

Vancouver Centre of Excellence



Research on Immigration and Integration in the Metropolis

Working Paper Series

No. 03-02

Citizenship, Passports and the Brain Exchange Triangle

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January 2003

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:

- Human Resources Development Canada
- Department of Canadian Heritage
- Department of the Solicitor General of Canada
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- Canada Mortgage and Housing Corporation
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Acknowledgements: Support from RIIM, the Metropolis Centre for Immigration and Integration in Vancouver is gratefully noted. Critical comments of D. Coulombe improved the logic and exposition of the essay.

I. Introduction

The purpose of this paper is to describe a theoretical framework in order to analyze the economic and political incentives that have induced a world-wide brain circulation. For purposes of this essay we define brain circulation as a process of human capital accumulation and exchange across a spatial dimension. For example, a Chinese citizen can obtain his/her first degree in China, migrate to North America for a second degree and later migrate and work in Australia or return home to China. Why this person chooses to stay or move while resident in any one of these locations partially depends upon a host of economic factors (Ma and DeVoretz, 2002 and DeVoretz and Itturalde, 2000a-b). Moreover the differential economic performances of those who stay and leave have been documented and predicted in two cases (Ma, Zhang and DeVoretz, 2002). This paper will extend this limited literature by uniquely exploring the political institutions and the actions of their agents in the sending and receiving countries which either inhibit or encourage this movement. In addition, we will address several policy related questions including:

- Have state institutions and their agents converted a heretofore permanent brain drain flow into a temporary triangular exchange?
- How do state institutions encourage the retention (or loss) of the most (least) talented of the highly skilled movers?
- Who are the winners and losers under this regime of brain circulation?
- What are the implications on the direction and magnitude of this brain circulation when a set of individual countries alternatively recognize, single, dual or multiple citizenships?

II. Triangular Movement

Figure 1: Triangular Human Capital Transfers

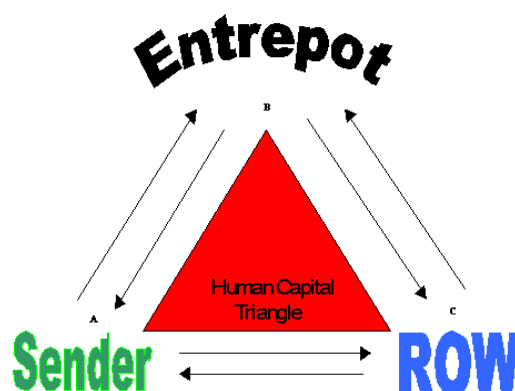


Figure 1 will allow us to construct a stylized view of the triangular brain circulation that has arisen in the beginning of the 21st century. At the base of the triangle is country A. We will argue that a post secondary student faces limited educational opportunities at home (country A), and, if politically and financially possible, he/she will choose to migrate to an entrepôt country (B) at the apex of the triangle for further training (Zhang and DeVoretz, 2002).¹ This entrepôt country by definition has a host of special political institutions which attract student-immigrants.² These institutions through their agents supply subsidized human capital to the potential immigrant-student and a host of public goods which differentiates the entrepôt country from other immigrant destination regions (“rest-of-the-world”). The student-immigrant could of course choose to move to the rest-of-the-world (ROW) either before or after moving to the entrepôt country. The absence of state agents and the lack of provision of publicly subsidized human capital make the ROW destination an unlikely choice for an average student in country A. However, the ROW becomes a likely destination for risk-taking highly skilled immigrants residing in either country A or more likely in the entrepôt country. In sum, country A supplies both students and highly skilled immigrants to two possible locations, an

¹ If the sending region were for example China then several political and economic barriers must be overcome before he/she could move. First, the student must be accepted in a bona fide entrepôt educational institution and prior to leaving would need both a passport and hard currency. Next, the student would require a student visa for the entrepôt country and acceptance at a post-secondary institution does not necessarily remove that barrier. For example only 40% of Chinese students accepted at Canadian post-secondary institutions were granted student visas circa 2000.

