The Economic Causes and Consequences of Canadian Citizenship

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Immigrants ascend to citizenship at differential rates in Canada. This paper investigates the economic costs and benefits derived from citizenship to rationalize the differential rates of immigrant citizenship ascension. Canadian earnings evidence confirms the sizeable economic benefits of citizenship and a decomposition analysis attributes this benefit to self-selection, namely the more productive immigrants become Canadian citizens.

Au Canada, les immigrants obtiennent leur citoyenneté dans des délais variables. Nous examinons les coûts et les avantages économiques associés à la citoyenneté canadienne pouvant justifier ces délais. Une analyse des revenues à l'échelle du pays confirme l'importance des avantages économiques associés à la citoyenneté et une analyse de décomposition permet d'établir un lien entre ces avantages et l'auto sélection: ce sont les immigrants les plus productifs qui deviennent citoyens canadiens.

Key words/Mots-clefs: Economics/ Science économique; Citizenship/ Citoyenneté; Canada; Immigration.

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Introduction

One long-term goal of Canadian immigration policy is to ensure that the majority of its foreign-born arrivals become citizens. To this end, the current Canadian ministry of immigration is charged to perform both immigrant selection and citizenship functions.[1] Moreover, the majority of permanent immigrants to Canada are eligible to apply for citizenship after a three-year period of residency. The basic requirements to attain citizenship in Canada include: three years in residence, eighteen years of age or older, knowledge of one official language and adequate knowledge of citizenship responsibilities.[2]

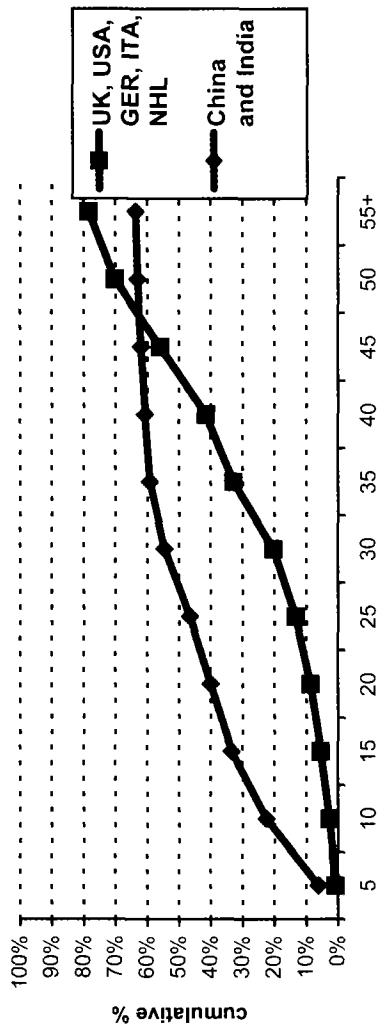
The consequence of these regulations, as partially reported in Figure 1, are that one third of the newer immigrant flows from China and India ascend to citizenship after 15 years in residence.[3] However, by their 35th year in residence, 60% of the Chinese and Indian stock of residents has acquired citizenship. A dramatically different picture emerges for Canada's traditional immigrant source countries of Western Europe and the United States. Here only 5.4% of the immigrant stock naturalize in their first 15 years in Canada and one third after 35 years in residence.

Rates of ascension vary even more dramatically for other individual immigrant source countries. In contrast to the 67% of French immigrants and 60% from Australia and Oceania who naturalized, more than 92% of immigrants from Greece and 89% from Vietnam reported Canadian citizenship in the 2001 Census of Canada. In general, immigrants from Eastern Europe, West Central Asia, the Middle East and Africa tended to take up citizenship earlier than those from Northern and Western Europe and the US.

These stylized facts belie the degree of controversy that has arisen in Canada with respect to citizenship acquisition. In 2003, the Canadian Supreme Court upheld the citizenship requirement for an array of federal government jobs, and ruled against an immigrant class action suit to recover damages from this alleged discrimination.[4] The plaintiffs argued that both job and earnings discrimination arose under this requirement, since immigrants without citizenship were unable to practice their profession and enjoy the relatively high earnings derived from a federal position.

Another issue has arisen as a byproduct of linking citizenship with the growth in return migration of erstwhile Canadian immigrants. It has been observed that over 25% of the post-1986 Chinese immigrants to Canada had returned to Hong Kong or China by 2004, many with Canadian citizenship (DeVoretz and Ma, 2002). Canadian policy-makers have made ambivalent

Figure 1
Cumulative percentage of naturalizations among permanent immigrants from high income countries (UK, USA, Germany, Italy, Netherlands) and low income countries (China and India)



Source: Authors' tabulations from 2001 Census of Canada, Statistics Canada PUMF

pronouncements over the economic impact of this phenomenon. Some policy-makers consider the returning erstwhile Canadian immigrants a Canadian asset that will increase trade and investment. Other observers are less sanguine and feel that these Chinese-Canadian emigrants represent a potential future liability, especially if they return to retire, thus putting economic pressure on the social system.[5] In addition, Canada's membership in the North American Free Trade Agreement (NAFTA) now affords all Canadian citizens, including immigrants who recently ascended to citizenship, the right to work in the US in selected highly skilled jobs. This exacerbates the concerns over Canada's brain drain (DeVoretz & Iturralde, 2001).[6]

Beyond these broad policy issues, a series of fundamental questions arise, including: (a) What are the individual socioeconomic determinants that affect the immigrant's decision to ascend to citizenship at various stages in their lifetime?; and (b) do immigrants economically gain in the labour market from their ascension to citizenship?

In order to answer these questions, we propose to model the effect of economic, social, political and demographic variables on the immigrants' decision to ascend to citizenship. Next, we will measure the economic impact of citizenship on the earnings of immigrants. In the remainder of the paper, we will provide a brief literature review, then describe our economic model followed by our results and conclusions.

Literature

The economic literature on citizenship primarily consists of two separate streams. One view attempts to rationalize an immigrant's decision to acquire citizenship and the other view investigates the economic consequences of such a decision. The evidence on the determinants of acquiring citizenship remains ambiguous largely due to the specifics of the populations studied and the varying nature of the data used. While some authors (Kelley & McAllister, 1982; Portes & Mozo, 1985) insist on the importance of economic variables, such as education, occupation and income, others (Bernard, 1936; Barkan & Khokhlov, 1980; Portes & Curtis, 1987) put forward cultural assimilation and demographic characteristics as major determinants of the immigrant's naturalization decision. With the aid of 1980 US Census microdata, Yang (1994) applied a cost-benefit framework to investigate the effects of individual characteristics and socioeconomic conditions of home and host countries on the immigrant's citizenship decision. His findings

provide evidence that successful cultural and economic integration are significant predictors of immigrant naturalization in the US. Although he demonstrated the importance of contextual factors such as urban concentration and home country level of development, the availability of dual citizenship did not obtain the expected effect in Yang's sample.

The remaining stream of economic studies of citizenship ignores the socioeconomic rationale for becoming a citizen and addresses only the possible economic impacts of immigrant citizenship. Chiswick (1978) in his seminal work on earnings tested for an earnings effect from citizenship and concluded that when the number of years in residence is held constant, there is no significant earnings effect derived from naturalization. However, Bratsberg et al. (2002), using a US youth panel data set, found that immigrant ascension to citizenship alters immigrants' occupational distribution and raises their earnings. Moreover, they argue that these effects are greater for immigrants from less developed countries.

Other economic studies of labour market outcomes of citizenship are more limited in scope since they mostly incorporate the citizenship effect as an addendum to a larger study. Pivnenko and DeVoretz (2004) found a strong citizenship effect on Ukrainian immigrant earnings in Canada. Mata (1999) reports no evidence on the economic impact of Canadian citizenship on immigrant earnings after conducting a principal components analysis with 1996 Canadian data. In reviewing the economic outcomes of Chinese-Canadian citizens who returned to Hong Kong, DeVoretz and Zhang (2004) found that returnees earned higher incomes in Hong Kong than any other resident group. In the Swedish case, Bevelander (2000) reports that the log odds of obtaining employment improved for those immigrants who obtained Swedish citizenship in 1990.

