

Vancouver Centre of Excellence



Research on Immigration and Integration in the Metropolis

Commentary Series

#97-02

Ethics, Economics and Canada's Immigration Policy

Don J. DeVoretz

March 1997

RIIM

Research on Immigration and Integration in the Metropolis

The Vancouver Centre is funded by grants from the Social Sciences and Humanities Research Council of Canada, Citizenship & Immigration Canada, Simon Fraser University, the University of British Columbia and the University of Victoria. We also wish to acknowledge the financial support of the Metropolis partner agencies:

- Health Canada
- Human Resources Development Canada
- Department of Canadian Heritage
- Department of the Solicitor General of Canada
- Status of Women Canada
- Canada Mortgage and Housing Corporation
- Correctional Service of Canada
- Immigration & Refugee Board

Views expressed in this manuscript are those of the author(s) alone. For more information contact the Co-Directors of the Centre, Dr. Don DeVoretz, Department of Economics, SFU (e-mail: devoretz@sfu.ca) or Dr. David Ley, Department of Geography, UBC (e-mail: davidley@unixg.ubc.ca).

Ethics, Economics and Canada's Immigration Policy

Presentation to
1997 Immigration and Refugee Law Conference
Canadian Bar Association
CLE Seminar
Toronto, Canada
Feb. 28, 1997

By
Dr. Don J. DeVoretz
Co-Director
RIIM
Simon Fraser University
Burnaby, British Columbia V5A 1S6

voice (604) 291-4660
fax (604) 291-5336
e-mail devoretz@sfu.ca

Introduction

John Rawls (1971) the academic philosopher, has argued that to ethically judge a country's economic policy we must first measure the policy's impact on the standard of living of the country's lowest economic quintile. In other words, how much of the economic pie or Gross Domestic Product is distributed to the bottom fifth of income earners both before and after any government intervention is the Rawlsian equivalent of the United Nations Human Development Index?

I would argue that Rawl's grand criterion is also applicable with respect to evaluating the equity of a country's immigration policy. In other words, if we attempt to rank Canada's immigration policy vis-à-vis Australia's or the USA's, it is appropriate to ask: how does Canadian immigration policy influence the economic plight of the bottom fifth of Canadian residents?

With this perspective in mind, it is interesting to note that recently Canada's immigration debate has shifted from the venue of policymakers and the chattering class to the religious editor's desk. Douglas Todd, in his Vancouver Sun column, *Religion and Ethics*, argues that immigration issues are ethically complex but that Rawls and others offer a guiding light. In fact, when Todd states that, "Nations can maintain a just welfare society only with tight borders" (Vancouver Sun, *The Case for Controlling Immigration*, Feb. 1, 1997) he is espousing the Rawlsian view.

In other words, the ethical standard implied by this view is that if immigrants reduce the economic lot of the bottom fifth of Canada's population then migration levels should be reduced, or perhaps the mix of immigrants revamped, or both.

This Rawlsian ethical standard leads to a host of questions including:

1. Do we only accept immigrant entrepreneurs, investors, or independents who employ or raise the earnings of low-skilled Canadians and contribute to the Canadian treasury from their first year of arrival?
2. What if some immigrants initially impose costs on the treasury but over their lifetime are net contributors to the treasury?
3. What if we must wait for their progeny to make this contribution?
4. What if some members of the family reunification class impose costs on Canadian society but other members of the family class (younger siblings) do not?
5. Do we split up families?
6. Do we exempt bona fide refugees even if they fail under the Rawlsian criterion?
7. Do we compensate Third World immigrant-sending countries if Canada is creating a "Brain Gain" with its immigrant policies on the principle that we are reducing the welfare of the poorest countries in the world?
8. What if one region of Canada gains economically from immigration and the rest of the country either pays for the social cost of immigrants or suffers economic loss due to a greater acceptance of non-economic immigrants? Do we lower the total Canadian immigrant intake? Do we put in place regional

restrictions such as minimum investment rules or regional residency requirements? Does the federal government provide regional impact financing?

9. What if different levels of government within a region contain economic winners and losers in the calculus of tax contributions? For example, since infrastructure and ESL costs are partially financed at the local level but immigrants primarily pay taxes to the federal or provincial treasuries, who pays for these very local ESL costs?

The answers to this series of questions, with their implied equity judgments, are extremely important and current public opinion reflects a set of answers which favors immigrant restrictions. Thus, often ill-informed public opinion, now based on a perhaps false Rawlsian ethical judgment, drives immigration policy.

In fact, Minister Robaillard has premised her most recent immigration levels on the existence of these popular views, whether these views are founded in fact or not.

Public opinion, of course, is not measured by answers to an extensive list of questions.

Rather, polls and the minister's aides ask one over-arching question. To wit: "*In your opinion do you feel there are too many, too few, or about the right number of immigrants to Canada?*"

Forty to fifty percent of Canadians responded to various Canada-wide polls between May, 1995 and November, 1996 by answering "too many."¹ Even more significantly, only six to nine percent of those surveyed felt that "too few" immigrants were being admitted.

