "pull" of more opportunities elsewhere. Again, the evidence on the brain drain suggests strongly that high personal taxes are not the primary reason people leave the country. But if higher compensation and more exciting opportunities are the primary forces driving the brain drain, why is it that Canadian companies are not creating more world-leading opportunities within Canada, and why is it that their American competitors can afford to pay employees so much more and yet remain more profitable?

Some commentators have suggested that the problem lies in pervasive bad management. But Canada produces plenty of talented people, so if all the good managers have left, the brain drain must be even worse than the statistics suggest. A more plausible villain is a tax structure that reduces the rewards for risk-taking at the corporate as well as personal levels.

Taxes on corporate income have a much higher marginal economic burden than taxes on personal income or on consumption. By one estimate, an extra dollar of corporate income tax cuts output by more than two and a half times as much as a dollar of personal income tax and nine times as much as a dollar of sales tax.⁵ This suggests that aggressive reduction of corporate income tax rates

— by attracting greater investment and "pulling" more Canadians into leading-edge opportunities within our borders — would be more effective in reducing the brain drain and at far lower cost than cutting personal income tax rates. Finnie's failure to consider tax options other than broadly based personal income tax cuts is a serious omission.

In summary, the paper as a whole suffers on three counts. First, one cannot argue in favour of public spending policies to address the brain drain on the basis of their synergies with other public goals while dismissing tax approaches on the basis that synergies should not be considered. Second, one cannot properly compare targeted tax or spending approaches to the brain drain without considering their total effect on both current behaviour and the dynamics of growth. Third, one cannot dismiss tax policy as a response without considering the full range of tax instruments available, and in particular the potential for structural changes in the tax mix that could help to address the brain drain with little or no reduction in overall government revenue.

The optimal approach, as d'Aquino and I suggest in *Northern Edge*, is multi-faceted. Yes, Canada's public sector must follow its private sector in boosting compensation for highly skilled people who now operate in a continental labour market. Yes, there is a need for greater public investment in research. However, increased public investment in priorities with net benefits to growth must be coupled with greater innovation in the delivery of all public services and with reallocation of funding from programs that have proven to be less effective. And on tax policy, it is critical to ensure that Canada's overall tax structure, not just its personal income tax system, is geared to enhancing the competitiveness of Canadian enterprises in the global market. In dismissing tax policy as a means of addressing the brain drain, Finnie distracts from the urgent challenge of curing the underlying ills.

Notes

- 1 Zhao, Drew and Murray (2000).
- 2 d'Aquino and Stewart-Patterson (2001).
- 3 Schwanen (2000).
- 4 Brownell, Roos and Burchill (1999).
- 5 Organization for Economic Co-operation and Development (1997).

References

- Brownell, Marni, Noralou P. Roos and Charles Burchill. "Monitoring the Winnipeg Hospital System: 1990-91 Through 1996-97." Winnipeg: Manitoba Centre for Health Policy and Evaluation, February 1999.
- d'Aquino, Thomas and David Stewart-Patterson. *Northern Edge: How Canadians Can Triumph in the Global Economy*. Toronto: Stoddart, 2001.
- Organization for Economic Co-operation and Development. *OECD Economic Surveys, Canada 1997*. Paris: OECD, November 1997.
- Schwanen, Daniel. "Putting the Brain Drain in Context: Canada and the Global Competition for Scientists and Engineers." C.D. Howe Institute, *Commentary* no. 141 (April 2000).
- Zhao, John, Doug Drew and T. Scott Murray. "Brain Drain and Brain Gain: The Migration of Knowledge Workers from and to Canada." *Statistics Canada Education Quarterly Review*, Vol. 6, no. 3 (May 2000).

Minding the Brain Drain

Daniel Schwanen
IRPP

As Ross Finnie points out, there exists a relatively straightforward way for governments to induce any given group of people to stay in Canada. It consists in paying members of that particular group more money, or to offer it, out of the public purse, more jobs, improved working conditions or lower taxes. It is not an exaggeration to say this is how Finnie recommends that Canada attempt to stem the loss of some of its top talent to the United States.

The logic of Finnie's proposal for stemming the brain drain, relative to a strategy of generalized tax cuts, is in many ways compelling. Why offer tax cuts to all – an expensive proposition in terms of forgone increases in public expenditures or debt reduction – when higher wages, or perhaps a tax holiday for some, will do the trick? Such an approach was recently adopted, for instance, by the Quebec government, in a bid to encourage university professors who had already left to return home.

Finnie explains that the outflow of Canadians, or at least that part of it we should worry about, has been particularly evident in a number of sectors characterized in recent years by either public sector cutbacks, strong demand for talented individuals in the United States, or both. Furthermore, he

shows that we should be concerned about the percentage of “leavers” who are among the best in their respective fields. He concludes from this that we should, first, restore funding in the affected public services and, second, encourage higher after-tax remuneration in both the public and private sectors for “star” performers, relative to others.

I agree with Finnie when he emphasizes that the brain drain is a symptom of deeper problems, and that the use of any blunt instrument with only a tangential relationship to the root cause of the problem risks doing more harm than good. And, of course, paying more money to our top talents will certainly encourage them to remain in Canada. But we must go deeper than this truism in order to address the brain drain.

There is no doubt that a blinkered vision of human resources needs in the broad public sector, fed in part by unstable funding, caused the departure of talented individuals from Canada in the 1990s. These talents, as well as others in the private sector, were highly sought after and were offered attractive working conditions south of the border. Ensuring better conditions to talented individuals must be part of any Canadian strategy to lure them back or prevent them from leaving in the first place, a strategy that at first is likely to entail some costs to the public purse.