In sum, none of these existing studies offer a comprehensive view of both the economic motives for citizenship acquisition and the subsequent labour market impacts. We will attempt to fill this void below.

Theory: Costs and Benefits of Ascending to Canadian Citizenship

The economic problem that immigrants face is to choose a state: citizenship or non-citizenship, that maximizes their income net of citizenship ascension cost given their human capital stock. DeVoretz and Ma (2002) imbed the citizenship decision inside a more general model of moving and staying. Each stage of this journey involves a decision to move or to stay, and this decision is, in turn, conditioned by possible ascension to citizenship.

To highlight the citizenship decision, we focus on the movement path between the sender country (A) and the receiving country (B or Canada). Initially, the immigrant resides in country A and decides to move to country B. It is asserted that this movement is motivated by the prospect of higher earnings and the opportunity to acquire subsidized human capital and two public goods, including a passport and citizenship.

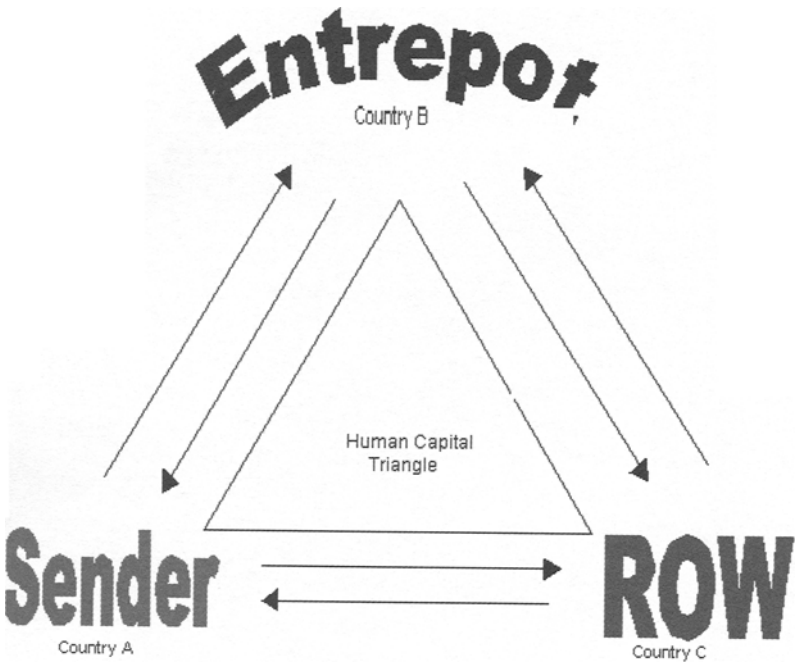
Both the acquisition of subsidized human capital and the prospect of receiving free public goods (citizenship and a passport) now increase the probability that this immigrant will ascend to citizenship, if the expected earnings stream in country B net of costs of citizenship acquisition exceeds the option of returning home. However, if country A (e.g., China) does not recognize dual citizenship, this will raise the cost of possible return migration and reduce the probability of ascending to citizenship in country B.[7] But will the newly ascended citizen of country B stay in country B? Only if the net income gains from staying as a citizen in country B exceed the income gains from a citizen of country B moving to country C in the rest of the world (ROW). If the cost of movement to country C is lowered via the attainment of citizenship and a passport in country B and the income in country C exceeds that earned in country B, the naturalized citizen of country B will move and become a citizen of country C. In sum, the optimization problem for the immigrant is to choose a mobility path and citizenship status in one or more of the destinations which maximizes net income given his or her human capital endowment, and the transaction costs of movement and obtaining citizenship.

The array of costs implied by citizenship acquisition differs according to the country of origin and the individual immigrant. First, in the absence of mutual recognition of dual citizenship by both Canada and the sending country, the major cost of ascending to Canadian citizenship is the loss of home country citizenship. This loss in turn implies limited access to the home country's labour market and loss of public services including social insurance and subsidized education. In addition, application fees and any foregone income arising from continued residence in Canada to fulfill citizenship residency requirements add to the costs of ascending to Canadian citizenship.

On the other hand, the benefits derived from Canadian citizenship include any wage premium paid by private and public Canadian employers to citizens, potential access to the US labour market with a NAFTA visa, and possible visa wavers by third countries.

Given these above observations and our economic model, rates of naturalization will be a function of various demographic and socioeconomic

Figure 2: Immigration Triangle



characteristics that affect monetary or non-monetary benefits associated with Canadian citizenship. For example, the immigrant's age determines his or her remaining years in the Canadian labour force and thus the size of any lifetime income premium associated with citizenship. Consequently, the older the immigrant is at immigration, the less likely he or she will become a citizen given the shorter payoff period. Similarly, with a greater level of educational attainment, an immigrant will potentially reap more income from citizenship and hence may have a greater propensity to acquire citizenship.

Successful economic integration as indicated by the immigrant's income, occupational status, and home ownership increases the benefits of remaining in Canada and adds to the costs of moving back to the immigrant's country of origin. The degree of cultural assimilation, which could be proxied by years since immigration, is expected to demonstrate a strong positive effect on citizenship acquisition rates. Correspondingly, immigrants who have lived in Canada for a long period will have a lower opportunity cost when acquiring citizenship since they are less likely to successfully reintegrate into their home country labour market. Moreover, living in urban environments with a greater concentration of immigrants and better access to labour market information can make a difference in an immigrant's perception of the benefits derived from citizenship and raise the odds of acquisition. Gender may play a role in naturalization decisions as well: Yang (1994) suggested that men have a higher inclination to seek citizenship than women since they are more likely to seek jobs where citizenship may be an advantage.

The institutional environments in both the sending and receiving countries also affect cost and benefits of acquiring Canadian citizenship. On one hand, the recognition of dual citizenship by the home country plays an important role in the immigrant's decision to naturalize. In cases where dual citizenship is not recognized by the sending country, the costs of Canadian citizenship acquisition rise and the odds of citizenship acquisition are reduced. On the other hand, changes in Canada's immigration legislation may introduce a period effect that will influence rates of naturalization. In particular, the 1976 Citizenship and Immigration Act relaxed entry requirements for immigrants from developing countries and this will possibly affect citizenship acquisition rates during the post-1980 period. These developing countries are all characterized by low opportunity costs derived from acquiring Canadian citizenship. To capture this implied differential costs for citizenship acquisition by level of development, we will divide our sample into Organization for Economic Cooperation and

Development (OECD) and non-OECD immigrant source regions.

Thus the immigrant's demographic and human capital characteristics, plus both Canada's and the source country's socioeconomic contexts, will all be incorporated in an economic model of citizenship acquisition. One outstanding modeling problem must be noted. It is quite possible that the decision to become a citizen and the resulting rise in earnings may be jointly determined. In other words, does citizenship lead to greater earnings, or do higher earnings give greater incentive to become a citizen? We will address this issue and its possible resolution in the concluding section of the paper.

Data and descriptive statistics

Our study utilizes Public Use Microdata Files (PUMF) for individuals from the 1991, 1996 and 2001 Censuses of Canada. In order to model the naturalization decision and subsequent earnings performance of immigrants across their citizenship status, we restricted our target population to immigrants of working age (25-65 years old) who reported having either permanent resident status in Canada or Canadian citizenship. Those who had not met their residency requirement for Canadian citizenship (four years or less of residence in Canada) were excluded from the sample.

Table 1 reports some socioeconomic data for the Canadian foreign-born population by citizenship status and includes those variables which most frequently appear in a human capital model of earnings.