¹ For 1995 see *Insight Surveys*, in 1996 (Angus Reid surveys) and 1996 (Ekos survey). The most recent poll of McIntyre and Mustel in British Columbia cites that 60 percent of British Columbians felt that there were now "too many" immigrants entering their province.

What has led to this crumbling of support for immigration amongst Canadians? I would suggest that Canadians have answered one or more of my initial set of questions and concluded in a Rawlsian sense that they and others — perhaps the less fortunate — have been economically harmed by immigration.²

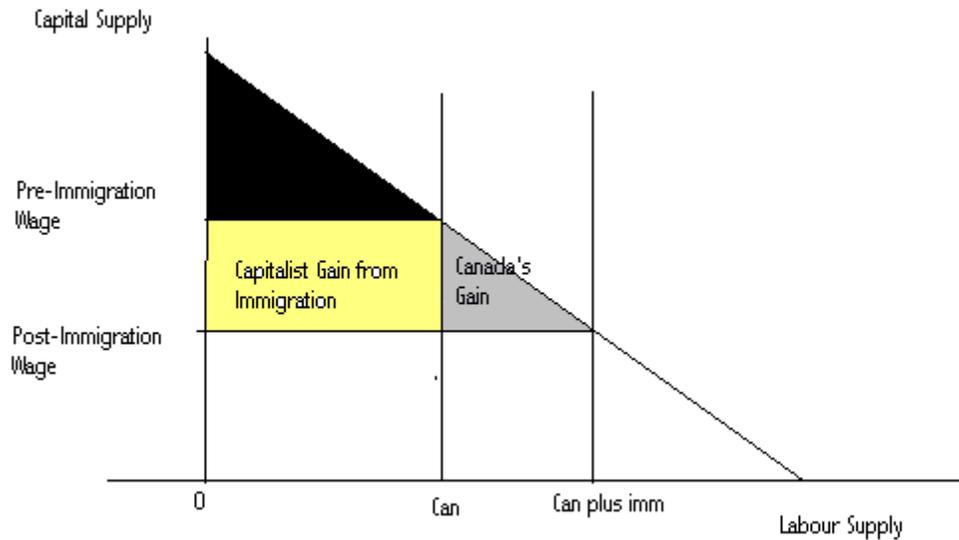
After all, no less a person than David Foot (1996) has argued the Rawlsian view that immigration was ill-timed in the 1990s since unemployment was up and national birth rates and the subsequent growth in the adult population were sufficient to fill labour demand without immigration.

What is the underlying and misguided economic principle that both David Foot and the other fifty percent of the Canadian population use to rationalize their economic fear of immigrants? It is the dreaded triangle. Not the Bermuda triangle, but possibly its economic equivalent for immigrants — the Harberger triangle.

We present two versions of the Harberger triangle to illustrate two possible theoretical outcomes. One, which would produce a favorable set of answers to our posed questions, and the second, which would support the critics of immigration especially of the Rawlsian/David Foot school. The empirical question we will later address by region in Canada is: what case is the most appropriate case?

² D. DeVoretz, “The Political Economy of the Canadian Immigration Debate: A Crumbling Consensus”, http://www.riim.metropolis.net/research-policy/index_e.html

Figure 1. Harberger Triangle: Rawlsian Case for Immigration Control



If Figure 1 applies to Canada as a whole, or perhaps to Quebec and Ontario only, then the Rawlsian ethical rule can be invoked to limit immigration.

Let us analyze the mechanics of Figure 1 and deduce the economic outcomes of immigration, which would be simultaneously injurious to the bottom fifth and helpful to the top one-fifth.

Before immigrants arrive, Canada's labour supply is relatively small (O-Can) and wages are relatively high (Pre-Imm wage) and thus the income share going to the capitalist is small (black triangle). Immigrants now arrive, and if nothing else changes three outcomes are obvious:

1. Total Canadian income rises by size of triangle (Canada's gain)
2. Wages go down (Post-Imm Wage)
3. Capitalist share rises (Capitalist Gain)

This is the Rawlsian case for curtailing immigration. Although total output has increased after immigration, it has done so at the expense of the workers and thus the capitalist gains. Hence, an open immigration policy, which hurts the lowest income sector and causes a gain to the highest income group is, according to Rawls, ethically incorrect.

But, is there an immigration policy lurking in the background which, under the Rawlsian rule, would argue for more immigrants instead of fewer? That case is made in Figure 2.

Figure 2: Pro Immigration Rawlsian case.