This being said, I think Finnie exaggerates the extent to which more public spending will alleviate the brain drain, and underestimates the contribution reduced taxes can make toward solving the problem and preventing its recurrence.

Finnie states that Canadians would get a better deal by paying more taxes (or forgoing tax cuts) in order for funding to be increased in areas where the level and quality of services is affected by the brain drain. He stresses that such spending may bring both the level and quality of social services back up to levels desired by the public, as well as social benefits over and above those arising from

the direct cost involved. These benefits may include greater equality of access to services, benefits flowing from scientific research or spin-offs from high-tech activities.

Finnie goes further: he considers tax cuts a harbinger of a future brain drain. Tax cuts, he says, will undermine “Canada as we know it,” a country where the main reason for an individual staying seems to be the public services to which he or she has access. Thus, if past cutbacks are not restored, it is not only highly talented individuals in the public sector who will leave, but also others who have come to value good public services. Talented people will be fed up, not because of high taxes, but because they will not receive good public services.

But it is worth asking for whom this calculation is likely to hold. It is generally accepted that individuals’ perceived net fiscal benefits (NFBs) — the difference in value between taxes paid and public services received — are important when determining whether they will stay in or leave a given jurisdiction. It is reasonable to expect the attraction of leaving to be strongest for those who face a large positive difference between their expected future private incomes, working conditions and net fiscal benefits in the United States relative to staying in Canada.

Let us assume a reinvestment in health and education improves the NFBs of the average Canadian, and the brain drain will be stemmed in areas where reinvestment occurs. That calculation, however, may or may not hold for most high-income earners, who will certainly pay for a very large proportion of that reinvestment. They may feel they are being asked to shoulder an additional burden not commensurate with the improvement in the services they receive and with any psychological benefits they may derive from knowing that service has improved for the average Canadian. The point is that calculations based on the improvements in the average Canadian’s situation may not have much bearing on future trends in the brain drain,

and that plugging one hole in the dike does not mean an equilibrium situation has been reached which would prevent further losses elsewhere.

There are, of course, ways of improving everyone’s NFBs through systemic innovations that would allow health and education systems, among others, to better respond to both the public’s preferences and to workers’ market value. Understandably, Finnie only touches upon these questions, which open up an entirely new field of inquiry. Nevertheless, such changes must be an integral part of any long-term solution, a point to which I return below.

Furthermore, Canadians’ views of where their opportunities lie clearly depend not only on receiving excellent public services for the taxes paid, but also on the ability to tap into and enjoy private opportunities. In that light, Finnie gives short shrift to the tax-cutting option by not discussing any of its virtues, the way he discusses the virtues of reinvestments in public services above and beyond their impact on the brain drain.

After all, since the 2000 budget, the improved fiscal situation of the federal government has allowed for reinvestments in social transfers to the provinces *and* tax cuts, both of a far greater magnitude than any numerical scenarios envisaged by Finnie in his analysis. Both will no doubt save “brains” but otherwise would appear excessively expensive on a per-brain-saved basis. But, of course, both were taken because of their perceived wider benefits. Finnie discusses these wider benefits with respect to reinvestment in social services, but not with respect to tax reductions. In that light, it would have been interesting to consider whether the tax reductions could have been better targeted, within the envelope already allotted them, toward high-income individuals most susceptible to becoming casualties of the brain drain.

More generally, I think a flaw in Finnie’s proposal *as a brain drain strategy* stems from its focus on the brain drain as a phenomenon centered on

particular occupations in which a problem has occurred in the recent past. In essence, it proposes that Canada adopt a reactive strategy, with few considerations given to how similar problems can be avoided in the future. Tomorrow, there may be a glut of high-tech workers favored by Finnie's proposals, while we may face shortages in other categories, such as high-school teachers or designers. Who knows? If the message is that Canadians must become successful in the United States before they can be lured back home in desperation with a package commensurate with their talent, Canada will always be a country of second movers and, ultimately, will continue to fall behind in average standards of living, including the quality and availability of public services. We should not forget that, in spite of a lower level of public spending relative to GDP, the United States can in fact offer attractive NFBs to Canadians who move there because it is a wealthier country.

As a related issue, we may ask whether — simply on account of their options abroad — giving increased public funding and tax privileges to individuals who are for the most part relatively well-off is compatible with the Canadian values defended by Ross Finnie. If we give tax breaks only to those who have demonstrated they have options abroad, what does this say about the nature of Canada? What does this say about the value we put on the contributions of those who simply decide to stay? The reality may be that the more artificially compressed Canada's after-tax wage structure is, the worse our talent loss will be whenever a demand for it emerges in freer markets. There already are signs that Canada is specializing in production work and "middle management" within a North American framework, commensurate with the pay scale available here.

But if we are to accept inequality in after-tax incomes in Canada as a condition for retaining our top talents, as Finnie suggests we do in at least some areas, then one solution may be to give more

room to the marketplace, rather than government, when deciding who to favour with higher pay and tax breaks, and who not to. The state, as noted, has done a poor job of managing human resources. It might be best, from both an efficiency and an equity standpoint, to let governments act as purchasers of services and as setters of standards on behalf of the public and, to the extent possible, let more decentralized decision-making determine the "stars" who will receive the private benefits commensurate with their talents.