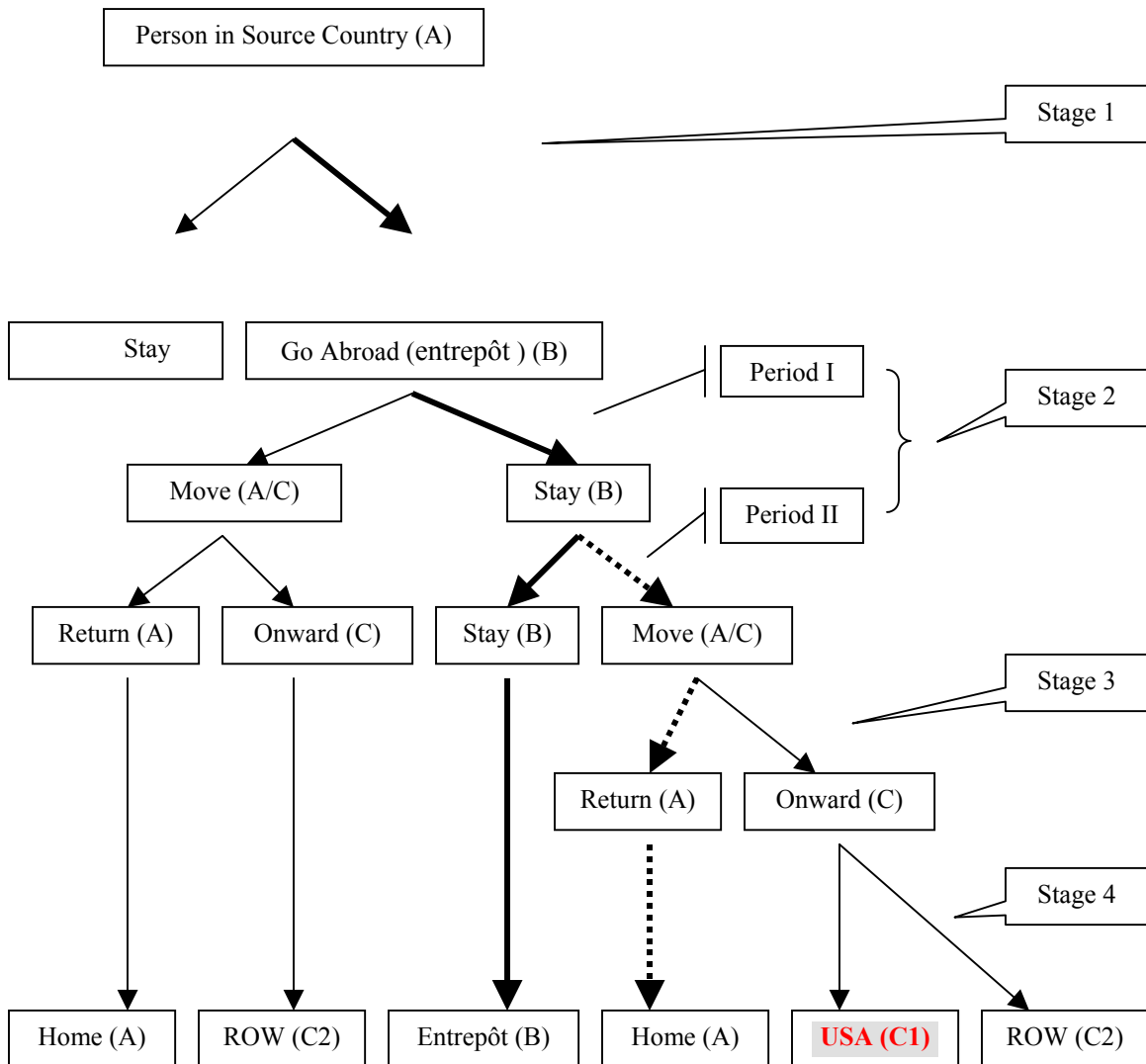
² Traditionally an entrepôt country held imported goods in storage to be later re-exported after some further processing. In this context, an entrepôt country is an immigrant receiving country which provides subsidized human capital to the immigrant before he/she returns home, moves onward or stays in the entrepôt country. Several examples of entrepôt immigrant receiving countries come to mind including, Australia, New Zealand, Israel, Germany and possibly the entire European Union.

entrepôt country with public agents or the ROW with no public agents. There are of course many complex patterns of movement embedded in Figure 1 depending on the strategy of the individual student immigrant and we outline these below.