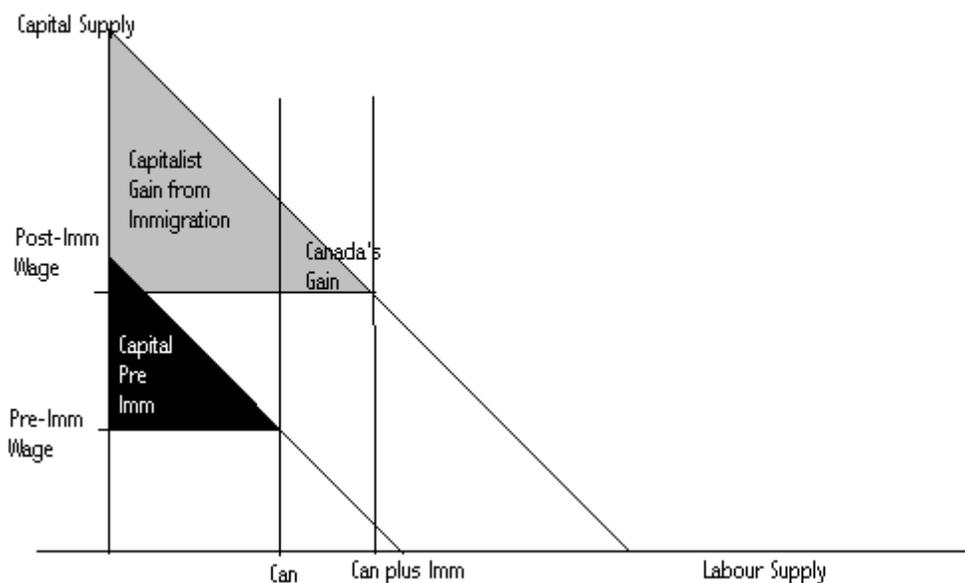


Figure 2 has an added set of ingredients that may also reflect the outcome of Canada's post-1978 immigration policy. The profound implications of Figure 2 are not appreciated by the Rawlsian /Foot type of immigration critics who propose to close the immigration door. The underlying premise of Figure 2 is that immigration does not interact in a zero-sum economy.

It is easy to argue that over time in a growing economy, the Harberger triangle(s) expands if you add the correct ingredients and you get Figure 2. The yeast or rising agents in this particular case are the extra ingredients that some immigrants bring with them. These well-known complementary inputs include financial and human capital, technical change or new methods of production, increased competitive pressure, and growing trade opportunities through access to new markets. Any one of these events or a combination thereof expands the Harberger triangle by shifting the hypotenuse to the right. I leave it to a later section to assess the empirical magnitude of these forces. Suffice it to note here that when immigration adds one or more of the above ingredients to the economy, Figure 2 is the result. Under this optimistic solution, (1) the capitalists gain (gray area), (2) the rest of the economy gains (Canada's gain), and post-immigration wages rise. This is the Rawlsian case for expanded immigration.

To some of you, this may seem like legerdemain. However, I was originally trained as an economic historian, and if we read Dales on early 20th century Canada or Williamson on the United States in the late 19th century, their analyses indicate that when capital followed immigrants to Canada and the United States, Figure 2 applied. These results should not be surprising. After all, that is how Canada grew circa 1896-1914, and even Lord Sifton understood that when he constructed Canada's first immigration policy. At the *fin de siècle*, Lord Sifton made immigration a cornerstone of Canada's three-prong policy of National Development. In order, the policy consisted of, first, tariffs for central Canadian manufacturing, next, railroad construction, and finally, but most importantly, providing immigrants to the prairies to till the soil and produce the wheat exports to fuel development. There is vigorous debate amongst historians concerning the exact contribution of the constituent parts of this policy to Canadian economic development

(Serelitis, 1993). However, Lord Sifton had some version of Figure 2 in his mind since the railroad construction (financed from the United Kingdom and the United States), helped open new lands (under new dry farming methods in the Palliser triangle) and led to increased exports. These are exactly the ingredients that led to my version of Figure 2. Now, to be sure, there were forces at the turn of the century that caused immigrants to drive down domestic wages (Dales 1964[b]). But this occurred in sectors of the economy (central Canadian manufacturing) that lived in a world of Figure 1. Lord Sifton and the rest of Canada lived in Figure 2, and later politicians appeased central Canadians who lived in Figure 1 by producing Canada's first Immigration Act (1911). This immigration act put some restrictions on source and quality of labourer. By the 1920s, when Figure 1 was the predominant paradigm of the Canadian economy (an agricultural recession was in place after W.W.I.), immigration levels declined as restrictions became more severe (DeVoretz 1995).

Thus, far from legerdemain, Figure 2 has, at times, been the predominant model of our economy. In other historical periods and Canadian regions, Figure 1, with its implied closing of the immigration door, was the relevant case.

How can modern economic policy replicate the historical immigration policy that benefited the bottom fifth of earners when we no longer have the impetus of railroads, or winter wheat or open lands? We do not want to be caught in this historical paradigm as was the *Economist* magazine when it argued that given Canada's landmass we could support a population of 350 million if we accepted European density levels. Canada's economic world has changed, and thus empty space immigration theory is just that — empty.

What we must develop now is a version of nineteenth century immigration policy to create the conditions that lead to Figure 2 in the twenty-first century.