The debate about the brain drain, then, simply becomes a debate about how best to use public funds, and to what extent the public sector should be involved in directing resources in this country. Ultimately, the best guarantee that the brain drain will not continue to be a problem would be to have a prosperous economy, including clusters of head offices and top research facilities of which, in an integrated North American market, there is no reason why Canada should not have its share. Finnie's solution of reinvesting in public services has merit. But it is now being tried, and in my view will prove to be only a partial solution to Canada's brain drain challenge.

Rebuttal: Clarifications, Responses and Closing Remarks

Ross Finnie

Peter Kuhn's departure from Canada nicely represents the reason I became interested in writing about the brain drain: here is an individual of considerable talent and energy who left the country in response to an attractive job offer in the U.S.; there is room for efficient and effective government measures to do something about such movements; and the tax-cutting lobby is in rhetoric-overdrive in opportunistically hitching its horse to these exits. As a "drained brain" (at least in terms of having left the country!) and as an economist, Kuhn's views are worth listening to.

In discussing why Canadian academics leave the country, Kuhn has — notably — relatively little to say about tax rates. He discusses, instead, how excellence could be better rewarded in this country and how the quality of publicly provided goods should be boosted, education being the particular example he focuses on. He offers some specific policy suggestions, but also speaks of the broader need to change "organizational culture...away from an emphasis on equality and bureaucracy and toward excellence and adaptability."

More specifically, Kuhn offers three concrete measures to keep more of our best and brightest

scholars at home, which I would say fall under the third policy principle elucidated in my own text. They are: 1) "increase the proportion of salary going to merit- and market-based pay," 2) "allow salary differentials across fields of study to reflect differences in demand," and 3) have "Granting agencies such as the Social Sciences and Humanities Research Council of Canada...start paying summer salary to their most highly-ranked applicants." These are concrete and relatively practical measures which could be put in place in relatively short order and would surely help reduce the loss of top scholars to the U.S.

Let me expand on Kuhn's ideas by reflecting on the barriers that appear to stand in the way of implementing such initiatives or others like them. First, there is the matter of money. Although these measures would not cost a great deal — precisely because of their narrow and efficient targeting — they would require a change in how certain existing monies are being spent (especially in the case of the salary differentials by field) plus some increases in funding at, presumably, both the provincial and federal levels.¹ At this level, the problem is nothing more than a matter of political will.

On another level, however, are the related "cultural" issues. The required attitudinal changes would have to occur not only, as Kuhn mentions, within our universities, but also presumably at the larger societal level in the form of public support for the suggested policy measures. In both instances, we would have to see greater acceptance of the principles of rewarding excellence and the need to pay more attention to market values. This would mean, more concretely, paying productive professors more than those with less talent or energy, paying those in high-salary fields more than those where pay is generally lower, and so on.

In short, we face a clear policy/political choice: reward our top-flight academics with higher salaries, more research support and other benefits

and privileges, or see a significant number of them go south. It is a cliché that Canadians are uncomfortable with excellence and its recognition (including the associated salary scales), but perhaps our wish to reduce the loss of our best and brightest academics to the U.S. could be a catalyst for the sorts of attitudinal changes that could ultimately have benefits beyond the immediate issue at hand.

Passing now to the issue of publicly provided goods and services, I would quibble with Kuhn's statements that wealthier Americans can essentially buy their way (on private markets) to a lifestyle that does not depend on the range of social programs upon which we generally pride ourselves here in Canada (for reasons I discuss in my text as well as the accompanying box), but his judgement that the *public* education system in California (his new home) is superior to what he had in Canada represents an important wake-up call.

I think it is safe to say Canadians often simply *presume* the publicly provided education and health systems (and other social programs) in this country are better than those offered in the U.S., this presumed superiority representing a principal reason Canadians are willing to accept higher taxes. But here we are told (and not for the first time) that one key pillar of this system might actually be inferior to that of our southern neighbour (at least in one jurisdiction, California, albeit one that it is probably not typical). Tax-cutters would have us — of necessity — go further in this direction (i.e., reduced quality), due to the consequent reductions in government revenue. The other option is to re-invest and institute reforms, including (as I am sure Kuhn would agree) rewarding excellence and accepting the reality of market-determined prices (salaries), in order to build a superior public education system in this country. This should be done for its own sake, and doing so would — as Kuhn implicitly suggests — also help stem the brain drain.

So, we can continue to offer meagre support for our post-secondary system as a whole, and our top

Box 1 What Do Those Higher US Incomes Mean?

Since we are in the realm of "case studies," which provide a segue to personal experience and anecdote, I am reminded of a post-seminar dinner with a highly paid American academic. Much of the talk was of those high American salaries (in *American dollars!*) and the lower tax rates which often look so enticing. At one point, I asked this individual what he and his fellow "stars" were doing with all this money. "Paying for our children's education!" he responded. At which point he listed the prices of a year of college at a top-level US college or university (in the realm of \$25,000 or \$30,000) while also mentioning the fees of private institutions at the secondary and even primary levels. I could not resist noting that these prices were in *American dollars* (!) and that the amounts surely required a good deal of gross income even at favourable tax rates. The point here is that Canada-US net salary comparisons remain challenging in the face of all the other differences associated with living in one country versus the other, which are ultimately related to the differences in tax rates and government activity. Simply noting that one can purchase health care on the private market (or, more commonly, simply have it provided by an employer) and other such specific comparisons typically leave out many important items, including those relating to the broad safety net or insurance aspects of our system, as well as the satisfaction which many feel by simply being part of a more just society.

scholars in particular, and maintain some sort of sophomoric notion of "equity" by which everyone is paid the same — even as talents and efforts diverge and the market tells us that individuals with one kind of training should be paid more than another — and watch our best and brightest leave, or spend greater sums on our better talents in the most efficient and appropriate manner and have them flourish here at home. And we can choose to cut taxes and attempt to compete with the Americans on that level, and allow the quality of our education system and other social programs to suffer, or reinvest in

what makes Canada a good place to live. The choices are relatively clear, and ours to make.