III. Individual Immigrant Decision Tree.

We now turn to Figure 2 which will allow us to better understand the stay-move choice by the individual student-migrant at each point in the triangle and the role of the state in influencing this choice. At the outset we assume that our student in country A is myopic. Thus, he/she will not have an end game solution to this strategic game but will face a binary choice at each location and thus Figure 2 presents a nested four stage choice framework.

Figure 2: A Four Stage Nested Stayer-Mover Model



Stage I

In stage 1 the potential migrant can either choose to be a post-secondary student at home (country A) or migrate to an entrepôt country (B) to obtain a post-secondary degree.³ In other words the student can stay in country A (home) and obtain an education and then at the end of stage 1 leave for an entrepôt country.⁴ An alternative migration-education strategy faced by the student in country A is to leave country A to obtain an education in the entrepôt country in period I. This educational choice, either at home (country A) or in the entrepôt country (country B) has been modeled extensively and Zhang and DeVoretz (2002) summarize the main economic factors which condition this choice.⁵ Furthermore, Ma and DeVoretz (2002) introduce agents in the home (A) and entrepôt country(B) which also condition the student or employed migrant's decision to stay or move.⁶ It is argued here that each agent in the origin or entrepôt country can confer or deny political and economic benefits on the student or migrant to influence the probability of staying or leaving in either environment. In the origin country (A), we assert that an Emperor exists whose role is to gather taxes and confer benefits on its citizens in accordance with their lobbying efforts.⁷ If the potentially highly trained student is unsuccessful in lobbying the emperor for admission to higher education in country (A) and exit is permitted with limited restrictions this student will seek an outside education in country (B).

We argue that the majority of those who leave country A as students will attempt to enter an entrepôt country (B) since there exist two agents which confer added benefits on this potential student migrant.⁸ The first agent in the entrepôt country (B) is a quasi private agent which represents a

³ Two factors affect the educational state of the potential mover. First, the educational conditions in the sending region relative to the conditions in the receiving country will influence the choice to stay or move for education (see Zhang and DeVoretz, 2002). However, for purposes of this essay we will concentrate on the student who migrates for education to highlight the role of the student visa in influencing the decision to move.

⁴ We omit the obvious possibility of moving from country A to country C (USA/R.O.W.) for education or employment. We do this for two reasons. First, we want to focus on the role of agents influencing the stay-move decision and by definition the USA or R.O.W. has no agents. Secondly, there exists an extensive literature on the A-C movement (Coulson and DeVoretz, 1992).

⁵ Zhang and DeVoretz (2002) focus on the economic conditioners which affect the student's decision to study at home or move to an entrepôt country to receive schooling. Supply factors in the home country are the first set of determinants for the stay-move decision. These factors include the number of available admissions by educational specialty and the tuition in country A. Given that the origin country A has limited high quality educational opportunities, marginal students who were not selected for these spots would be more likely to migrate for education abroad *ceteris paribus*. However, once educational demand factors enter, then the outward flow of migrant students will increase in quality from country A. Student migrants will demand an education which yields a high rate of return both at home and in the entrepôt country and/or the R.O.W. and this will lead to the migration of better students.

⁶ By definition the rest-of-the-world (ROW) does not have an agent.

⁷ See Epstein *et al.* 1999 for a complete exposition of the role of Country A's emperor in the migration process.

⁸ If the student chooses the USA or R.O.W. for their educational location then a second schematic would be needed. We recognize this possibility in Figure 1 and have modeled same (DeVoretz and Zhang, 2002) and refer the interested reader to that exposition.

publicly subsidized institution (University, Non-government Organization) and confers these subsidized benefits on the successful student applicant in period I of stage II.⁹ These first set of benefits come in the form of specific human capital (e.g. a subsidized engineering degree) which may have limited or extensive portability to the rest-of-the-world including the origin country depending on the exact degree earned.¹⁰

Stage 2 Period I

The second form of benefits conferred on the migrant student again in stage 2 period I in the entrepôt country are alternative forms of general human capital (English, cultural mores, certification of past degrees, knowledge of job market, etc.) which are more or less portable across economies.¹¹ Why would an entrepôt country subsidize the acquisition of portable general human capital (e.g. language skills, skill certification, etc.) which can be used anywhere in the rest-of-the-world (ROW)? Ironically the rationale most often cited in the entrepôt country to provide a subsidy to these student/immigrant arrivals is to induce them to stay at the end of period I and repay (via taxes) their subsidized education. However, if there exists an outside regime (home or the ROW) which will offer the student-immigrant a greater reward for the subsidized capital then, the acquisition of state subsidized general human capital would increase the probability of his/her leaving at the end of period II.¹² This move can occur at the end of period I-stage 2 when the student-immigrant resident returns home (A) or moves to a limited number of onward destinations (only C2 countries).¹³

