SCHOOL OF LAW
CASE WESTERN RESERVE UNIVERSITY

Canada-United States Law Journal

Volume 25 | Issue

Article 11

January 1999

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PEOPLE ASPECTS OF TECHNOLOGICAL CHANGE: IMMIGRATION ISSUES, LABOR MOBILITY, THE BRAIN DRAIN, AND R&D – A CANADIAN PERSPECTIVE

Don DeVoretz[*]

Does everybody remember Ross Perot? Ross Perot spoke about a "sucking sound" in one of his ill-fated attempts to become President. The idea was that, because of the NAFTA, jobs would be sucked down south to Mexico. Well, he had part of it correct. Actually, jobs were sucked down south, but they went from Canada to the United States. They were not low-paying jobs; they were highly skilled jobs. The size, dimension, and the importance of this phenomenon is currently under debate in Canada. This debate colors the view of the trading relationship, the political relationship, and the way Canada operates its universities.

A colleague of mine, Rick Harris, who worked extensively on the trade agreement, argues that the United States is so large and so dominant under NAFTA, that we are going to be forced to converge. For example, Rick has argued that Canada should just adopt the U.S. dollar, like Israel did in the 1970s. Then, tax rates will inevitably converge. But, at the heart of this issue is the brain drain.[1]

In the 1980s, when Canada was discussing sleeping with the elephant, there was a serious question whether the Canada-U.S. Free Trade Agreement (FTA) would create pressures for migration between the two countries, or whether trade would be a substitute. After all, you do not have to exchange people if you can exchange goods. Economists were so sure that trade was a substitute for emigration that it was felt, at least in the Mexican context later on, that it would stop Mexicans from coming north. Canadians did not really have a big opinion on it, although Bob Mendella, who was cited here, is a Canadian who was sure that trade would be a substitute for emigration.[2]

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[1] *See* Bruce Wallace, *Say It Ain't So: The Debate Over Abandoning the Loonie Has Fueled Fears About Preserving Canadian Sovereignty*, MACLEAN'S, July 15, 1999, at 14 (describing Richard Harris' suggestion that Canada negotiate a common currency with the United States).

[2] *See id.*

There is a lot of evidence that points to the fact that trade and emigration are complementary. This is especially frightening for Canadians. There is evidence that capital is moving in the wrong direction, too. Could it be that trade fosters outward movement of both human and financial capital from Canada? Could it be that the traditional principles we use in economics, that labor and capital should be going the opposite directions, are not true? Is the "sucking sound" we now hear both high-skilled jobs going south and foreign direct investment going south? This could be the case and Canada could be looking at a fifty-cent dollar in the future instead of the current eighty-cent dollar.

There is a real intellectual issue here on the table – as we increase Canada-U.S. trade from one billion to one-and-a-half billion dollars per day, will this accelerate the outflow of highly skilled Canadians and more capital to our leading trading partner? Economists were naïve thinking that the opposite would happen.

How can you measure this flow of brain power, what metric do you use? Moreover, how many people move under the system now, north as well as south? Secondly, speaking as an economist, do we really just want to use a metric of numbers? Do we have a more refined measure?

I am going to try to give you the measurement dynamics in a few minutes, but first I would like to point out some policy issues. There are four viewpoints on the table when you talk about a free movement labor policy. One view derives from mainstream economics. Mainstream economists would say free movement increases the welfare of the world or, in this case, the NAFTA trading bloc. So, do not interfere; do not stop it; there should be no government intervention. Who else in the business world agrees with this? Bill Gates agrees with this. When the Congress increased the number of H-1B visas from 65,000 to 115,000, it was colloquially called the "Bill Gates Amendment."[3] Bankers in Canada also believe that the free movement of labor is very good, so we should not interfere with it. In sum, you can find a large number of people who agree with the intellectual precept that free movement is welfare-improving.

Some scholars are more cautious and hold that, when you move people, ideas, and capital to a new location, such as Redmond, Washington or Silicon Valley, you are moving a nodule of growth. This is the so-called "endogenous growth theory." With migration, you are losing out on the dynamics of growth and further trade opportunities. It is not, therefore, just a question of where people are, it is how you put them together with other inputs.[4]

[3] *See* American Competitveness and Workforce Improvement Act of 1998, Pub L. No. 105-277, 112 Stat. 2861-641 (codified as amended at 8 U.S.C. § 1101).