I find the remarks of Peter Barrett, president of the Canadian Medical Association, interesting for a number of reasons. First, like Peter Kuhn, the issue of general income tax cuts is given short shrift. Based on various surveys and other information sources, this country's higher tax rates are apparently *not* what is driving doctors south. Furthermore, he would "not challenge Finnie's calculations that show that a general tax cut would prove to be very costly on a per-professional-retained basis."

Second, while one might have expected the president of the nation's doctors' professional association to use every opportunity to argue for higher wages for those he represents (although the CMA is not directly involved in fee-setting negotiations, which occur at the provincial level), neither is this the main thrust of Barrett's comments. Instead, he takes the much more interesting, and higher, ground of arguing for initiatives that would essentially allow doctors to do a better job of practicing medicine and provide better care for Canadians.

Barrett identifies, for example, the need for more of the sophisticated equipment which Canada seems to badly lack (judging by the international comparisons he and others have offered), more hospital beds, better access to specialists, and so on. *This*, he argues, is what will keep doctors happier in their jobs and at home, not higher pay scales. In short, Doctor Barrett supports my second policy principle in spades: fix the health system, which Canadians seem to want without regard to the brain drain problem *per se*, and the problematic outflows will significantly diminish.

Finally, even the three policy principles items Barrett suggests (those measures that would make practicing medicine in Canada more rewarding) are muted, seemingly reasonable, and even honourable.² There is, specifically, no general call for increases in physicians' pay scales (although one can probably assume this is an important item

when the CMA's provincial counterparts sit down with the authorities who set those schedules). Instead, he suggests that any such specific measures "should be designed so as not to create inequity and destabilization among the pool of physicians practicing in Canada," "should be implemented...based on the need for medical services" and "should be time-limited to a sufficient period for a physician to establish familiarity and attachment to his or her professional and personal milieu." He then suggests a couple of specific initiatives which might be used to help physicians in the early stages of their career and to try to attract back some of the many thousands of doctors who have been lured to the U.S.

And all this after stating that "Finnie's second principle (i.e., addressing systemic conditions) is where the greatest payoff will occur over the longer term." So, money in the way of fee increases and so on is far from being the name of the brain drain solution, taxes are barely in the room in this discussion, and it is improving the quality of our health system where we should be placing our greatest efforts. Coming from the person who represents the great majority of physicians currently practicing in this country, we would do well to pay attention to Peter Barrett's message and think of our policy options accordingly.

John Helliwell and I seem to agree on almost everything. The overall rates of outflow are at historical lows, although there has been an increase in the 1990s, especially among "high end" emigrants; "general tax policy changes would require large expenditure reductions for each immigrant forestalled"; and many of the more problematic outflows in the areas of health care, education and research appear to be the direct result of government short-mindedness (at least in terms of the resulting losses of these skilled and important knowledge workers).

Helliwell also dwells, very usefully, on the outflows of recent university graduates, especially

those with post-graduate degrees. He interprets these movements in the context of the significant increases in the size and quality of graduate programs offered in this country over the last decades, the substantial flow of students from other countries into these programs and the globalization of the market for such graduates. He sees, from this perspective, little to worry about in the recently documented outflows: Canada is a world player in graduate level education and the flows only demonstrate the quality of our programs and the graduates they produce.

I would agree in part with this assessment. But here I would remain a tad more reserved in my judgements and associated sanguinity as to what these flows mean, especially in a context where we don't know how these trends compare with those in the past (due to the lack of historical data), or the more detailed characteristics of those who are leaving, or where these individuals are going or why.

After all, wouldn't it be nice (a sign of a national economy making good use of this cream of its skills crop and evidence of the rewarding careers to be made "at home") if more of these top graduates had been finding meaningful employment here in Canada? And shouldn't we be at least a little concerned at a time when our post-secondary sector has been suffering (as discussed in the text) and losing some of its top scholars for the reasons discussed by Peter Kuhn among others?

That quibble noted, Helliwell's work on subjective well-being is, as usual for this scholar, as intriguing as it is important. He reports findings which indicate that "as living standards rise, people place higher and higher relative values on health care, participation and trust, compared to the declining importance of material consumption," whereas many common brain drain proposals, such as general tax cuts, "are explicitly intended to make Canada more like the United States in terms of public spending and taxation levels and structures...[which] could involve low-

ering the standards of those aspects of life that individuals regard as most important, in return for possible income increases that are of declining importance." Ask most Canadians if they would rather have their country become more like the U.S. or Sweden, and I suspect most would choose Sweden — so why do we focus on being more like the U.S. in order to stem the brain drain?

David Stewart-Patterson and I, in contrast, perhaps need to better identify where we agree, where we don't, and why.

First, let's start with the agreements. We are apparently largely in accord regarding the size and nature of the brain drain: it's basically about a relatively few good people moving to the U.S. I am, furthermore, fully in agreement with him regarding the need for intelligent tax reform, and much along the lines of what he suggests, favouring, for example, consumption taxes over income taxes (yes, crank up the GST!), the lowering of corporate taxes due to the high mobility of that factor, and so on. He, in turn, appears to agree with my position that making working here in Canada more rewarding for certain emigration-sensitive occupations (e.g., doctors and other health-care workers) could be an effective means of keeping these internationally mobile workers at home in the face of a globally hot labour market. We also seem to agree that broader policy measures which might also have an effect on the brain drain need to be judged on commensurately wider "first effect" grounds and (if I might put it this way) have their brain drain effects considered as a desirable side effect rather than *the* policy effect. I also find his discussion of the importance of where executives locate in terms of the outsourcing of related work interesting and pertinent.