⁹ The settlement worker or the Period I agent, by definition provides human capital to increase the productivity of all immigrant arrivals in the entrepôt society and reduce the risk of return migration. Settlement workers may also have altruistic motives, namely to ease the immigrant's integration into society. However, in entrepôt countries such as Australia, Canada, Germany, and especially Israel, government subsidies to private altruistic agencies is predicated on increasing the staying probability of the recent arrival and to increase the immigrant's contribution to the society. To this extent this governmental motive is not altruistic.

¹⁰ A Ph.D in pure mathematics is completely portable while a degree which requires local certification, for example the law, is much less portable. In the latter case there exists little incentive to leave the entrepôt country in which the degree is obtained.

¹¹ It is also important to note since general human capital is very portable no employer would have an incentive to pay for this investment. Hence, the individual would be forced to pay for this type of education if the state did not subsidize or completely provide it.

¹² DeVoretz and Iturralde (2000b) offer evidence of the very high rewards for a subsidized education in an entrepôt country (Canada) for a leaver who works in the United States. For example, if a Canadian obtains their Bachelor of Arts in Canada and stays to work in Canada circa 1996 the rate of return from this education is 12% (pre-tax). However, if this individual with the same education moved to the United States the rate of return rises to 44%.

¹³ Note entrance to the USA is excluded since this country can only be entered with an entrepôt passport in this model.

Stage 2 Period II

After our prototypical student-immigrant has acquired subsidized specific and general human capital and decides to stay in B at the end of stage 2-period I several legal institutions and state instruments intervene to affect the eventual stay-leave decision at the end of period II in stage 2. The first set of state instruments which influence the stay-move decision in the entrepôt country actually exist in the origin country (A). The Emperor is the sole agent in the sending country (A) who can issue several types of passports which ostensibly have the function of insuring an expeditious passage to the entrepôt country, but also define the terms and conditions of return migration. Let us review two extreme cases of the terms and conditions embedded in country A's stylized passports which affect the potential returning migrant's decision to stay in country (B) or leave for home (A) at the end of period II-stage 2. First, under passport P1, the Emperor requires that the student-immigrant return at the end of period II in country (B) or forfeit a previously posted bond. Under passport P2 the Emperor alternatively allows an indefinite extension of the student-immigrant stay in the entrepôt (B) or countries (USA or ROW) without penalty or sanction. Thus, the Emperor can either encourage or discourage the move-stay decision of a student-immigrant from country (A) in the entrepôt country (B) at the end of period II -stage 2 depending upon the type of passport issued in stage I.

At the end of period II-stage 2 in the entrepôt country, a second agent in the entrepôt country enters the stay-move decision process for a person who decided to stay at the end of period I. This agent is a public agent who can either compel or encourage the ascension to citizenship in country (B) by the student-immigrant at the end of period II. In the extreme case, the student-immigrant may be compelled to exercise the right of ascension to citizenship or leave the entrepôt country. In other words, the ascension to citizenship constitutes an “up or out” decision at the end of period II-stage 2.¹⁴ Under these conditions the student-immigrant applies for citizenship and is either accepted, or rejected and must leave for home (A) or (C2 or ROW).¹⁵ At this point the Emperor in the origin country reappears in the decision process. If the student-immigrant is successful in the ascension to citizenship in the entrepôt country, the Emperor may (will) prohibit the erstwhile resident from returning and working in the origin country (A) by denying him/her dual citizenship and hence removing the possibility of returning home to work.¹⁶ Thus, we assert that ascending to citizenship in

¹⁴ Canada requires that permanent immigrants ascend to Canadian citizenship after six years or jeopardize their residency. In addition, Canada allows an application for citizenship in the first four years if three of the past four years were spent in residence in Canada. See <http://laws.justice.gc.ca/C-29/31864.html> Other entrepôt countries such as Australia, Germany, and New Zealand have introduced minimum waiting periods before ascension to citizenship is allowed.

¹⁵ Access to USA is limited to only those immigrants in country B who ascend to citizenship.