Across all census years, the total percentage of naturalized citizens grew from 80.59% in the 1991 census to 83.6% in 2001, as the corresponding rates of naturalization in the first six years of residence increased from 10.25% to 18.0% over the period. During the 1991-2001 period, non-citizens persistently reported less education, with 50% or more having qualifications at a high school level or less; thus these non-citizens were also overrepresented in the unskilled category. The labour force participation of non-citizens was also skewed with fewer weeks worked and a smaller percentage participating full-time in the Canadian labour force as compared to the immigrants who became citizens.

Given their younger age, lower educational qualifications, lower occupational status, and smaller number of weeks worked, it is not surprising to find that non-citizens report lower wages and total incomes than citizens. In particular, in each of the three census years, non-citizens earn approximately 4,000 dollars, or at least 15%, less than citizens.

Table 1

Descriptive statistics: immigrants 24-64 years old, eligible for naturalization (4 years or more since immigration)

	1991 Census		1996 Census		2001 Census	
	Citizens	Non-Citizens	Citizens	Non-Citizens	Citizens	Non-Citizens
Sample Size, count	62676	15092	67912	14222	73731	14469
Sample Size, % per census	80.59	19.41	82.68	17.32	83.60	16.40
Age, mean	44.97	42.17	44.83	42.56	45.48	43.36
Wage and Salary Earnings, 2000 dollars, mean	$27,539	$23,240	$23,852	$19,353	$26,056	$21,894
Total Income, 2000 dollars, mean	$34,273	$28,639	$30,361	$25,102	$32,564	$27,513
Below Low Income Cut-Off, %	11.70	15.92	19.45	25.08	16.17	20.48
Years Since Immigration, %						
4-10 years	10.25	5.49	17.08	6.95	18.07	6.88
11-20 years	23.71	6.46	17.83	3.41	20.10	3.35
21-30 years	22.39	5.00	25.89	4.69	20.80	3.22
31-40 years	20.29	2.21	14.20	1.83	14.77	2.19
Over 40 years	3.96	0.25	7.68	0.43	9.85	0.77
Highest Level of Schooling, %						
High school or less	52.31	59.27	47.42	53.78	44.42	49.29
Certificate or diploma (below bachelor)	29.94	26.83	31.99	29.10	31.64	29.52
Bachelor degree	10.33	7.89	12.17	10.14	14.48	12.34
Above bachelor	6.44	5.05	7.20	5.86	8.15	7.51
Ph.D.	0.98	0.97	1.21	1.13	1.31	1.33
Occupational Skill Level (NOC 1991), %						
Professionals – skill level A (including B managerial)	28.09	21.92	27.61	21.94	30.87	25.24
Skilled – skill level B and C (excluding B managerial)	29.96	29.11	27.99	26.48	28.60	29.60
Low skill – skill levels below C	41.95	48.97	44.40	51.58	40.53	45.16
Weeks Worked, %						
0-25 weeks	12.83	16.22	13.79	16.62	11.29	13.51
26-40 weeks	10.78	13.17	11.44	13.93	10.44	12.03
41-52 weeks	76.39	70.61	74.77	69.45	78.27	74.46
Mainly Full-Time Weeks Worked, %	72.35	69.69	65.92	60.93	68.68	64.70

Source: Authors' tabulations from 1991, 1996 and 2001 Census of Canada Public Use Microdata Files, Statistics Canada

Regardless of their citizenship status, the labour market performance of immigrants followed the business cycle pattern during the study period, with the highest participation rates and real earnings reported in 1991; these subsequently dropped in 1996 and partially recovered in 2001. This general deterioration in economic conditions is reflected in reported immigrant income statistics. Between 1991 and 2001, the percentage with incomes below the Low Income Cut-Off increased from 11.70% to 16.17% for naturalized citizens and from 15.9% to 20.5% for non-citizens.

In addition, our cost-benefit analysis of the naturalization decision must account for the economic conditions in the immigrant source country context. However, the available public use data were censored and thus do not provide a complete list of the immigrant source countries. Since most of the countries were grouped into regions, we had to further reduce our working sample to immigrants who arrived from the US, United Kingdom, Germany, Italy, Netherlands, Poland, Portugal, Greece, USSR (European component), Yugoslavia, India, Peoples' Republic of China (PRC), Philippines, and Vietnam. Thus, after pooling 1991, 1996, and 2001 Census data, we obtained a final sample of 63,378 immigrants from non-OECD countries and 103,334 immigrants from OECD countries. Appendix B reports a detailed comparison of these groups by gender and citizenship status in Canada.

Results: Citizenship Acquisition

Our ascension model takes the form of a logistic function $P(Y_i = 1 \mid X_i) = \frac{\exp(X_i\beta)}{1+\exp(X_i\beta)}$ where $P(Y_i = 1 \mid X_i)$ is a probability of observing a citizen in our immigrant sample conditioned on a vector of explanatory variables X_i which includes individual attributes and the socioeconomic context variables which, in turn, may influence the naturalization decision. The vector of parameters β is estimated by the Maximum Likelihood method.

In Table 2-A, we report the results for our model of citizenship ascension for a sample drawn from all the immigrant-sending countries as listed above. The maximum likelihood estimates of the logistic model yield a curvilinear relationship between age and the naturalization rate. The rate of ascension is increasing in age but at a decreasing rate, which is consistent with our human capital view on the naturalization decision. In other words,

Table 2-A

Model of probability of acquiring Canadian Citizenship: Immigrants from all countries

	Coeff.	b/St.Er.	P[|Z|>z]	Mean of X	Elasticity
Constant	0.019187	0.164	0.8699		
Age	0.007346	1.399	0.1617	45.88071	0.055009
Age squared	-0.00011	-1.843	0.0654	2222.033	-0.03937
Years since immigration	0.080457	74.192	0	24.54317	0.322278
Post 1975 arrival	0.01155	0.295	0.7682	0.347505	0.000654
(Post 1975 arrival)*(Years since immigration)	0.021916	9.573	0	4.296566	0.015368
Years of schooling	-0.00023	-7.85	0	-57.6105	0.002147
Female	-0.10292	-7.272	0	0.510275	-0.00857
Professional	0.279808	14.964	0	0.220901	0.00957
Skilled	0.1378	7.978	0	0.244092	0.005361
Natural logarithm of total income	0.00012	4.106	0	-42.07	-0.00082
Home ownership	0.192035	12.01	0	0.777668	0.02526
Dual citizenship allowed	-0.19443	-9.606	0	0.601698	-0.01885
Census metropolitan area	0.211616	11.696	0	0.834479	0.030215
OECD origin	-1.25681	-52.936	0	0.647082	-0.11868
Number of observations		154458	Log likelihood function		68474.07
Chi squared		15186.62	Restricted log likelihood		76067.38

Notes: Logistic regression: dependent variable CTZN (1-Canadian citizen, 0-otherwise)
Source: Authors' calculations from 1991, 1996 and 2001 Censuses of Canada

the younger in age an immigrant is at naturalization, the greater lifetime benefits he or she can expect to accrue from the new citizenship status.

Years since immigration positively and significantly influenced the log odds of ascending to citizenship. As we expected, the period dummy which reflected a change in immigrant source region had a positive but statistically insignificant effect on naturalization rates. In addition, we tested for the possible effect of the 1975 citizenship law on the speed of naturalization by using an interaction variable. A positive and statistically significant coefficient on interaction of the previous two variables suggests that years since immigration became a more important factor in determining naturalization after the amended changes to the Canadian Citizenship Act.

Contrary to our expectations, the immigrant's years of schooling had a small and negatively signed effect on the immigrant's propensity to naturalize. The significantly negative coefficient for the gender dummy suggests that males are more likely to ascend to Canadian citizenship, supporting Yang's (1994) findings.