So, where do we disagree? Well, my paper is about the brain drain, whereas he seems to want to focus on taxes and government spending levels, which I would call a typical strategy for the tax-cut lobby. In this context, I first challenged the legitimacy of discussing general income tax reductions as "brain

drain policy” on the grounds that the brain drain effects should really be considered as secondary to all the other impacts of any significant shift in the tax system, a point with which Stewart-Patterson seems to agree. But I then attempted to meet the tax-cut advocates on their own turf (“taxes should be cut to stop the brain drain”) by roughly costing various general income tax reductions in terms of their possible brain drain effects. These calculations made such measures seem pricey, or perhaps — even better — only made it clear that tax policy should indeed be judged on its own merits, with any associated brain drain effects considered as (relatively) secondary in importance.

This discussion of taxes, however, gave Stewart-Patterson his opening to focus on tax policy more broadly — and discuss all the reasons he thinks the tax system ought to be changed — rather than the brain drain per se. With respect, I consider this to be a different topic — indeed a point I have tried to make very clear in my paper.

Furthermore, Stewart-Patterson suggests that I should have made calculations of the cost “per brain saved” of reinvestments in, for example, the health or education systems or the nation’s R&D capacity. But I have made clear why, from the point of view of my second principle of focusing on broad sectoral policies, no such calculations were appropriate. It seems necessary for me to repeat here that such measures should first be judged on wider terms, with any brain drain effects then taken as welcomed side effects.

As for my third principle, more directed measures, these should indeed be costed because their primary purpose is, by definition, to reduce the brain drain, and this I did for the semi-hypothetical case of supporting university research chairs. So, I’ve got my comparisons straight; I fear that Stewart-Patterson does not.

At the risk of straying somewhat off-focus, Stewart-Patterson and I might also differ over some of the effects of government cutbacks. I did *not* say,

“re-investment in health care would [necessarily] encourage innovation and structural reform.” In fact, I point to the *need* for serious reform in these sectors.³ I believe, however, that a buoyant fiscal environment can sometimes result in more useful reform than a harsher one, and certainly do not generally share his view that “in health care... necessity rather than generosity is indeed the mother of invention.”

In conclusion, Stewart-Patterson wants to talk mostly about how we should have lower and different taxes and less government spending and asserts that such changes would have positive brain drain effects. I don’t think lower taxes (and reduced spending) are necessarily what Canadians want or are otherwise desirable, nor am I convinced that such changes would necessarily reduce the departure of our best and brightest, in both cases for the reasons discussed in my text (and further developed in the context of John Helliwell’s comments in the case of the latter). I heartily agree, however, that Canada should continue toward developing a better tax *structure*, and largely along the lines indicated by Stewart-Patterson, and should institute reforms — possibly quite radical — of its principal social institutions, including health care. But I want to keep this discussion on its intended brain drain track and thus leave the Stewart-Patterson comment on that point.

Daniel Schwanen provides a rather nice summary of what I have said, including noting where we agree (which appears to be most of the time), where we disagree (including a few important points), and why. And it’s wrong on just a few points. Unfortunately, one of those is in the first paragraph, where he says, “...paying members of this particular group [the brain drainers] more money, or to offer it, out of the public purse, more jobs, improved working conditions, or lower taxes.... It is not an exaggeration to say that this is how Finnie recommends that Canada attempt to stem the loss of its top talent to the United States.” This is incorrect.

The problem is that Schwanen misses the *structure* of my second and third policy principles. To reiterate, I suggest that we should deal with the brain drain by first identifying the problem sectors (my first principle) and then restoring, reforming and generally revitalizing them (health, education, R&D) to the degree such changes are desirable for their own sake, and effecting general tax reforms (e.g., getting the taxation of capital right and – now I would add – shifting more of the personal tax burden from income to consumption, along the lines suggested by Stewart-Patterson), for similarly broad reasons (my second principle), and then see what brain drain remains. To the degree that the problem persists and is perceived to be significantly driven by salaries and working conditions in Canada lagging significantly behind those offered elsewhere, we might *then – only then –* pursue the sort of more individual-level initiatives Schwanen lists above (my third principle). So, the “paying more” strategy Schwanen cites is only one part of a more general approach, and a secondary part at that. (Practically speaking, the salary responses might be initiated concurrently with the sector-wide measures, or even precede them if it is thought that such actions will in fact be required or help us out of a brain drain hole in the short-run, but they certainly come “after” in a conceptual sense.) And all this is offered in opposition to, in particular, a rush to cut personal income taxes across the board as “the brain drain solution.”

Schwanen also suggests that an obvious social democrat type like myself (I admit it) should be uncomfortable with the preferential treatments (and outcomes) which would be associated with such a set of salary-raising (and related) initiatives, especially as those advantages would be concentrated among certain groups of already rather favoured workers (doctors, university professors, high-tech specialists). Well, I’m not *that* kind of social democrat. *Inequalities* are not nec-

essarily *inequities*, and in any case are, as here, sometimes necessary for other reasons. I see, in particular, the need to accept the reality of a situation where the outside salary opportunities of brain drain workers are typically set in relatively competitive global markets and where we must therefore either choose to compete at that level or accept the loss of a significant pool of these workers abroad. Peter Kuhn focused on the need to pay our best academics – who are hardly an impoverished group in the current situation – higher salaries on such grounds, and I agreed, and I see the same need elsewhere. No problem. They’re just markets. The underlying principle is that we need to pay market prices to get the workers we want.