¹⁶ Many countries (Germany, Netherlands, United States, etc.) either deny or discourage the holding of dual citizenships which places an implicitly high tax on ascending to citizenship in the entrepôt countries.

the entrepôt country (B) can block a return move to country A, allows a move to C1 (USA) and increases the probability of a move to C2. These various outcomes are byproducts of the public good aspects of both citizenship and the resulting passport issued by country B. As we noted earlier, return movement to country A after ascending to citizenship in B is blocked by the lack of recognition in country A of dual citizenship. However, country B's citizenship allows free access to any free mobility zone covered under various trade treaties (NAFTA.) that country B has signed. In this case, the new immigrant free rides on the inherent public good of citizenship in B which is recognized by country C1 (USA) through prior negotiation with citizens of country B.¹⁷ We also argue that benefits of the past good actions of country A's past passport holders will confer mobility benefits on new passport holders in country B. For example, new passport holders in the entrepôt country now will be allowed entrance to a larger set of countries in C2 without the requirement of a visitor's visa or waiting in long queues to obtain a working visa.¹⁸

In sum, we have outlined a complex decision process with many implied strategies for the move-stay decision of the student-immigrant while residing in either countries (A) or (B). Figure 2 in fact outlines seven possible strategies from (A-A-A) to (A-B-C2) and only under a few set of conditions will a dominant strategy appear unless we know the socio-economic conditions of the immigrant and the particular political institutions and regulations in each country. In the next section, we will outline the most common strategies employed under Figure 2 by the student-immigrant circa 2003 through reference to one triangular case study.

IV. Two Immigration Strategies

In order to isolate the legal and institutional forces which influence the triangular brain circulation flows we propose to outline two strategies (out of a possible seven) for our student-immigrant to follow in Figure 2. As we review each strategy we will describe the institutions and agents which influence the stay-move choice of a Chinese immigrant to Canada the entrepôt destination in North America. Strategy I follows the tree described in Figure 2 as A-B-B-B-B or the case of a Chinese student who immigrates to Canada for further education and who ultimately stays in Canada at the end of stage 2. Strategy II is depicted by the tree in Figure 2 as A-B-B-A-A where the Chinese immigrant migrates to Canada and then returns home to China (SAR).

¹⁷ Also, immigrants who enter the European Union and ascending to citizenship in one member country confers similar mobility rights on erstwhile immigrants. For example, legal immigrants to Germany who qualify and obtain citizenship can freely move and work in any EU country which has signed the Schengen agreement.

¹⁸ The public good aspect of citizenship in country B arises from the good behavior of country A's past citizen-travelers.

Strategy I of the student mover to Canada is influenced at first by the Chinese educational immigration policy. As argued by DeVoretz and Zhang (2002) the absence of post-secondary educational opportunities coupled with high degree of transferability encourages student immigration to Canada. Currently Chinese post-secondary students represent the second largest source country for Canadian foreign students.¹⁹ This represents a dramatic rise in Chinese visa students in Canada in the 1990's and is owing to several major policy changes in each country. First, since 1992 China has provided a private passport which allows greater student mobility, and secondly, Canada's student visa regulations for Chinese students have been relaxed. The rejection rate for Chinese applications for student visas was as high as 60% in 1995 and now has fallen to 40%. This decline in the rejection rate was a recognition by Canada that the terms of the visa would be respected, namely that it was a temporary visa in which the applicant planned to return home.²⁰

Outcomes of Mover-Stayer

We posed a number of questions about the size and selectivity of those who participate in the brain exchange triangle. Table 1 enables us to answer some of the questions initially posed in this essay for the two streams ABBBB (stayers) and ABBA (leavers). First, column 4 in Table 1 suggests that the Chinese (Hong-Kong) immigration to Canada has replicated the triangular flow for the highly skilled since nearly 40% of all Hong-Kong returnees originated from Canada. A Canadian returnee to Hong Kong is defined as someone born in Hong-Kong and resident in Canada 5 years prior to the Chinese census (i.e.1995) and hence the return flow reported is conservative.²¹ Our model predicted that the returnees should be either students or highly skilled since they have the greatest incentive to originally move and perhaps return. It is clear from both the reported educational levels and occupational composition of the Chinese returnees from Canada confirm this prediction with over 35% of the returnees obtaining their university degrees overseas and nearly 75% working in professional or managerial occupations. In contrast, those Chinese-Hong Kong immigrants who stayed in Canada had a much lower level of educational attainment, with only 25% holding a university degree. The motivation to return as opposed to staying in Canada is revealed in the last three rows of Table 1. Hong Kong returnees from Canada earned more than twice as much in pre-tax income in Hong-Kong under a much more unequal income distribution (Gini of 13 in Hong Kong

¹⁹ Circa 2000 7,840 Chinese student visas were issued to study in Canada with only Korea sending more.