I now turn to some modern empirical evidence, which may indicate the necessary conditions to yield Figure 2 at the turn of **this** century.

If Figure 1 holds, then the Rawlsian conditions are met and empirically the labour market should adjust to increased immigration with greater unemployment and/or wage depression or convergence between skilled and unskilled wages.

What are the facts on Canada's unskilled wage suppression and immigration levels in the 1990s? The standard test is to estimate the relationship between the percentage of foreign born in an industry and their effect on Canadian-born wages or employment.

Akbari and DeVoretz (1992) conducted research to detect the relationship between Canadian-born unemployment levels and the size of the foreign-born labour force in 125 major industries under pre- and post-1981 immigration levels.³ Canada-wide, there is no evidence to suggest that immigrants displace the foreign born. In other words, on average the foreign born created as many jobs for the Canadian born as they displaced in the labour market. These results have been replicated by others (Roy 1987).

However, if you limit your analysis to those 59 industries in which the foreign born predominate (greater than 25% of the industry's labour force) then the results change.⁴ In

³ The 125 industries covered 93 percent of Canada's employed labour force.

⁴ A selection of these industries circa 1986 were:

Description	SIC #	Absolute #(000s) foreign born	% of foreign born
Meat and Poultry	101	12.7	28
Bakery	107	12.3	30
Food (Misc.)	108	10.6	27
Plastics and Fabricating	165	11.2	32
Men's Clothing	243	19.0	45
Women's Clothing	244	21.0	51
Household Furniture	261	13.6	34
Hardware tools & cutlery	306	9.2	38
Metal Stamping	304	10.0	29
Machine Shops	308	7.5	32

these industries you find significant job displacement. This loss of jobs by Canadian-born workers caused by increased numbers of immigrant workers implies that we operate — at least for this sector — in a world of Figure 1.⁵ In general, across the pre-selected 59 industries, a one percent rise in foreign-born labour in these industries circa 1986 reduced Canadian-born employment by 2543 workers. This is a non-trivial effect.

In a similar vein, preliminary evidence conducted at RIIM yields a mixed picture for the Canada-wide wage-immigration relationship. In 8 of the 51 industries surveyed, Canadian-born wages rose as the foreign-born labour force increased (Figure 2), while in 17 of Canada's 51 major industries an increased foreign-born labour force is associated with declining Canadian-born wages (Figure 1).⁶ For the remaining 26 industries, neither Figure 1 nor Figure 2 applied.

What are the underlying characteristics of these industries for which job displacement or wage suppression appears and the Rawlsian rule to partially close the immigration door is clearly applicable? First, these industries are predominately manufacturing and located in central Canada. Next, these industries were either (formerly) behind a high tariff barrier (clothing, furniture) or were characterized as low skilled (food, bakery, meat and poultry) with little complementary new technologies or physical equipment.

What were the underlying characteristics of industries in which both new immigrants and capital appeared leading to more jobs or higher wages for the Canadian-

⁵ Given the above significant results, now the actual degree of displacement between Canadian-born and foreign-born workers can be calculated for this subset of 59 industries. For example, in the meat and poultry, clothing (combined) and university groups, the absolute marginal displacement of Canadian-born workers for each one percent rise in their immigrant labour force circa 1986 was respectively: 214, 582, and 268. Clearly, the degree of displacement depends directly upon the labour-intensive nature of the industry and the absolute number of Canadian-born workers in the industry.

⁶ Most of the industries that suffered wage declines belong to the 59 cited in footnote 3.

born workers? These optimistic results appeared in Canada's 34 most efficient industries,⁷ which were characterized by having the highest value added per worker and the highest capital-labour ratio, making them competitive and export oriented.

These optimistic results are repeated by skill level. In those skilled occupations that require human capital, a rise in foreign-born workers simultaneously leads to wage increases and/or job creation, as predicted by Figure 2. However, unskilled immigrants compete in the environment of Figure 1 (Roy 1987; Akbari and DeVoretz 1992).

In sum, this evidence suggests that in terms of the Rawlsian criterion, it is not the numbers of immigrants you admit, but who you admit and in what industries or occupations that immigrants ultimately work that determines if immigrants will have a positive, neutral or negative impact on Canadian-born employment and wages.

Immigration Policy, Rawlsian Ethics and Canada's Cities

How can policy determine the labour market experience — Figures 1 or 2 — for immigrants? Table 1 reveals the three immigrant policy options available under the 1978 Immigration Act and its subsequent revisions. First is the overall total or yearly immigrant target that appears in the last row. Next, the individual columns reveal the size of the human or financial capital flows, and finally, the rows indicate the provincial destination of the immigrants. I would argue that all three of these variables, total numbers, geographical distribution and entry class, conditions in which world — Figure 1 or Figure 2 — immigrants work and hence their economic impact on Canadian residents.