Our estimates also illustrate the role of economic assimilation in the naturalization decision. Home ownership and the logarithm of total income are significant conditioners and yield the predicted positive signs. Also, a higher occupational status yields a strong positive relationship with the rate of naturalization.

The characteristic of Canada's socioeconomic context, the Census metropolitan area indicator, is strong and positively signed, which supports the idea that living in an urban environment fosters immigrant naturalization. The significant negative coefficient for the OECD dummy indicates that the immigrant's source country level of development is an important determinant of citizenship ascension. Contrary to our expectations, the coefficient on the dual citizenship dummy which indicates the effect of source country citizenship regime on an immigrant's naturalization decision is strongly negative. This result could be explained by our data limitations. Our available list of the source countries in the OECD group (except Germany and Greece) includes only countries with a dual citizenship regime, whereas in the non-OECD group, only Poland recognizes dual citizenship. Thus, the DUAL dummy variable essentially becomes an indicator of the level of development.[8] In an attempt to alleviate this problem, we estimate separate ascension models for OECD and non-OECD source countries separately.

The results for immigrants from non-OECD countries (Table 2-B) and OECD countries (Table 2-C) differ in many respects.[9]

Table 2-B

Model of probability of acquiring Canadian Citizenship: Immigrants from OECD group

	Coeff.	b/St.Er.	P[|Z|>z]	Mean of X	Elasticity
Constant	0.027824	0.193	0.8466		
Age	-0.02812	-4.411	0	47.1923	-0.25873
Age squared	0.000297	4.199	0	2338.585	0.135624
Years since immigration	0.069934	54.884	0	28.74329	0.391939
Post 1975 arrival	0.111211	2.047	0.0407	0.191932	0.004075
(Post 1975 arrival)*(Years since immigration)	0.002172	0.72	0.4717	2.694543	0.001141
Years of schooling	-0.00018	-4.986	0	-44.9558	0.001583
Female	-0.16591	-9.908	0	0.503977	-0.0163
Professional	0.182669	8.51	0	0.236826	0.008189
Skilled	0.049896	2.485	0.0129	0.260218	0.002513
Natural logarithm of total income	.00008	2.452	0.0142	-46.2258	-0.00076
Home ownership	0.226328	11.441	0	0.807948	0.037176
Dual citizenship allowed	-0.38685	-15.116	0	0.853863	-0.05913
Census metropolitan area	0.196814	10.177	0	0.786317	0.031216
Number of observations		99947	Log likelihood function		-48222.64
Chi squared		8882.131	Restricted log likelihood		-52663.71

Notes: Logistic regression: dependent variable CTZN (1-Canadian citizen, 0-otherwise)
Source: Authors' calculations from 1991, 1996 and 2001 Censuses of Canada

In the case of OECD countries (Table 2-B), home ownership, years in Canada, occupational dummies and the metropolitan area indicator are significant and correctly signed. The coefficient for the period dummy is positive and significant, whereas its interaction with years since immigration is insignificant. The dual citizenship dummy remains negatively signed. In addition, the age variable now obtains an incorrect sign.

The non-OECD results reported in Table 2-C are in sharp contrast to the OECD results. First, the effects of age yield the expected signs. Home ownership remains statistically significant and correctly signed, however, the smaller coefficient indicates that it has become less important. Occupational dummies, the urban area indicator, years since immigration, and period of immigration have strong positive effects on the immigrant's decision to ascend to citizenship. Moreover, the interaction of the former two variables becomes highly significant, suggesting that the legislation introduced in 1975 accelerated rates of naturalization for recent immigrant arrivals from our selected non-OECD countries. Finally, the dual citizenship dummy assumes the correct positive sign.

Economic Impact: Earnings Shift

In this section, we explore the effect of Canadian citizenship on the earnings performance of immigrants across gender and source country groups. We use the Ordinary Least Squares (OLS) method to estimate the standard log-linear earnings model where the natural logarithm of annual wage earnings is regressed on age, years of schooling, and language ability, with controls that include number of weeks worked as an indicator for full-time work and years since immigration.

Turning to Table 3, we observe that immigrants from non-OECD countries (both males and females) demonstrate a greater and statistically stronger effect derived from the years since immigration on earnings. The observed relative importance of years in Canada for workers from the developing world could be explained by their longer cultural adjustment.[10] In addition, problems with recognition of foreign credentials and out-of-Canada work experience force them to invest more time in retraining and volunteering before they land permanent jobs and reap the income rewards.[11]

Holding constant other variables—age, schooling, years in Canada, language ability, and labour market controls—Canadian citizenship increased immigrant earnings from 4% to 14.4%. Our results suggest that this

Table 2-C

Model of probability of acquiring Canadian Citizenship: Immigrants from non-OECD group

	Coeff.	b/St.Er.	P[|Z|>z]	Mean of X	Elasticity
Constant	-2.13254	-10.1	0		
Age	0.074623	7.82	0	43.47587	-0.25873
Age squared	-0.00089	-8.121	0	2008.333	0.135624
Years since immigration	0.11125	43.625	0	16.84216	0.391939
Post 1975 arrival	0.139678	2.288	0.0221	0.632753	0.004075
(Post 1975 arrival)*(Years since immigration)	0.038884	8.821	0	7.233907	0.001141
Years of schooling	-0.00032	-6.382	0	-80.813	0.001583
Female	0.069709	2.62	0.0088	0.521821	-0.0163
Professional	0.588839	14.643	0	0.191704	0.008189
Skilled	0.32771	9.421	0	0.214526	0.002513
Natural logarithm of total income	0.000266	4.793	0	-34.4503	-0.00076
Home ownership	0.089989	3.248	0.0012	0.722148	0.037176
Dual citizenship allowed	0.151853	3.827	0.0001	0.139348	-0.05913
Census metropolitan area	0.289984	5.799	0	0.922786	0.031216
Number of observations		54511	Log likelihood function		-19767.75
Chi squared		6040.725	Restricted log likelihood		-22788.12

Notes: Logistic regression: dependent variable CTZN (1-Canadian citizen, 0-otherwise)
Source: Authors' calculations from 1991, 1996 and 2001 Censuses of Canada

Table 3

OLS estimation of log-linear earnings model: Citizenship Effect on immigrant earnings.

	(1) females non-OECD	(2) males non-OECD	(3) females OECD	(4) males OECD
(Constant)	4.632	4.357	4.411	4.457
	(42.820)	(40.563)	(49.593)	(54.064)
Age	.038	.055	.040	.071
	(7.573)	(11.286)	(10.380)	(20.581)
Age squared	-.0004	-.001	.000	-.001
	(-7.301)	(-10.904)	(-9.762)	(-18.427)
Years since immigration	.013	.013	.003	.0005
	(16.293)	(17.100)	(6.642)	(-.605)
Total Years of Schooling	.035	.035	.037	.027
	(18.015)	(18.252)	(21.404)	(19.475)
English or/and French	.043	.097	.017	.081
spoken at home	(2.859)	(6.349)	(1.161)	(6.578)
Naturalized citizen	.126	.144	.058	.041
	(7.713)	(8.887)	(5.128)	(3.817)
Professional occupation	.345	.289	.409	.356
	(18.478)	(16.534)	(31.243)	(29.978)
Skilled occupation	.089	.098	.174	.142
	(5.361)	(6.782)	(15.321)	(14.043)
LN (Weeks worked)	.799	.812	.877	.759
	(70.394)	(63.307)	(95.126)	(70.164)
Indicator: Mainly full-time	.594	.699	.700	.870
weeks worked	(34.890)	(26.125)	(63.248)	(42.625)
Adjusted R Square	.358	.318	.413	.279
F-statistics	1144.773	1007.112	2191.931	1437.192

*Note: t-statistics is given in brackets

Authors calculations based on 1991, 1996 and 2001 Censuses PUMF

citizenship premium is greater for immigrants from non-OECD countries. For example, females from non-OECD countries earn a 12.6% premium versus a 5.8% premium for OECD females. Males from the non-OECD group obtained a 14.4% premium versus only a 4.1% earnings boost in the OECD group after naturalization.