²⁰ In addition there exists another entry point for the Chinese immigrant: a permanent visa in the independent category which requires substantial human capital to qualify for admission. This entry gate has become the largest single source of entry for Chinese highly skilled immigrants to Canada. The existence of this gate reduces the probability of a highly educated Chinese overstaying his her student visa while in Canada since they can use this gate to gain permanent immigrant status.

versus 34 in Canada). In other words those who returned were more productive and less risk adverse. Finally, one demographic feature stands out in Table 1: Canadian returnees were concentrated in the 20-29 year old group and the sons or daughters of the head of household (38%). This reflects a major proposition of the brain-exchange model, namely that recent graduates after obtaining their subsidized degrees leave for a low tax environment to exploit their human capital.²²

A third strategy A-A in Figure 2 represents the strategy of a chronic stayer in Hong-Kong. Data in Table 2 (Appendix I) confirm the crucial proposition of the brain-exchange model since only 10% stayers in Hong Kong obtained a university degree and with nearly 70% in low skilled occupations who earned only 60% of the monthly income of the Canadian returnees.

²¹ Clearly, the 33, 676 Canadian returnees reported in Column 4 is only a sub-sample of all returnees since other erstwhile Chinese residents in Canada were present in Hong-Kong in 2000 but only resident in Canada after 1995.

²² All of these triangular patterns for returnees are reproduced in the smaller USA returnee group.

Table 1: Characteristics of Hong Kong - Born Returnees and Stayers in Canada: Circa 2001

	Returnee To Hong Kong from					Hong Kong Born Stayer in Canada*	
	All		Canada	USA	Others		
Total	85793	100.0%	33676 (39.3%)	17778 (20.7%)	34339 (40.0%)	6955	100.0
Age:							
0-19	8236	9.6	9.4	4.4	11.1	1506	21.7
20-29	32430	37.8	37.5	39.4	37.6	1272	18.3
30-39	19990	23.3	21.5	26.1	23.8	1745	25.1
40-49	12354	14.4	14.9	14.4	14.1	1630	23.4
50-59	6263	7.3	8.5	8	6.3	413	5.9
60	6434	7.5	8.1	7.7	7.1	389	5.6
Sex:							
Female	42811	49.9	53	48	49	3519	50.6
Male	42982	50.1	47	52	51	3436	49.4
Relation to Head of Household:							
Head	29170	34.0	33.5	35.9	33.9	1966	28.3
Spouse	14756	17.2	18.2	18.0	16.3	1634	23.5
Children	32430	37.8	38.2	37.1	37.7	2741	39.4
Maid	86	0.1	0.0	0.0	0.1	n/a	n/a
Others	9351	10.9	10.1	9.1	12.0	614	8.8
Education:							
Primary School or less	9180	10.7	9.2	6.4	13.1	392	6.4
Secondary School & Diploma	31314	36.5	40.3	23.6	37.5	4201	68.2
Local Uni. Degree	12612	14.7	15.3	15.8	13.9	1571	25.5
Overseas Degree	32687	38.1	35.2	54.2	35.5		
Occupation:							
Low Skill	13509	26.7	25.8	16.9	30.2	1068	27.7
Assistant Professional	15584	30.8	33.7	29.8	29.2	951	24.7
Professional	10726	21.2	16.9	28.4	21.9	1038	26.9
Managerial	10777	21.3	23.6	25.0	18.7	796	20.7
Total	50596	100	100	100	100	3853	100.0
Earnings:							
1-5,999	2682	5.3	5.1	4.4	5.6	2382	45.7
6,000-9,999	5970	11.8	10.0	8.3	14.1	739	14.2
10,000-14,999	12345	24.4	26.7	17.6	24.7	753	14.5
15,000-19,999	7994	15.8	17.0	17.6	14.7	552	10.6
20,000-29,999	8348	16.5	18.3	17.5	14.8	525	10.1
>=30,000	13256	26.2	22.8	34.6	26.0	256	4.9
Total	50596	100.0	100.0	100.0	100.0	5207	100.0
Median (HK Dollar/month)	16520.38		16500.00	20000.00	15500.00		7091.03
Mean (HK Dollar/month)	25543.01		23314.00	33682.00	24657.00		10234.78
Gini Coefficient**	11.96		13.21	5.55	1.55		34.38

Source: 2001 census data, Department of Census and Statistics, Hong Kong SAR, PRC.