⁷ To find the largest industries we first divided the sample of 125 industries in half, i.e. 66 industries, to find those industries with the highest absolute value added in the economy. Next, we measured the value added per employee as a second indicator of industry size. Now, if the industry had both a high absolute value added per S.I.C. grouping at the three digit level and a high value added per employee we included it in our sub-sample. Thirty-four industries passed these criteria.

Table 1: Landings by Class of entry:1995

Province	Family	Refugee	Assisted	Independent	Entrepreneur	Self	Investor
Ontario	44,342	16,812	17,266	30,934	3,386	1,210	939
B. C.	15,127	1,969	7,869	11,670	3,399	954	2,942
Canada	76,659	28,088	29,181	57,392	11,363	2,834	5,153

For most of my readers, the entry classes noted in Table 1 do not need extensive definitions. I, however, will regroup these bureaucratic categories into two major aggregations — economic and humanitarian. The economic class consists of: entrepreneurs, self-employed and investors, assisted immigrants and independents. The humanitarian entry groups are clearly refugees and, to a more limited degree, the family class.

My central proposition is straightforward: “A *cinquante-cinquante* (or greater) distribution between the economic and humanitarian classes insures that the Rawlsian condition for greater immigration is met.”

It should be noted that there exists limited but strong dissent with my rule.⁸ We now ask: how do the three main provinces perform vis-à-vis the *cinquante-cinquante* rule? Figures 3 to 5 visually highlight the economic and humanitarian shares of immigrants as derived from Table 1.

Post-1980 immigrants to Canada had three geographical destinations; Quebec (Montreal), Ontario (Toronto) and British Columbia (Vancouver). For example, in 1995 British Columbia received 24 percent of Canada’s immigrants with 87 percent residing in greater Vancouver. This geographical concentration of immigrants to Vancouver, Toronto and Montreal will simplify and focus our analysis in our geographical search for

⁸ Reikai (1996) characterizes this approach as viewing immigration, “as a form of selective recruitment rather than as nation building,” which suggests that a version of *cinquante-cinquante* policy is a “designer” immigration policy.

Figures 1 and 2. It is clear that significantly different regional distributions exist by entry class.