In contrast to the citizenship effect, the effect on earnings derived from the immigrant's occupational status is stronger in the OECD group. For example, the earnings advantage associated with skilled occupations for OECD females is almost twice as high as for non-OECD (17.4% vs. 8.9%). In the professional occupations, OECD immigrants earn a 5% to 6% greater return when other factors are held constant.

As we noted earlier, the citizenship effect may be a byproduct of citizens having greater access to better paid jobs within an occupational skill group. In Table 4, we present the OLS estimation for our base model, augmented with an interaction dummy on citizenship and occupation. In this augmented model, the coefficients on simple occupational dummies demonstrate that among non-citizen immigrants, OECD arrivals can expect a higher occupational earnings premium than immigrants from non-OECD countries. This is true, whether they worked in skilled occupations (17.1% vs. 4% for females, 13.5% vs. 10% for males) or in professional occupations (39.2% vs. 23% for females, 34.8% vs. 27% for males).

For individuals in low-skill occupations and without citizenship (our base category), the citizenship effect is greater if they belong to the non-OECD group (9.6% vs. 5.1% for females, 14% vs. 3.4% for males). For professional or skilled male workers from non-OECD countries, the earnings premium owing to citizenship is insignificant. However, their female counterparts, after ascension to Canadian citizenship, receive an earnings premium of 24.7% if they are in a professional occupation and 17.2% if they are in a skilled occupation. For both genders in the OECD origin group, the citizenship-occupational interaction dummies obtained small and highly insignificant coefficients.

One caution remains: it is quite possible that the citizenship effect is not merely a result of a shift in the earnings functions but a result of self-selection of immigrants with different attributes into citizenship. If this is the case, then a better estimate of the earnings effect derived from citizenship could be obtained from separate estimates of the earnings functions for citizen and non-citizen samples corrected for their non-random nature. Our preliminary test based on a Heckman two-stage model did not provide decisive evidence for the presence of a selectivity bias.[12]

Table 4.

Citizenship Effect on immigrant earnings: Augmented

	(1) females non-OECD	(2) males non-OECD	(3) females OECD	(4) males OECD
(Constant)	4.646	4.359	4.416	4.461
	(42.926)	(40.510)	(49.517)	(53.770)
AGE	.039	.055	.040	.071
	(7.654)	(11.294)	(10.383)	(20.582)
AGESQ	-.0004	-.001	-.0004	-.001
	(-7.381)	(-10.911)	(-9.762)	(-18.426)
Years since immigration	.013	.013	.003	-.0003
	(16.173)	(17.045)	(6.597)	(-.619)
Total Years of Schooling	.035	.035	.037	.027
	(18.069)	(18.258)	(21.404)	(19.476)
Home language: English	.041	.097	.017	.081
or/and French	(2.753)	(6.327)	(1.179)	(6.589)
Naturalized citizen	.096	.140	.051	.034
	(5.118)	(6.769)	(3.370)	(2.009)
Professional occupation	.230	.270	.392	.348
	(6.184)	(8.313)	(16.583)	(14.866)
Skilled occupation	.040	.100	.171	.135
	(1.180)	(3.541)	(7.656)	(6.518)
professional*citizen	.151	.025	.023	.011
	(3.621)	(.686)	(.865)	(.417)
skilled*citizen	.066	-.001	.005	.009
	(1.711)	(-.036)	(.181)	(.403)
LNWEEKS	.799	.811	.877	.759
	(70.403)	(63.300)	(95.125)	(70.161)
Indicator: Mainly full-time	.594	.699	.699	.870
weeks worked	(34.853)	(26.123)	(63.240)	(42.614)
Adjusted R Square	.359	.318	.413	.279
F-statistics	955.739	839.248	1826.599	1197.622

Economic Impact: Age Earnings Simulations[13]

To further illustrate the importance of the citizenship effect, we produce below a series of country-specific age-earnings simulations. Figures 3 and 4 illustrate the citizenship effect on earnings for pairs (British and Chinese, and US and Indian) both for old and new vintages of Canadian immigrants.

Figure 3 indicates sizable citizenship effects for both Chinese and British immigrants. However, the citizenship effect on Chinese earnings is larger. The Canadian-born age earnings functions are now reported as a reference point (CB), and further highlight the citizenship effect on earnings. A Chinese immigrant experiences a substantial earnings disadvantage upon arrival, but by becoming a citizen augments his or her earnings to a degree that nearly equals those of the Canadian-born. The citizenship effect on British immigrant earnings, however, is sufficient to make these immigrants "overachievers." In other words, without citizenship, British immigrants do not suffer an initial earnings disadvantage, and with citizenship experience, they experience a substantial earnings advantage.

Figure 4 reveals a similar effect when we pair the earnings performance for the US and Indian immigrants. Citizenship status grants US immigrants a slight lifetime earnings premium relative to the Canadian-born. Citizenship acquisition once again provides a substantial boost in the earnings of Indian immigrants, such that Indians nearly overtake the earnings of the Canadian-born at age 45.

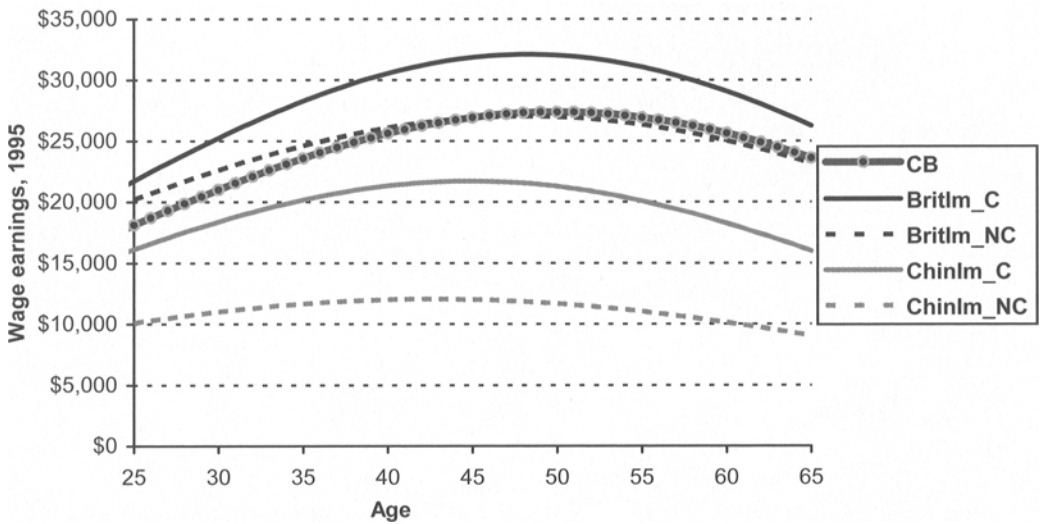
Figures C-1 and C-2 in Appendix C report a similar pattern of citizenship effects on earnings for German, Italian, Philippine and Vietnamese immigrants. In the first two cases, citizenship status causes immigrant earnings to catch up or overtake the Canadian-born norm. However, for immigrants from the Philippines and Vietnam, acquiring Canadian citizenship just brings their earnings performance closer to the Canadian standard.

In sum, under these age-earnings simulations, the citizenship effect on age-earnings profiles for the reviewed countries was substantial, with a greater earnings shift for naturalized immigrants from non-OECD countries.