Notes: *: 1996 Canadian census public use individual Microdata files, CHASS, University of Toronto, <http://datacentre.chass.utoronto.ca/census/mainmicro.html>. For earnings, sample selected: aged 15 and over; income > 0; adjusted to 2000 real CAN dollar value; exchange rate as on Dec. 31, 2000 at CAN\$1 = HK\$5.20777.

** Authors calculation.

V. Summary and Conclusions

This paper argues that there exists a triangular movement of highly skilled immigrants from a sending region to an entrepôt destination and that a select group return to the origin country to complete the triangle. In addition, we posited that immigrants who gained human capital and citizenship in the entrepôt country would be most likely to return. These predictions proved to hold in the Hong-Kong-Canada-Hong-Kong case when we investigated two strategies. The mover strategy forecasted that the return migrant would be younger, have earned a post-secondary degree abroad and would have outperformed the stayer who remained in Canada. There are further conclusions to be drawn from this Hong-Kong-Canada triangle. This triangular movement is welfare improving for the migrants in the triangle and the taxpayers in Hong-Kong but not the Canadian taxpayers. Elsewhere it has been estimated by DeVoretz and Itturalde (2000a) that each Canadian post secondary student who leaves Canada takes approximately \$230,000 (Cdn) in tax payer subsidy with them. Thus, combining the number of returnees reported in Table 1 who acquired a post-secondary education overseas (11,786) with this tax payer subsidy yields a \$2.7 billion (Canadian) drain from Canada to Hong-Kong.²³

²³ The subsidy is calculated as $(11,786) \times (230,000) = 2,710,918,000$ or \$2.7 billion.

References

- Anderson, F. and K. Konrad. 2001a. Globalization and Human Capital Formation. *IZA Discussion Paper 245*.
- . 2001b. Human Capital Investment and Globalization in Extortionary States. *IZA Discussion Paper 239*.
- Borjas, G., and B. Bratsberg. 1996. Who Leaves?: The Outmigration of the Foreign-born. *Review of Economics and Statistics* 78:165-76.
- Co, C.Y., I. Gang and M. Su Yun. 1999. Returns to Returning: Who went Abroad and What does it Matter? *IZA Paper 19*.
- Coulson, R. and D. DeVoretz. 1993. Human Capital Content of Canadian Immigration 1966-1987. *Canadian Public Policy*, 357-66.
- DeVoretz, D., and C. Iturralde. 2000a. Probability of Staying in Canada. *RIIM Working Paper 00-06*.
- . 2000b. Why do the Highly Skilled Stay in Canada? *Policy Options* March: 59-63.
- DeVoretz, D. and Z. Ma. 2002. Triangular Human Capital Flows between Sending, Entrepôt, and Rest-of-the-World Regions. *Canadian Population Studies* 29 (1):53-69.
- DeVoretz, D. and C. Werner. 2002. Canada: An Entrepôt Destination for Immigrants? In *Migration Policy and the Economy: International Experiences*, ed. R. Rotte, 37-57.
- DeVoretz, D., Z. Ma and K. Zhang. 2003. Triangular Human Capital Flows: Some Empirical Evidence from Hong Kong and Canada. In *Host Societies and the Reception of Immigrants*, ed. J. Reitz. CCIS Press (Forthcoming).
- Epstein, G.S., A.L. Hillman, and D.H. Ursprung. 1999. The King Never Emigrates. *Review of Development Economics* 3: 107-21.
- Lam, Kit-Chun. 1994. Outmigration of Foreign-born Members in Canada. *Canadian Journal of Economics* 27, no. 2 (May): 352-70.
- . 2000. Shortage of Highly Skilled Workers in Hong Kong and Policy Responses. *Journal of International Migration and Integration* 1, no. 4 (Fall): 405-26.
- Ma, Z., 2000. Immigration Transition in Hong Kong in the 1990s. *Proceedings of the International Workshop on International Migration and Human Resources Development in the APEC Member Economies*, January 20-21, Chiba, Japan, APEC #00-HR-04.2: 215-35.
- Newbold, K. B., and M. Bell. 2001. Return and Onwards Migration in Canada and Australia: Evidence from Fixed Interval Data. *International Migration Review* 35, no. 4 (Winter): 1157-84.
- Ning, Wang. 2000. Leaving China: Government Involvement in and Control of Chinese Emigration 1949-2000. In *Papers on Chinese Migration IV*, ed. D. Lary. Vancouver: UBC: Institute of Asian Research.
- Rekai, P. 2002. US and Canadian Immigration Policies: Marching Together to Different Tunes, C.D. Howe Institute *Commentary*, November.
- Stark, O., C. Helmenstein and A. Praskawetz. 1997. A brain gain with a brain drain. *Economic Letters* 55: 227-