[4] *See* Wallace, *supra* note 1, at 17.

The second argument goes a long way in explaining if Canadians and Americans are so alike, why is there such a huge income gap? Canada is losing the better people and capital to the United States. When you put this mixture together, continued productivity differences appear.

The third public policy issue concerns human capital; who is paying for this? In a world in which students pay for their entire degree, clearly no taxpayer would care whether people moved or not. If you go to Queen's University, and you get your MBA and you leave for Buffalo, Canadian taxpayers would not care because a Queen's University MBA is fully paid for by students. But in reality we have a problem. There is a divergence in the two countries' public school systems, and eighty to eighty-three percent of post-baccalaureate degrees are publicly paid for by Canadian taxpayers. So, there is a concern about the size of the transfer of human capital over and above the first two arguments. We have to address that issue. If you want people to move, because it is welfare-improving, who will compensate the Canadian taxpayer?

The fourth issue stems from the fact that traditionally, we compensate the Canadian taxpayer when we lose a Canadian graduate to the United States by getting somebody from Beijing or Shanghai. In fact, Canada is even more aggressive in getting immigrants than the United States. This leads to an equity issue. The irony is if Canada actually replaces a Canadian graduate with a graduate from Bangalore, it turns out that an Indian taxpayer is subsidizing Bill Gates. This is a real public policy issue if the free movement of human capital is ultimately financed by a poor third party?

In the final analysis, the debate in Canada is over numbers and questions abound. Did NAFTA or the FTA matter in this personnel flow? Was Ross Perot partially right?

Clearly he was. The movement all began after 1989 with the FTA. Professionals representing nineteen high-tech, Information Technology (IT) groups moved to the United States pushing the numbers up from almost 14,000 to almost 19,000.[5] These are only the permanent movers, and these are very conservative numbers. The United States is receiving in large numbers the crème de la crème. In a period of eight years, the United States has received about 40,000 Canadian professionals and managers.[6]

[5] *See* Don DeVoretz & Samuel A. Laryea, Canadian Human Capital Transfers: The USA and Beyond 17 (June 7, 1998) (unpublished manuscript on file with *Canada-United States Law Journal*) (compiling U.S. Immigration and Naturalization Service data on Canadian emigration from 1982-96).

[6] *See* Ian Jack, *The Brain Drain to the U.S. "is Real and Costly,"* NAT'L POST, Apr. 17, 1997, at E8.

To put these numbers into perspective, professionals include physicians, nurses, electrical engineers, and architects. For example, forty-four percent of the 1994-95 nursing class of all of Canada has left for the United States.[7] That rivals the Philippines. Eighteen percent of the 1989-90 cohort of physicians have already left for the United States.[8] Is Canada getting people up from the United States? Those gross numbers could be discounted by about thirty percent. We are not getting our fair number back. Seventy percent of the flow is post-baccalaureate, and seven out of ten are on a one-way flow to the United States. And that is my point, we are not sending you hockey players.

The third point is the major one – there is a structural break in this flow and it happened after the FTA. This break comes about for two reasons. The 1990 Immigration Act changes during the same period as FTA, but I think it is part and parcel of the North American integration of the economy.[9]

Canada sees itself as looking at a door that is opening up wider and wider. Canadians are being pushed out by various policies, including educational and tax policies. It is not just the FTA and NAFTA that has accelerated the movement out, it is also Canadian domestic policies.

If we look at the two periods of pre- and post-FTA, we find out that the total social cost of all the resources embodied – student tuition, books, and government subsidy – in the people that left between 1982 and 1997 is about nine billion Canadian dollars, of which the most recent portion is about two-thirds or six billion dollars.[10]

The subsidy component is 5.3 billion dollars, or approximately half the value of the education that immigrants received. Why is this transfer an issue in Canada? The amount of money embodied in this flow is equivalent of having two and a half Canadian universities operating exclusively to provide the United States with highly trained people. We only have about twenty universities of substance in Canada, and for two and a half of these to be running each year to provide the United States with graduates does make Canadians very anxious. The glib political response in Canada is not to worry about it. They say exchange is good. Canada's chief statistician provides numbers showing that the rest of the world is compensating Canada for the Canadian graduates leaving for the United States. But, it is very difficult for a Shanghai graduate in engineering to translate their skills to Canada when

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[7] *See* Anne Dawson, *Brain Drain Loss in the Billions, Study Claims*, LONDON FREE PRESS, Oct. 15, 1998, at A10.