Economic Impact: Decomposition of Wage Differentials

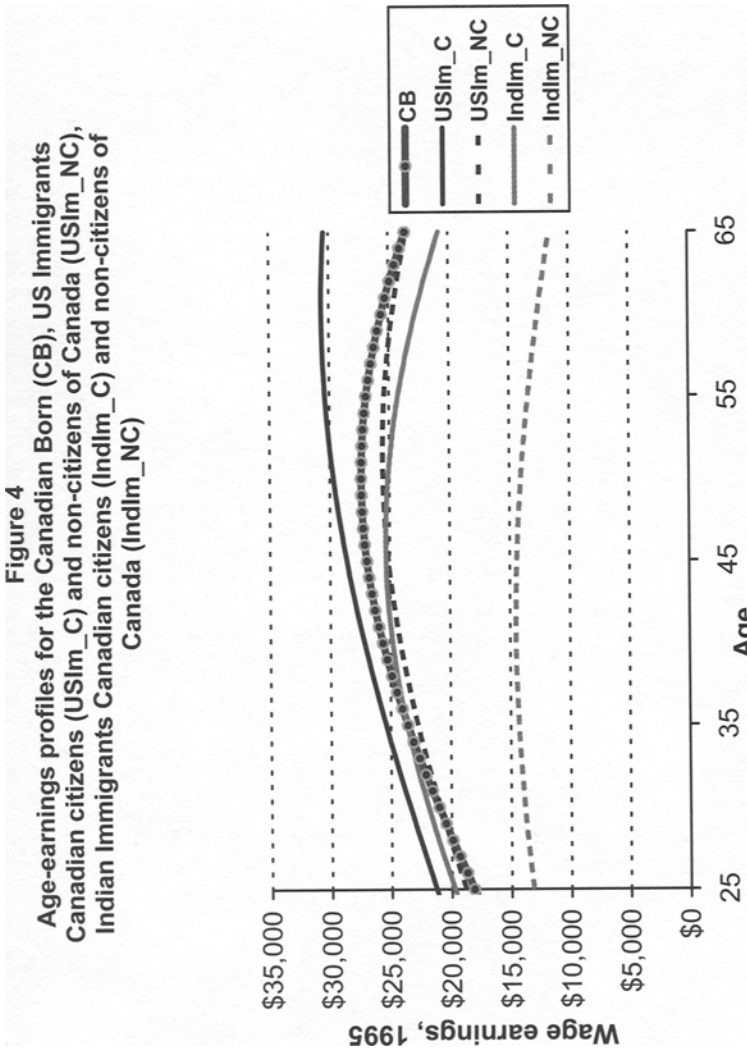
At this point, we ask if the near equalized earnings for Canadian-born and naturalized citizens depicted in Figures 3 and 4 are a consequence of

Figure 3
Age-earnings profiles for the Canadian Born (CB), British Immigrants Canadian citizens (BritIm_C_ and non-citizens of Canada (BritIm_NC), Chinese Immigrants Canadian citizens (ChinIm_C) and on-citizens of Canada (ChinIm_NC)



Source: Authors' calculations from 1991, 1996 and 2001 Census of Canada PUMF

Figure 4
Age-earnings profiles for the Canadian Born (CB), US Immigrants Canadian citizens (USIm_C) and non-citizens of Canada (USIm_NC), Indian Immigrants Canadian citizens (IndIm_C) and non-citizens of Canada (IndIm_NC)



Source: Authors' calculations from 1991, 1996 and 2001 Census of Canada PUMF

non-discriminatory treatment due to citizenship, or a result of the fact that newly ascended citizens have a greater stock of human capital, or both? Given that immigrants are either singly or doubly selected, the average immigrant may have a greater human capital endowment than the average native-born Canadian. Then, after acquiring Canadian citizenship, do these better educated and more experienced immigrants actually earn more than their native-born counterparts? If so, why? In order to answer these questions, we employ the Blinder-Oaxaca decomposition methodology (Oaxaca, 1973; Blinder, 1974). The basic idea underlying this method is that differences in wages between two population groups can be explained by the differences in their productive characteristics, and by the differences in the OLS regression coefficients, which in turn represent returns to those characteristics.

The Oaxaca-Blinder decomposition method is routinely used in labour market discrimination studies to explain segmented group wage differences. Accordingly, the residual fraction of wage differentials unexplained by human capital endowments is usually ascribed to labour market discrimination. In our case, the citizenship status of an immigrant segments the labour market. Furthermore, we have to adopt one of the estimated wage structures as the nondiscriminatory norm for the group believed to be dominant in the labour market (citizens) relative to the comparison group (non-citizens). We treat non-citizens as a disadvantaged group since non-citizens are discriminated against in the public sector by limited job access.[14]

The human capital portion of the overall wage differential is obtained as a sum of the differences in the mean characteristics of the two groups weighted by the estimated coefficients for the nondiscriminatory wage standard. The portion of the overall wage differential owing to discrimination will then be the residual left over after netting out the human capital portion.[15] We now turn to estimating the sources of earnings differences between naturalized and native-born Canadians.

Using native born citizens' wage structure as a benchmark ("non-discriminatory" structure), we define the Canadian born (CB) versus foreign born (FB) citizens wage differential in matrix notation as:

$$\ln W_{CB} - \ln W_{FB} = (\overline{X}_{CB} - \overline{X}_{FB})^T \hat{\beta}_{CB} + \overline{X}^T_{FB}(\hat{\beta}_{CB} - \hat{\beta}_{FB})$$

where the first term on the right hand side represents the effect of the differences in mean characteristics, and the second term depicts the

effect of differential returns to these characteristics (i.e., the "residual" or "unexplained" part).

The results in Table 5 show that labour market outcomes for OECD and non-OECD naturalized immigrants are drastically different from those of the reference group of Canadian-born. First, females from OECD countries reveal no wage differential since the positive effect owing to their better returns derived from their productive characteristics is offset by their smaller human capital endowments. In contrast, females from non-OECD countries show a 20.8% wage disadvantage which is evenly split between their smaller human capital endowments and the "discrimination" component.

Even more dramatic differences follow from the decomposition analysis of the male sample. OECD born male citizens earn more than their Canadian-born counterparts because they possess greater human capital and earn greater returns to their human capital (i.e., a negative sign on "discrimination" component). This all results in a 12.8% wage earnings advantage over Canadian-born male citizens. In contrast, non-OECD males receive 26.5% lower earnings, of which 21.45% is explained by smaller labour market rewards for their human capital characteristics.

In sum, we found that depending on their birth place, both male and female foreign-born citizens experience more or less preferential treatment for their productive characteristics than the Canadian-born.

How does the Canadian labour market discriminate between foreign-born workers with and without citizenship? To what extent is the foreign-born citizenship earnings premium reported in Figures 3 and 4 due to discrimination by citizenship status within the foreign-born group, or due to varying degrees of human capital endowment? If the earnings premium derived from citizenship is due to differential human capital endowments across the foreign-born, we will have established evidence of positive self-selection into citizenship ascension. In other words, that better endowed foreign-born immigrants ascend to citizenship.

To answer these questions, we turn to our decomposition analysis between foreign-born citizens (C) and non-citizens (N):

$$\ln W_C - \ln W_N = (\overline{X}_C - \overline{X}_N)^T \hat{\beta}_C + \overline{X}_N^T (\hat{\beta}_C - \hat{\beta}_N)$$

The decomposition results reported in Table 6 support our earlier observation that the size of the observed wage differentials between naturalized citizens and non-citizens varies across countries of origin. Compared to their OECD counterparts, female and male immigrants from non-OECD countries obtain 3.5% and 4.5% greater citizenship premiums respectively.