Appendix I

Table 2: Demographic and Economic Attributes of Stayers, Returnees and Other Migrants in Hong Kong

	Total	All		Returnee	Migrants from		
		6423591	5898351		85793	Mainland	LDCs
					254620	129189	55638
Age:							
0-19	1279908	19.9	19.5	9.6	41	3.9	20.5
20-29	994949	15.5	14.5	37.8	12	52.4	20.9
30-39	1265627	19.7	19.1	23.3	22.5	32.9	36.3
40-49	1206450	18.8	19.3	14.4	13.5	8.6	14.4
50-59	676287	10.5	11	7.3	5.6	1.8	5.4
60	1000370	15.6	16.6	7.5	5.5	0.5	2.6
Total	6423591	100	100	100	100	100	100
Sex:							
Female	3287782	51.2	49.7	49.9	64.9	92.5	54.6
Male	3135809	48.8	50.3	50.1	35.1	7.5	45.4
Total	6423591	100	100	100	100	100	100
Relation to Head of Household:							
Head	2096185	32.6	34.1	34	12.3	4.7	36.6
Spouse	1346710	21	21	17.2	29.2	4.7	21.3
Children	2354072	36.6	36.9	37.8	50.3	3.5	24.2
Maid	180164	2.8	1.1	0.1	0.1	83.5	12.5
Others	446460	7.0	6.9	10.9	8.1	3.6	5.4
Total	6423591	100	100	100	100	100	100
Education:							
Primary School or less	2234765	34.8	35	10.7	52	16	18.3
Secondary School & Diploma	3480396	54.1	54.9	36.5	43.2	66.8	31.2
Local Uni. Degree	401373	6.3	6.5	14.7	1.5	0.4	4.7
Overseas Degree	307057	4.7	3.7	38.1	3.3	16.8	45.7
Total	6423591	100	100	100	100	100	100
Occupation:							
Low Skill	179737	68.4	67.9	26.7	85.9	96.9	31.5
Assistant Professional	349606	15.3	15.9	30.8	5.5	0.9	15.7
Professional	2220192	5.5	5.4	21.1	1.7	0.8	18
Managerial	498542	10.8	10.8	21.3	6.9	1.4	34.8
Total	3248077	100	100	100	100	100	100
Income from Main Employment:							
0-5,999	622594	19.1	15.8	5.3	42.7	92.4	24.1
6,000-9,999	793042	24.4	25.4	11.8	35.8	2.7	4.5
10,000-14,999	742635	22.9	24.1	24.4	10.5	1.9	7.7
15,000-19,999	370862	11.4	12	15.9	3.8	0.7	6.8
20,000-29,999	362154	11.1	11.7	16.5	3.7	0.7	11.5
>=30,000	356790	11	10.9	26.2	3.6	1.6	45.4
Total	3248077	100	100	100	100	100	100
Median Income (HK\$/month)		10000.00	10500.00	16520.38	6000.00	3671.00	25000.00
Mean Income (HK\$/month)		15812.00	15972.00	25543.01	9084.50	5227.70	39310.00
Gini Coefficient*		0.2721	0.2662	0.1196	0.2323	0.4647	0.0448

Source: 2001 census data, Department of Census and Statistics, Hong Kong SAR, PRC.

Note: * authors calculation.

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