That said, I think (and the available empirical evidence supports me here) that we don’t need to match foreign job offers dollar for dollar to forestall most potential departures. Indeed, far from it, for three main reasons. First, all other things held constant, people prefer to stay at home (about which John Helliwell has written a great deal). Second, our higher taxes buy various goods and services that individuals have to pay for in the U.S. (health care and education being two important examples), so lower post-tax incomes can still result in more truly disposable income. Finally, and related to the preceding point, Canada is simply a better place to live, an obviously sweeping judgement which I merely assert here, but one with which I think most Canadians would agree (and one which is consistent with John Helliwell’s preceding commentary), meaning that Canadian post-tax incomes can be lower than those in the U.S. and still leave people better off here.

All this means we can probably keep most of our doctors, academics and other highly skilled and talented workers in this country with take-home pay levels significantly below those offered in the U.S. It is only when Canadian pay packages and working conditions get *too* out of line that people begin

to leave in significant numbers. Our pay-tax-benefit-working conditions strategy needs to be formulated in this perspective and, as much as possible, based on as much empirical evidence as is available on these relationships. In practice, though, any increase in the number of departures for the U.S. (as we have seen in the identified problem sectors) will be the best indicator that working in Canada has become significantly less attractive than working in the U.S. and that some correction is required.

As for Schwanen's point about "NFBs" – net fiscal benefits (in effect defined as net incomes taking into account the public provision of goods and services) – being generally higher in the U.S. for high earners (if not for more average or lower income earners), this is a common and important point of debate in the brain drain literature which is worth addressing again. I have explained in the preceding paragraph and elsewhere in this publication the reasons why I think such calculations are often difficult to make correctly, including, for example, the relevant "psychological benefits" of living in this country (as Schwanen fairly refers to them and which Helliwell argues are become increasingly important in general and *especially* as incomes rise).

But suppose we assume for the moment that after the (correct) calculations are all made, Schwanen's hypothesis is true and the higher incomes and lower taxes offered in the U.S. cause a steady outflow of high-income Canadians to that country. Should we necessarily bring our own tax rates, and government spending patterns, into line with theirs as a result?

The tax-cutting camp usually take this position, often arguing that we have in fact little choice in this regard and must meet U.S. tax rates (at least on mobile factors, including highly skilled labour) or face further outflows, stunted economic growth and, ultimately, a declining standard of living, including those cherished social programs we might be trying to protect with a higher tax structure.

I am, in this context, reminded of my years spent in Wisconsin while in graduate school in the 1980s. At that time, the northern and central states faced the choice of lowering their taxes and cutting government services as a means of competing for jobs and future economic growth with the southern and western states, which were generally characterized by such low-tax, low-benefit environments and thought to represent the path to the future. A similar "inevitability" to that which we now hear from Canadian tax cutters was a common theme of these discussions. In the end, though, the higher-tax, higher-benefit states prospered, especially in the "New Economy" with its dependence on skills and knowledge workers, and largely due to their choices in this regard. For example, their jurisdictions generally provide better public education and thus meet employers' growing desires for the sort of well-trained labour forces that a bargain basement education system will not provide.

We face similar choices in Canada. Some talented individuals will indeed leave in search of the higher salaries and lower taxes they can find south of the border. And we don't, to be sure, want to ignore these outflows or assume that any system of higher taxes and more government spending somehow automatically assures our future economic prosperity, because of course it won't. Tax money wisely spent will, however, often make for the sort of social programs we want for reasons related to equity and opportunity. Such wise spending will also make for a more productive work force and, consequently, a more dynamic economy. Education and health care are two good cases in point. But even basic income support programs such as social assistance, and the relief from the desperate kind of poverty they prevent can enhance the nation's productivity. There are, for example, currently more than two million Americans in jail; they represent not only a terrible human waste and an enormous direct fiscal drain, but also a very large

pool of unproductive workers. There exist, in short, various ways to structure an economy and for nations to compete in global markets, and the U.S. is but one model in this regard — and not necessarily the one we should emulate even on narrow economic grounds.

Finally, Schwanen sees my sectoral approach as “a reactive strategy, with few considerations as to how similar problems can be avoided in the future.” He further argues that in the face of governments having “done a poor job of managing human resources” in the past, one solution may be to “give more room to the marketplace, rather than government deciding who to favour with higher pay and tax breaks, and who not to.”

Rather than being backward-looking, I see my suggestions for the health, education, and R&D/high-tech sectors (in particular) as a means of getting some extremely important rooms of our collective house in order, thus generating significant benefits at many levels well into the future, including a reduced brain drain among certain key groups of knowledge workers who are likely to be important for many years to come. My support for tax reform is similarly general and thus forward-looking. Only in my third principle measures does one find any favouritism for particular groups of workers, and I would simply agree with Schwanen that this should be done carefully for precisely the reasons he gives.

In closing, I’ve probably said more than enough about what I think the brain drain is and what we should and should not do about it. In my final words, though, I want to pick up on the quote given at the beginning of the paper, in particular the search for “serious proposals about changing both the push and pull without changing the nature of Canada.”