Table 5

Decomposition of wage differentials between naturalized and native-born Canadians (%)

	Human capital endowment effect	"Discrimination" component	Wage differential
		Females	
OECD	5.91	-5.57	0.34
non-OECD	9.87	10.94	20.81
		Males	
OECD	-5.81	-7.06	-12.86
non-OECD	5.10	21.45	26.55

Source: Authors' calculations based on 1991, 1996 and 2001 Census PUMF

Table 6

Decomposition of wage differentials between naturalized citizens and permanent residents of Canada: population of foreign-born employees 25-65 years old: All occupations

	Human capital endowment effect	"Discrimination" component	Wage differential
		Females	
OECD	8.69%	6.27%	14.96%
non-OECD	40.15%	13.44%	53.59%
		Males	
OECD	8.66%	4.35%	13.00%
non-OECD	41.43%	14.62%	56.05%

Source: Authors' calculations based on 1991, 1996 and 2001 Census PUMF

The portion of the wage gap explained by differences in human capital endowment varies across origin groups. For example, an OECD-born male earned 13% more as a citizen than as a non-citizen, and the difference in his human capital endowment explained about 66% (8.66/13) of this wage premium. In contrast, male immigrants from non-OECD countries with Canadian citizenship relative to their counterparts without citizenship demonstrate a 56% earnings advantage, of which 74% (41.43/56.05) is explained by their greater human capital endowment. A similar pattern holds for the foreign-born female immigrants, suggesting greater positive self-selection into citizenship acquisition for non-OECD immigrants regardless of their gender.

Finally, the decomposition results for the professional occupations in Table 7 reveal a similar pattern of outcomes. An exception is a notably greater wage differential (66.7 vs. 53.6) and an increased share of the "discrimination" component (21.99/66.67 vs. 13.44/53.59) for non-OECD female professionals. However, regardless of the occupational status, the wage earnings gap between naturalized citizens and non-citizens is mostly explained by the greater human capital endowments.

Conclusions

Our results suggest that ascension to citizenship for a select group of Canadian immigrants accords with our socioeconomic model. We found statistical evidence indicating that the naturalization rate is strongly influenced by the underlying factors which affect the costs and benefits owing to the naturalization decision. Moreover, the economic impact of this citizenship decision is substantial in the Canadian labour market. After citizenship acquisition, both male and female immigrants experience a rise in earnings. This increase was found to be greater for immigrants from non-OECD countries. Furthermore, for non-OECD males, this effect was greatest in the highly-skilled occupations.

Our simulation experiments traced the effect of citizenship on foreign-born earnings relative to Canadians over their lifetimes. These simulations indicated that in the majority of cases, ascension to citizenship reduced the earnings gaps relative to Canadians, and sometimes allowed the foreign-born citizens to earn a premium.

Finally, for naturalized Canadians from non-OECD countries, the earnings disadvantage is primarily, but not exclusively, owing to discrimination. In contrast, citizens from OECD countries received a premium for their

Table 7

Decomposition of wage differentials between naturalized citizens and permanent residents of Canada: population of foreign-born employees 25-65 years old: Professional occupations

	Human capital endowment effect	"Discrimination" component	Wage differential
		Females	
OECD	10.55%	5.44%	15.99%
non-OECD	44.68%	21.99%	66.67%
		Males	
OECD	5.20%	3.92%	9.12%
non-OECD	40.97%	17.18%	58.15%

Source: Authors' calculations based on 1991, 1996 and 2001 Census PUMF

human capital characteristics, while non-OECD immigrants, especially males, experienced a devaluation of their credentials. When we focus on the sources of earnings differences between foreign-born citizens and non-citizens, the decomposition analysis indicates that immigrants from non-OECD countries received a greater citizenship premium and that for both origin groups, this premium was primarily explained by the citizens' superior human capital characteristics. This finding invites further investigation into the possibility that there exists positive self-selection into citizenship. In other words, immigrants with positive unobservable features naturalize. Furthermore, endogeneity might be present since citizenship status affects earnings, and naturalization is affected by income. These possible self-selection and endogeneity problems require further investigation.[16]

In sum, a common theme occurs in this article. Economic forces condition immigrant ascension to Canadian citizenship, especially for those immigrants from less developed regions. Furthermore, investment in the form of human capital accumulation before and after arrival in Canada determines the economic premium earned from this citizenship acquisition. Given these benefits accruing from citizenship and the outlined costs associated from naturalization, we conclude that the decision to naturalize in Canada is determined by weighing the economic cost and benefits of citizenship.

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Notes

1 The title of the department is Citizenship and Immigration Canada. In the past, the immigration department was merged with the Department of Justice and, prior to that, with the Department of Manpower and Immigration. Each re-organization of the immigration department reflected the perspective of successive governments on issues surrounding immigration.

2 See Appendix A for details.

3 The Census of Canada does not provide any information on the year of citizenship acquisition.

4. The Court argued in the majority that since there was no barrier to becoming a Canadian citizen, immigrants did not inherently face discrimination, but just a waiting period which applied to all immigrants.

5 Of course, there are many non-economic objections to returning immigrants, including an alleged lack of patriotism or failure to integrate into the Canadian economy.

6 The NAFTA visa is a temporary visa held by over 100,000 Canadian citizens in the US circa 2004. There is no queue for this visa. All that is required is a job offer in a professional occupation, a

degree to match the job and Canadian citizenship, and the visa is granted for $50 (US) with no waiting time. Over one-third of the past visa holders have used this NAFTA visa to convert to a permanent E visa in the US. See DeVoretz and Coulombe (2005).

7 Given the lack of dual citizenship, one apparent strategy for Chinese immigrants is for one of the two spouses to ascend to Canadian citizenship, while the other spouse remains Chinese. This ensures access to China for the spouse who is not a Canadian citizen.

8 We believe that by using the 20% uncensored census samples the results will improve as they did for Bloemraad (2002).

9 The OECD countries include France, Germany, Greece Italy, Netherlands, Portugal, United Kingdom, US and USSR.

10 Chiswick (1978) found that when holding total labour market experience constant, years since arrival to the US had a smaller effect on earnings for immigrants from countries that "more closely resemble the US."

11 Although our data do not distinguish between pre- and post-arrival schooling, we believe that years since immigration partially captures this distinction.

12 Tests are available upon request.

13 Under all these simulations, the mean values of the relevant variables, except age, are taken from the relevant estimating equation. These equations are available upon request.

14 In their studies of the Swedish labour market, Bevelander (2000) and Scott (1999) argue that cultural distance causes segmentation.

15 This could also be directly calculated as a sum of the difference of the estimated coefficients between the two groups weighted by the mean characteristics of the discriminated group.

16 We await a new data set which will allow us to isolate a citizenship instrument, namely voting, to correct for possible endogeneity.

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APPENDIX A
Canada's Citizenship Policy
Excerpt from Canada's Citizenship Act
Source: Department of Justice Canada,
http://laws.justice.gc.ca/en/C-29/34586.html

Part I: The Right to Citizenship

(1) The Minister shall grant citizenship to any person who

(*a*) makes application for citizenship;

(*b*) is eighteen years of age or over;

(*c*) is a permanent resident within the meaning of subsection 2(1) of the *Immigration and Refugee Protection Act*, and has, within the four years immediately preceding the date of his or her application, accumulated at least three years of residence in Canada calculated in the following manner:

(i) for every day during which the person was resident in Canada before his lawful admission to Canada for permanent residence the person shall be deemed to have accumulated one-half of a day of residence, and

(ii) for every day during which the person was resident in Canada after his lawful admission to Canada for permanent residence the person shall be deemed to have accumulated one day of residence;

(*d*) has an adequate knowledge of one of the official languages of Canada;

(*e*) has an adequate knowledge of Canada and of the responsibilities and privileges of citizenship; and

(*f*) is not under a removal order and is not the subject of a declaration by the Governor in Council made pursuant to section 20.