Figure 3: B.C. Immigrant Landings by Class:1995

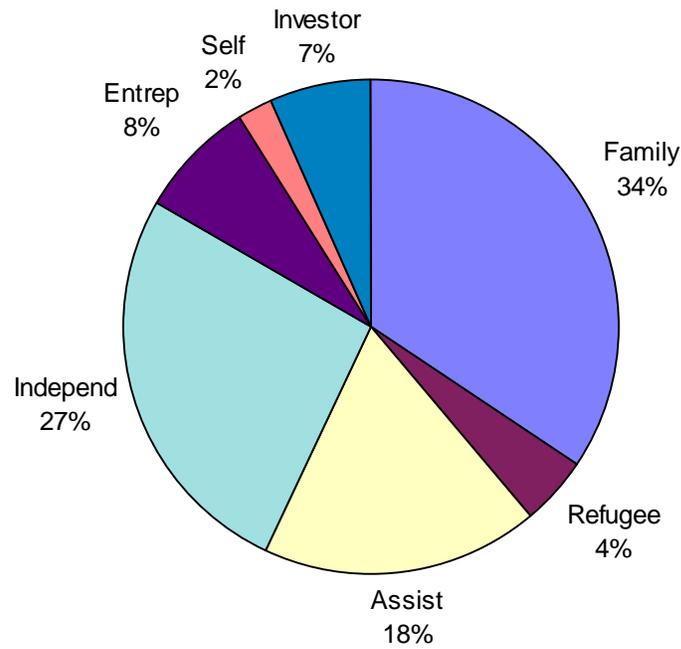


Fig.4 Landings to Ontario:1995

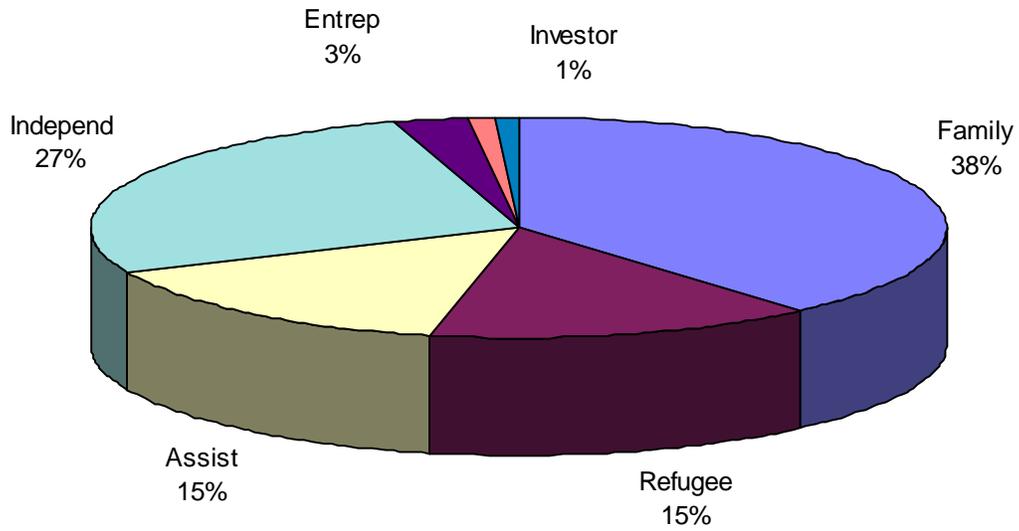
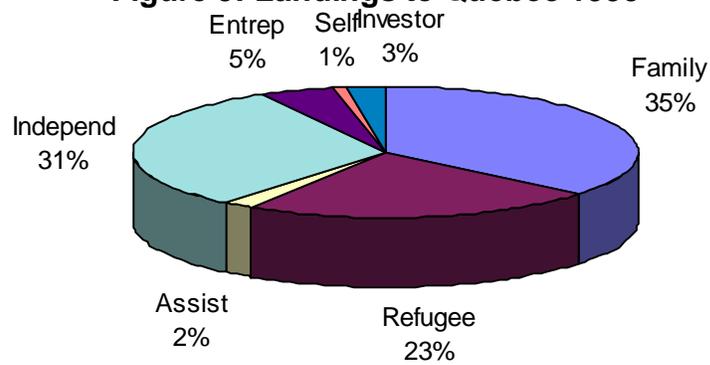


Figure 5: Landings to Quebec 1995



The evidence for British Columbia argues for a favorable Harberger triangle, i.e., Figure 2, while the pie as sliced for Quebec and Ontario points to a Figure 1 scenario. In short, British Columbia received the majority of its immigrants in the economic class (62%) while the non-economic entry gates dominated in Quebec (58 %) and Ontario (53 %).⁹ Thus, for 1995 only British Columbia satisfies the *cinquante-cinquante* criterion. All these provincial entry shares are indicative of the human and financial capital that accompany the immigrant inflow, but more persuasive information for the existence of Figures 1 or 2 would be the occupational distribution by cities. I present this information below and we can now see the outcomes of government policy by city.

⁹ I define the economic class as investors, entrepreneurs, self employed, independents, and assisted immigrants and their immediate relatives. The non-economic class consists of the residual or refugees, and the family class.