This is the key. The brain drain is a problem, and an important one. But we shouldn’t — and don’t need to — let the departure of a few thousand people per year, no matter how talented they are, drive

larger policy changes we wouldn’t otherwise want. We shouldn’t, in particular, let the problem push us — “inevitably” — to be more like the U.S., with its lower taxes and fewer and poorer social programs, because (as my cost estimates show) such an approach wouldn’t make sense as brain drain policy *per se*; because there are alternative policy measures for dealing with the problem; and because there are different ways to structure a society, and an economy, including perhaps less dependence on those at the very top, than hold in the U.S.

But neither should we be complacent and simply shrug that this is Canada — we are what we are, we are in fact a better country than the U.S. (recalling that famous UN poll on quality of life which continually finds us at or near the top), we don’t want to be like them — and then walk away from the problem.

So, yes, we should, for example, probably re-invest in our education and health systems, because the cuts that occurred there gave us not only lower quality programs than we apparently wanted, but also contributed mightily to the brain drain, and reversing those cuts should help stem the latter — but let’s *fix* these sectors too (maybe this above all!). We should, therefore, move to reform the health system in the ways hinted at by Peter Barrett. We should institute the sorts of structural reforms suggested by Peter Kuhn for the academic sector, including pay structures and research opportunities based on merit and market prices. We should move toward a more efficient tax system much in the way outlined by David Stewart-Patterson. We should allow for the greater role of the market, which Daniel Schwanen prefers.

We should fix what needs to be fixed for the sake of the brain drain and for the broader benefits which would result. In this way we would make Canada stronger economically and a better place to live — for all those who choose to make it their home.

Notes

- 1 The provinces could put more into their education budgets, while the federal government could increase their transfers to the provinces to help them institute the suggested changes and increase the budgets of the federal granting agencies, such as SSHRC (which Peter mentions).
- 2 The statistic that only 44.5 percent of Canadian physicians are somewhat or very satisfied with their remuneration, versus 84.2 percent in the U.S., does enter one of the tables Barrett shows, but is not discussed in the text.
- 3 From my text: "Money should not, however, simply be poured willy-nilly into the problem sectors or toward the specific workers in question and we should be especially aware of self-interested persons and representative bodies calling for this sort of thing. These sectors are generally protected from market competition and thus risk becoming inefficient in ways they should and need not. The brain drain problem can, therefore, not only flag both the insufficient financial support which recently has characterized these sectors and the need to meet especially hot labour market competition for certain groups of workers, but also point to where changes in the existing systems are needed...In this way, the brain drain could be a very positive force for change, perhaps of a relatively fundamental nature in at least some cases, and a good signal of the need for thinking outside the box."

IRPP Research Staff
Hugh Segal (president)
Sarah Fortin
Paul Howe
France St-Hilaire
Daniel Schwanen
Carole Vincent

Vice-President, Operations
Suzanne Ostiguy McIntyre

Production
Chantal Létourneau

Design
Schumacher Design

Printing
?????

IRPP
1470 Peel Street, Suite 200
Montreal, Québec H3A 1T1
Telephone: 514-985-2461
Fax: 514-985-2559
E-mail: irpp@irpp.org
Web site: www.irpp.org

Résumé

The Brain Drain : Myth and Reality What It Is and What Should be Done

Ross Finnie

Ross Finnie établit dans cette étude les fondements empiriques d'un débat sur les causes et l'ampleur de l'exode des cerveaux au Canada. Il démontre ainsi que les départs sont peu nombreux mais qu'ils concernent de façon disproportionnée les travailleurs du savoir et les gros contribuables, deux groupes indispensables à notre croissance économique et à la prestation des services publics auxquels les Canadiens sont habitués.

L'auteur en conclut que nos décideurs devraient élaborer des solutions axées sur les segments pertinents de la population. Ils pourraient s'attaquer aux difficultés sous-jacentes des secteurs touchés, notamment ceux des soins de santé et de l'éducation supérieure, et de certaines activités de haute technologie. On devrait aussi prévoir des mesures incitatives — meilleurs salaires pour les « vedettes » dans leurs domaines respectifs et avantages fiscaux pour les preneurs de risques — destinées aux travailleurs d'élite.

Ross Finnie privilégie ce genre d'initiatives mesurées plutôt que des moyens plus diffus préconisés par certains, en particulier les réductions globales d'impôt sur le revenu. Selon ses calculs, il faudrait en effet consentir une somme prohibitive à des réductions suffisamment avantageuses pour maintenir au pays un nombre significatif de talents. Cela parce qu'il faudrait accorder ces réductions à d'importants segments de la population dont la vaste majorité serait de toute façon restée au pays. En revanche, estime l'auteur, on retiendrait les talents visés en réinvestissant dans les équipements médicaux, la recherche et tout autre secteur d'activité menacé par le phénomène, et en rémunérant mieux leurs travailleurs de pointe. On resserrerait du même coup le tissu économique et social du Canada.

Ross Finnie nous met donc en garde contre la tentation de concurrencer les États-Unis sur leur propre terrain, celui des impôts et des avantages sociaux réduits, suggérant qu'on risquerait ainsi d'éroder davantage la qualité de vie et les conditions de travail des nombreux spécialistes que nous désirons conserver au pays. Cela dit, il soutient que l'exode des cerveaux signale également le besoin d'engager des réformes visant à une plus grande efficacité dans les secteurs touchés, réformes qui ne sauraient se limiter à l'injection de fonds.