[8] *See* Jack, *supra* note 6, at E8.

[9] *See Immigration Act*, R.S.C.1990, c. 52, s. 1.

[10] *See* Dawson, *supra* note 7, at A10.

they do not speak English. It is extremely hard, even in a Cantonese-speaking city like Vancouver. The language of IT is still English.

The numbers suggest that the amount of permanent movers is relatively small, but they are growing. Back in the 1960s, many more Canadians were coming to the United States. The value of these workers is much higher today. The response to this has been either a wringing of hands, and a feeling that Canada should do something about it, but we do not know exactly what to do; or not to worry at all.

As a Canadian, I see it as a churning problem. Canadians send people to the United States who are highly trained and in exchange Canada receives Indian programmers from Bangalore. But I see high churning costs with all this movement. Would it not be better if the folks from Bangalore just went directly to Redmond, Washington instead of making the intermediate stop in Canada while Canada loses the entire graduating class from Waterloo? This is a serious problem. I will try to estimate the costs of this moving around. Canada received 50,578 of these high-tech people, and lost in that same period 48,670 people. So the net flow around the world from the Canadian point of view is that Canada gained about 1,900 people in these high-tech occupations. If you just did head counting, you would say, that is not so bad, and we almost won. But it is a very expensive process. The net transfer, the churning cost of these people is very expensive. The first cost is the cost of recruiting, the second cost is the cost of failure. What happens if the graduate who left Canada, who speaks French and English, immediately rises to the top in a firm in the United States and is replaced in Canada by someone with an equivalent degree on paper, but who does not speak French or English and needs two years of remedial training? Well, for Canada, it generates a lot of costs. It cost us a billion dollars during the last ten years alone. So, in fact, we may be losing out substantially.

How did all this get started? How do we find ourselves in the position of being at the wrong end of the vacuum cleaner? It is because we run a very egalitarian educational system, which, at this point, leads to the highest educated labor force in the OECD. It is a good thing that had unintended consequences. In Canada, fifty-five percent of the baccalaureate degrees are awarded to women. Now, over half of the graduating class in law and medical schools at the University of British Columbia are females. This growth that was described to you earlier in Canada's education stock, which gave us some confidence and pride, really is the increased participation of females in our educational system. One of the consequences is that many of these females who gain this training are leaving.

Canada faces a dilemma. In order to catch up to the United States, Canada poured resources into the educational system. But, we have an open border, and the rate of return in economist's language for educated manpower is so much higher to come to the United States than it is in Canada. So the educated manpower left.

There are very few things we can do to the public policy framework. We can stop educating our kids, which is tantamount to shooting ourselves in the foot. Not only will we never catch up to you, but we will fall behind. We can move to a full cost recovery system, where our students would pay the total cost of education, which is politically unacceptable. The third thing we can do is to tolerate the continuing outflow of a large number of students, which is probably politically unacceptable, too. So, what can Canada do? Get out of NAFTA? Some people say that is not a bad idea.

I have a very simple idea – let the market work. Produce what is called a contingent loan scheme. It works very simply. If a student gets his degree from Simon Fraser University in electrical engineering and receives a subsidy of about $100,000, then he would not have to repay the subsidy if he finds a job with a Canadian company since he will pay taxes.

But, if he leaves, he owes us money and we would like it back. This would do two things; one, it would stop the moral hazard problem, the strategic planning by students to get an electrical engineering degree at Simon Fraser, expecting to be recruited in Redmond, Washington. If the students realized in advance that if they do get that job, they will owe $100,000, they might think twice about doing that. The second thing is that the taxpayer who is losing billions of dollars would recapture some of that money. I know there is the problem of enforcement, but a legal document can be constructed which is enforceable. So the contingent loan scheme would help a lot.

The second part of the two-prong attack would be to recognize that the tax system itself is completely out of whack. When you are paying sixty-four cents on a marginal dollar in British Columbia at an income level of only $36,000 U.S., you do not have to go very far to explain why older people are leaving. This has two parts. The younger people are behaving strategically, and you must recapture some of their loans. The middle-level people are looking at the tax system and saying Buffalo does not look so bad.

The accelerated brain drain to the United States will be a thorn in NAFTA and trade relations over the next five years. I hope this has provoked you enough to consider drawing up legal documents for a contingent loan scheme.