Figure 6 Vancouver's Immigrant Occupations

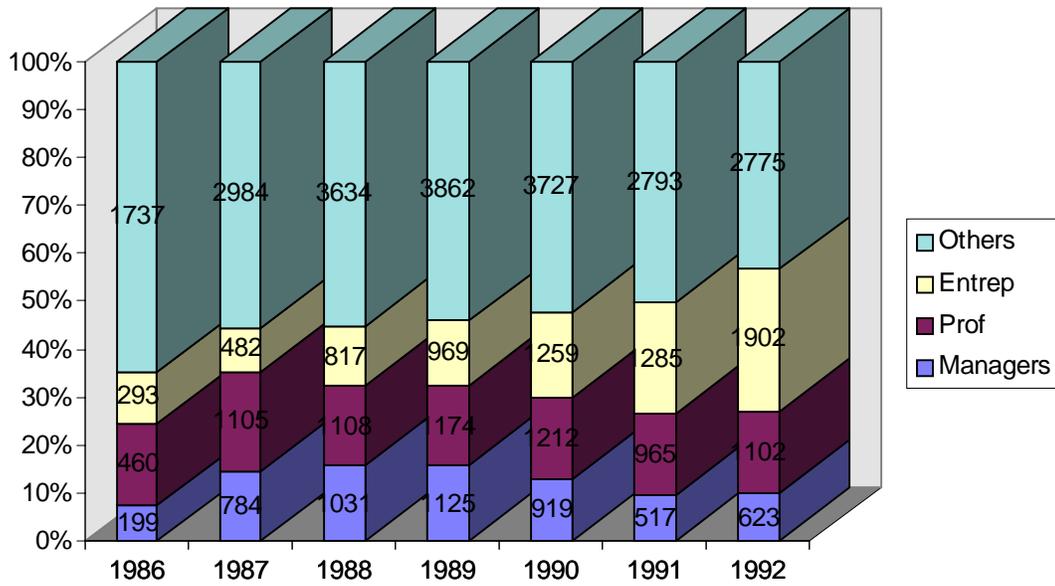


Figure 7 Toronto's Immigrant Occupations

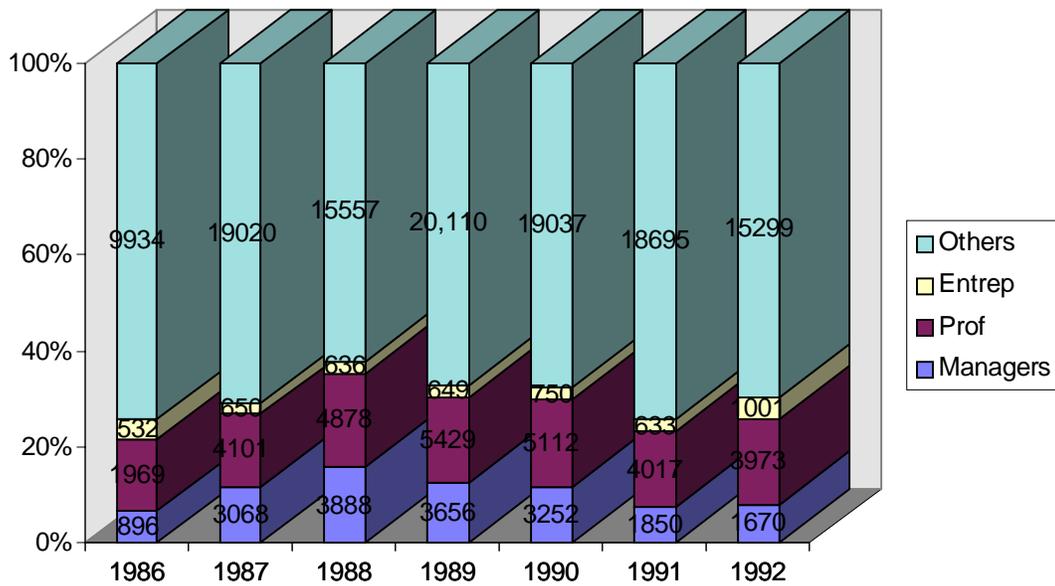
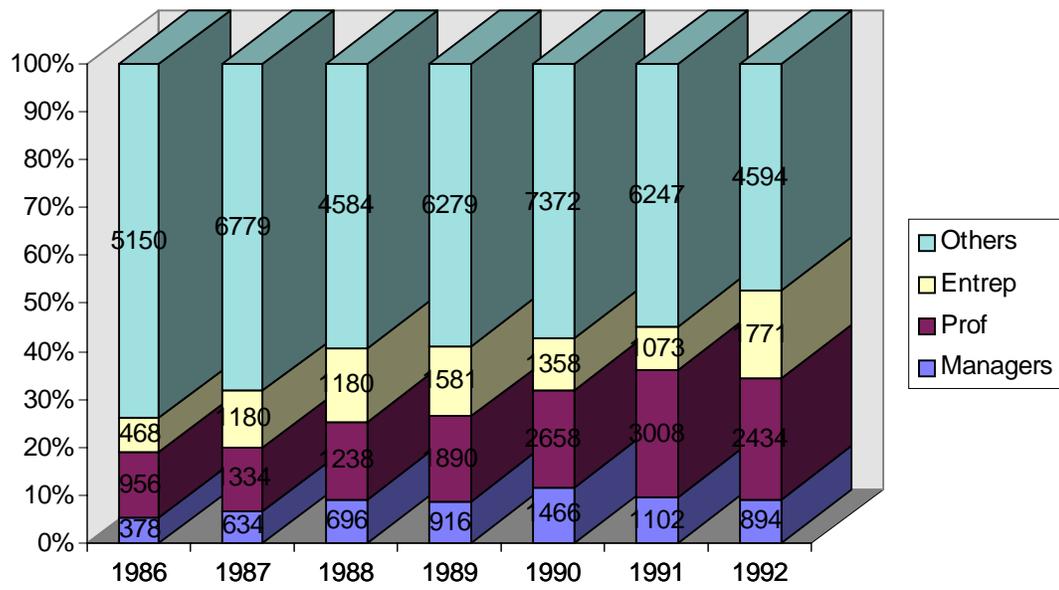


Figure 8 Montreal's Immigrant Occupations



As immigration levels rose Canada-wide after 1986, total numbers on annual immigrant arrivals doubled to Vancouver between 1986 (2,689) and 1992 (6,402) with a resulting distinct shift in the immigrant labour market from Figure 1 to Figure 2. A combination of immigration policy, events in China, and increased economic activity in Vancouver led to a rising share in the economic class of immigrants to Vancouver from 35 percent (1986) to 55 percent by 1992. In 1996, the economic class of immigrants exceeded 60% of Vancouver's total immigrant arrivals.

What of Toronto? Toronto ostensibly operated under the same immigration policy during this post-1986 immigrant expansion period. As absolute numbers of arrivals to Toronto grew from 13,331 (1986) to 21,943 (1992) the share of the economic class of arrivals remained well below 40 percent.

Why would this markedly different share between the economic and non-economic classes appear between Vancouver and Toronto under one national policy? One obvious reason was the implementation of the FTA and later NAFTA, as the twin forces of recession and restructuring deterred immigrant arrivals in the economic class.¹⁰ Two points are now evident. Toronto operates in the Rawlsian world of Figure 1, implying that immigration would be limited. Vancouver operates under the more dynamic world of Figure 2 with its implied higher immigration levels. How do we reconcile these different regional experiences with a national immigration policy? The brief answer is that we can not.