En réponse à cet article suivent les réactions de cinq analystes respectés, auxquels Ross Finnie donne la réplique en dernière partie de ce dossier. Le premier d'entre eux, Peter Kuhn, un universitaire canadien vivant en Californie, soutient que le Canada ne peut miser sur l'argument, parfois exagéré, d'une meilleure qualité de vie pour retenir ses cerveaux. Il doit plutôt consentir à mieux reconnaître et rétribuer le mérite personnel.

L'ancien président de l'Association médicale canadienne, le Dr Peter Barrett, évoque pour sa part l'insatisfaction quasi généralisée des milieux médicaux canadiens, aux prises avec des conditions de travail difficiles et des équipements désuets. Il note qu'un redressement de ces conditions permettrait sûrement d'améliorer la satisfaction du personnel médical et de réduire les départs, tout en bénéficiant aussi à l'ensemble de la population. Le Dr Barrett, en accord avec les propositions énoncées par Ross Finnie, propose également des mesures ciblées envers les médecins canadiens en début de carrière et ceux vivant présentement aux États-Unis. De son côté, John Helliwell, de l'Université de la Colombie-Britannique, conteste la façon souvent négative d'interpréter les données sur l'émigration, particulièrement en ce qui concerne les diplômés universitaires. Il montre que cette émigration est en partie constituée d'étrangers venus au Canada pour y étudier et qui ont contribué à notre bien-être lors de leur séjour.

Quant à David Stewart-Patterson, du Conseil canadien des chefs d'entreprise, tout en s'accordant avec Ross Finnie au sujet de la rémunération des travailleurs d'élite, il juge insuffisante l'analyse de ce dernier quant au rôle joué par le faible dynamisme de notre économie dans l'exode des cerveaux. À ce chapitre, allègement fiscal et réforme des impôts devraient nécessairement compter parmi les solutions envisagées, avance-t-il. En dernier lieu, Daniel Schwanen, de l'IRPP, remet en cause ce qu'il appelle l'approche réactive de Ross Finnie. Il serait plus utile d'accorder au marché un rôle accru dans la réorientation des ressources et des rétributions vers les secteurs et les compétences en forte demande, plutôt que de tenter après coup d'endiguer les vagues de départs inquiétantes vers les États-Unis.

Summary

The Brain Drain: Myth and Reality What It Is and What Should be Done

Ross Finnie

In this study, Ross Finnie establishes an empirical foundation for debating the importance and causes of the Canadian brain drain. He finds that, while the number of leavers is small, a disproportionate number of them can be found among particular groups of knowledge workers and high-income earners, groups that are key to both economic growth and the quality of public services Canadians have come to expect.

These findings lead Finnie to conclude that Canadian policy-makers should target solutions toward those groups of workers which experience significant outflows. This could be done by addressing underlying difficulties in the sectors that have been beset by the brain drain, notably public sectors such as health and higher education, and certain high-tech activities. In addition, worker-specific measures — such as higher salaries for “stars” or tax incentives for risk-takers — should be adopted as necessary to retain the “best and brightest.”

Finnie contrasts such measured responses with the use of blunter instruments that have been proposed as a means to address the brain drain, most particularly general income tax reductions. He finds that a general income tax cut that would be sufficiently generous to keep a significant number of talented individuals from leaving is likely to carry a prohibitive cost. This is because the tax cut would also accrue to the vast majority of individuals who would not have left in any event. In contrast, he says, reinvesting in medical facilities, research and other sectors of activity affected by the brain drain — and increasing the rewards for top-flight personnel in these areas — would retain those we want to retain. And, says Finnie, Canada’s economic and social fabric would be strengthened in the process.

Indeed, Finnie warns against attempting to compete with the U.S. on its own low-tax, low-benefit terms, suggesting that this could further erode both the quality of life of Canadians as well as the working conditions for those many professionals whom we hope to keep in Canada. However, he also argues that the brain drain points to the need, beyond simply restored funding, for fundamental efficiency-enhancing reforms in the sectors affected.

Finnie’s article is followed by the reactions of five respected commentators, to whom Finnie replies in the last section of this folio. These commentaries open with a personal account from Peter Kuhn, a Canadian academic living in California, who maintains that Canada cannot rely on the presumption — at times overblown — of a superior quality of life to keep its highly valued talent from leaving. Instead, it should seek to better recognize and reward individual merit.

Dr. Peter Barrett, former president of the Canadian Medical Association, reports on the widespread dissatisfaction in the Canadian medical community with difficult working conditions and outdated equipment. He notes that better conditions could be expected to ameliorate not only job satisfaction among medical personnel and to staunch the outflow, but also benefit the wider population. Dr. Barrett also suggests targeted measures, along the lines suggested by Finnie, aimed at Canadian physicians in early career and those currently in the United States. The University of British Columbia’s John Helliwell, for his part, questions some of the widespread negative interpretation of the data, at least where graduate emigration rates are concerned. He shows that portions of the emigration from Canada likely represent foreigners who came to Canada to study and contribute to our well being while here.

David Stewart-Patterson of the Business Council on National Issues agrees with Finnie that better remuneration for key workers would be desirable, but takes issue with what he views as Finnie’s lack of exploration of the part played by Canada’s lack of overall economic dynamism. To the extent that tax relief and tax reform would bolster Canada’s economic strength, says Stewart-Patterson, they are a necessary part of the brain drain cure. Finally, the IRPP’s Daniel Schwanen questions what he calls Finnie’s reactive approach. He suggests that Canada could give a greater role to the marketplace in directing resources and compensation to sectors and individuals in high demand, rather than attempting after the fact to stem worrisome outflows to the United States.