APPENDIX B: Working Sample Description

Table B: Descriptive statistics for working age immigrants across origin, gender and citizenship status

	Non-OECD countries				OECD countries			
	Male		Female		Male		Female	
	N/citizens	Citizens	N/citizens	Citizens	N/citizens	Citizens	N/citizens	Citizens
Sample Size	9,601	22,393	11,297	24,087	11,687	39,563	13,689	38,395
%	30.01%	69.99%	31.93%	68.07%	22.80%	77.20%	26.28%	73.72%
Age, mean	38.91	44.04	39.15	43.81	43.53	48.07	43.29	47.82
Wage and Salary Earnings, 2000 dollars , mean	$17,199	$30,421	$9,529	$17,812	$34,690	$37,745	$16,383	$18,291
Total Income, 2000 dollars, mean	$21,384	$37,222	$12,391	$22,566	$41,967	$47,148	$21,221	$23,656
Below Low Income Cut-Off, %	37.20%	15.00%	36.88%	17.65%	13.81%	9.43%	14.93%	11.70%
Years Since Immigration, %								
4-10 years	85.02%	28.42%	84.29%	31.93%	23.47%	3.74%	23.27%	3.93%
11-20 years	8.66%	34.12%	8.79%	33.21%	21.30%	13.01%	22.30%	13.44%
21-30 years	2.51%	23.24%	3.00%	21.96%	31.17%	31.85%	30.97%	31.31%
31-40 years	0.69%	9.16%	0.62%	8.34%	16.89%	34.93%	17.01%	34.73%
Over 40 years	3.12%	5.06%	3.30%	4.56%	7.17%	16.46%	6.45%	16.59%
Highest Level of Schooling, %								
High school or less	46.28%	43.89%	50.42%	49.70%	47.71%	46.67%	54.05%	59.30%
Certificate or diploma (below bachelor)	20.48%	28.25%	20.64%	26.24%	32.71%	35.37%	28.05%	27.34%
Bachelor degree	18.09%	15.87%	18.43%	16.23%	9.42%	9.03%	10.34%	8.02%
Above bachelor	12.62%	9.99%	9.80%	7.41%	7.37%	6.86%	6.58%	4.87%
Ph.D.	2.52%	2.01%	0.70%	0.41%	2.79%	2.08%	0.98%	0.47%
Occupational Skill Level (NOC 1991), %								
Professionals – skill level A (including B managerial)	22.80%	28.05%	14.54%	21.09%	30.23%	33.15%	25.97%	25.69%
Skilled – skill level B and C (excluding B managerial)	24.61%	31.75%	15.60%	21.44%	36.31%	36.05%	26.10%	27.02%
Low skill – skill levels below C	52.59%	40.21%	69.86%	57.48%	33.46%	30.80%	47.93%	47.29%
Weeks Worked, %								
0-25 weeks	26.10%	10.25%	32.15%	15.20%	11.10%	9.00%	17.50%	14.28%
26-40 weeks	15.49%	10.16%	16.59%	12.06%	12.15%	9.56%	12.89%	11.59%
41-52 weeks	58.40%	79.58%	51.26%	72.74%	76.75%	81.43%	69.62%	74.13%
Mainly Full-Time Weeks Worked, %	72.82%	82.46%	51.07%	61.35%	84.39%	82.93%	51.62%	52.13%

Source: Authors' tabulations from 1991, 1996 and 2001 Census of Canada Public Use Microdata Files (PUMF), Statistics Canada

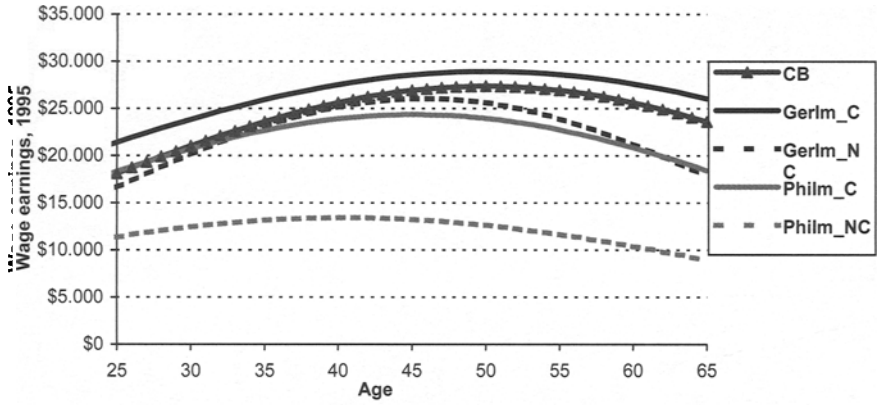
Table B describes some demographic, human capital, and labour market characteristics of the sampled immigrants grouped according to their citizenship status, gender, and origin.

Regardless of their gender, citizens are older, earn higher incomes, and are less represented in the low income category. Naturalized citizens from OECD countries do not show a remarkable advantage over non-citizens as described by their educational levels or occupational status. Although naturalized citizens from non-OECD countries demonstrate lower levels of university education (27% vs. 33% males, 24% vs. 29% females), they tend to be better represented in professional (28% vs. 22.8%—males, 21.1% vs. 14.5%—females) or skilled (37.7% vs. 24.6%—males, 21.4% vs. 15.6%—females) occupations. Regardless of their country of origin, citizens show greater integration into the labour market: they are more likely to work full time with greater numbers of weeks worked annually.

Finally, most human capital and labour market characteristics presented in Table B-1 show substantial variation across gender. For example, non-OECD females with Canadian citizenship earn about $15,000 less in annual wages and are 7% less well represented among the professionals. In addition, non-OECD females are 20% less likely to work full time when compared to males of the same origin group. In contrast, among OECD immigrants with citizenship females earn about $19,000 less than males and they are underrepresented by 7.5% in the professional occupations and by 30% in the full-time working week category.

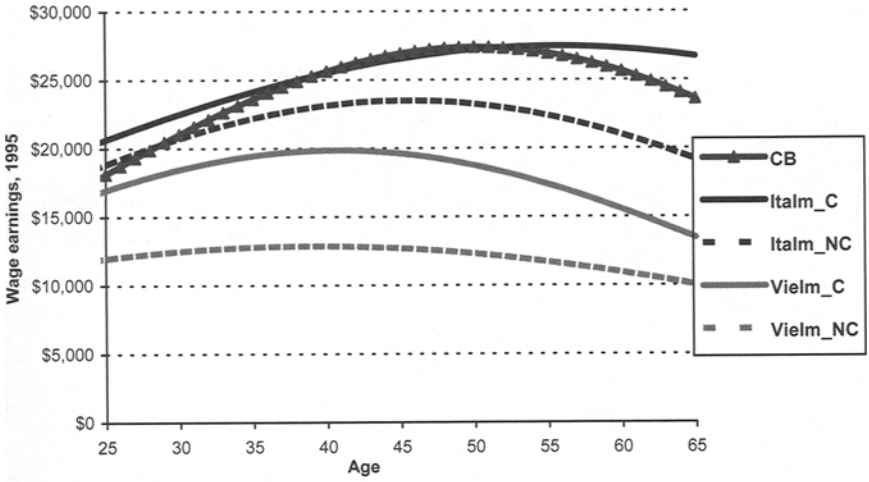
Appendix C
Age-Earnings Simulations by Country of Origin and Citizenship Status

Figure C-1 **. Age-earnings profiles for the Canadian Born (CB), Germans Canadian Born (GerCB), German Immigrants Canadian citizens (GerIm_C) and German Immigrants non-citizens of Canada (GerIm_NC)**



Source: Authors' calculations from 1991, 1996 and 2001 Census of Canada

Figure C-2
Age-earnings profiles for the Canadian Born (CB), Italian Canadian Born (ItaCB), Italian Immigrants Canadian citizens (Italm_C) and Italian Immigrants non-citizens of Canada (Italm_NC)



Source: Authors' calculations from 1991, 1996, and 2001 Census of Canada