Now let us look at the outcome of a regional immigration policy under provincial control, as in Quebec. Did Montreal fare any better than Toronto given Quebec's added immigrant selection control? The answer is yes. By 1992 (and beyond), Montreal had barely satisfied the *cinquante-cinquante* rule. In sum, Canada's three major urban immigrant centers have had three unique outcomes based on the Rawlsian rule.

¹⁰ A more generous refugee policy is also one of the contributing factors in the Vancouver - Toronto differential experience.

Conclusions

Where has this journey taken us in terms of immigration policy and the Rawlsian ethical judgment? The Rawlsian ethical view for increased immigration is only satisfied by the recent Vancouver experience. As I have argued elsewhere (DeVoretz 1995, 28), the evidence suggests in a Rawlsian world of ethics and economics that British Columbia's immigrant totals should rise to 60,000 (from 48,000) or 2 percent of British Columbia's base population. On the other hand, Ontario's immigrant numbers should be reduced to three-quarters of one percent of Ontario's population of less than 80,000. Only with a radical devolution of immigrant policy-making powers to the provinces can we as a country satisfy Rawls. We have started down that road in Quebec and Manitoba and should accelerate that process by making devolution an election issue.

Thank you for your attention. I invite questions at this point.

Bibliography

- Akbari, A., and D. J. DeVoretz. 1992. The substitutability of immigrants in production: Evidence from Canada. *Canadian Journal of Economics* 25, no. 3 (August): 604-614.
- Akbar, S., and D. J. DeVoretz. 1993. Canada's demand for third world highly trained immigrants: 1976-1986. *World Development* (January): 177-187.
- Coulson, R. G., and D. J. DeVoretz. 1993. Human capital content of Canadian immigration 1966-1987. *Canadian Public Policy* 19 (December): 357-366
- Corbett, D. C. 1951. Immigration and economic development. *Canadian Journal of Economics and Political Science* 17 (August): 360-368.
- . 1957. *Canada's immigration policy*. Toronto: University of Toronto Press.
- Dales, J. 1964(a). The cost of protectionism with high international mobility of factors. *Canadian Journal of Economics and Political Science*, 30 (November): 512-525.
- . 1964(b). Some historical and theoretical comments on Canada's national policies. *Queens Quarterly*, 297-318.
- . 1967. *The protective tariff in Canada's development*. Toronto: University of Toronto Press.
- Dales, J. H., et al. 1967. Primary products and economic growth. *Journal of Political Economy* (December): 315-322.
- DeVoretz, D. J., ed. 1995. *Diminishing returns: The economics of Canada's recent immigration policy*. Toronto: C. D. Howe Institute, and Vancouver: The Laurier Institution.
- . The political economy of the Canadian immigration debate: A crumbling consensus (http://www.riim.metropolis.net/research-policy/index_e.html).
- Foot, D. 1996. *Boom, bust and echo*. Toronto: Mcfarlane, Walter and Ross.
- Freeman, G. P. 1995. Models of immigration politics in liberal democratic states. *International Migration Review* 29 (Winter): 881-902.
- Rawls, J. 1971. *A theory of justice*. Cambridge: Harvard University Press.
- Roy, A. S. 1987. An analysis of substitutability and complementarity of immigrants and Canadian-born work force. *Labour Market Bulletin* 4 (October): 5-11.
- Serletis, A. 1992. Export growth and Canadian economic development. *Journal of Development Economics* 38 (January): 133-146.
- Timlin, M. 1960. Canada's immigration policy, 1896-1910. *Canadian Journal of Economics and Political Science* 26 (November): 517-532.

Williamson, J. G. 1974. *Late nineteenth century American development*. Cambridge: Cambridge University Press.

———. 1975. Migration to the new world. *Explorations in Economic History* (Summer): 357-389.

Commentary Series

Number	Author (s)	Title	Date
96-01	Don J. DeVoretz	SFU-UBC Centre for Excellence for the Study of Immigration and Integration: Some Remarks	04/96
96-02	Don J. DeVoretz	The Political Economy of Canadian Immigration Debate: A Crumbling Concensus?	04/96
96-03	Don J. DeVoretz	Immigration to Vancouver: Economic Windfall or Downfall?	11/96
97-01	Don J. DeVoretz	RIIM: Research, Structure and Dissemination in 1996-97	03/97
97-01F	Don J. DeVoretz	RIIM: recherche, structure et dissémination en 1996-97	03/97
97-02	Don J. DeVoretz	Ethics, Economics and Canada's Immigration Policy	03/97

Back issues of working papers are available for \$5 from

Vancouver Centre of Excellence: Immigration, WMX4653, Simon Fraser University, 8888 University Drive, Burnaby, B.C, Canada V5A 1S6. Tel: (604) 291-4575 Fax: (604) 291-5336

E-mail: riim@sfu.ca

<http://www.riim.metropolis.net/>