Structural impacts on twenty years of immigrant labour flows to Canada

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March 1, 2004

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Submitted to the Population Association of America 2004 Annual Meeting, Boston Massachusetts, April 1-3, 2004

Introduction

The individual decision to immigrate is made in the context of larger social structures that influence the composition of the economic immigrant population over time. Studies of individual motivations and decision-making provide useful insights into migration decisions, but often neglect to adequately take into account the structural forces that constrain or enable those decisions. Over the last 20 years, economic immigrants to Canada have faced changing selection policies, cycles of economic recession and growth, changes in labour supply and demand for various occupational groups, women's increased labour force participation and an aging labour force. The broad objective of this paper is to characterize these five structural forces affecting immigrant cohorts to Canada over the last twenty years, and then to examine the occupational composition of economic immigrants to Canada over this period in the context of these social structures.

Research in this area has mostly concentrated on the impact of structural forces on the economic integration of immigrants. Recent evidence has brought to light a downward income trend for new immigrants to Canada (Chui & Zietsma 2003, Green & Worswick 2002) that shows immigrants landing (i.e.: gaining permanent residency) in 1980 integrated more quickly and were doing better ten years after immigration than those landing in Canada in 1990. Various structural explanations for this have been posited, such as the effect of the business cycle on immigrant labour market experiences (Aydemir 2003) and the shift to a knowledge-based economy (Reitz 2000, Boyd & Vickers 2000). This paper intends to draw together and expand this previous work to take advantage of landing cohort information in the study of the relationship between structural forces and the occupational composition of new immigrant skilled workers.

Beginning with an overview of key structural changes in the period of interest, the paper situates cohorts and their characteristics in the larger context of the period of immigration. The aim is to develop a better understanding of the ways in which individual choices to immigrate are related to the larger structural forces at play in society at a given time. In multivariate analysis, the period of immigration is used as a rough proxy for defined structural factors relevant to that period. Data on immigrants landing records from 1980 to 2000 are used to assess the relationship between structural factors and the occupational composition of immigrants.

Literature review

The literature on economic immigration has identified and measured in numerous ways the push and pull factors affecting the choice to immigrate. For the most part, push factors include deprivation in some form whereas pull factors are primarily identified as economic incentives in the receiving country (Aydemir 2002). For immigrants entering in other categories than economic, of course, incentives such as family re-unification or political asylum largely explain choices to immigrate.

Focusing on economic immigrants, factors that push people to consider immigrating to new countries away from the sources of deprivation in the sending country are often associated with limited chances of getting work or of accessing opportunities for economic improvement (United Nations 2002). Push factors have been found to be associated with other factors that disrupt work opportunities, such as political instability, nevertheless, economic immigrants to Canada are not gaining entry for political asylum, but are applying for permanent residency based on meeting the required level of units of assessment (referred to hereafter as points) in the selection process (see Appendix 1). They differ from refugees and family reunification immigrants in that salient way.

Economic incentives in the receiving country are primarily associated with opportunities for work and career advancement. Countries offering immigrants these opportunities are perceived to be exerting a pull on economic immigrants. Pull factors have also been found to be mitigated by the language of the receiving country, distance from the sending country (Petrov 2003) and the existence in the receiving country of an immigrant community from the same sending country (Kim 2003).

The research into push and pull factors often focuses on the role of these factors in individuals' migration decision-making without adequately taking into account the structural forces limiting the choices of individuals. A few exceptions to this approach in Canada shed some light on the effect of some structural forces on migration decisions. For example, some have looked at the impact of changing selection criteria on the composition of entire immigrant cohorts (Boyd & Vickers, 2000; Aydemir, 2002; Green & Worswick, 2002). For example, Boyd & Vickers (2000) found that the implementation of the *1976 Immigration Act* that based selection more on individual characteristics rather than countries of origin regulations meant that the 1980s and 1990s were characterized by greater cultural diversity and a growing visible minority population in Canada (Boyd & Vickers, 2000). Aydemir (2002) found that the change in immigration policy had an effect on immigrant characteristics, particularly the education level of immigrant skilled workers.

Green & Worswick (2002) also considered changes in Canadian immigration policy in their analysis of labour market entry effects and the earnings returns to immigrant men for their foreign experience. They found that changes in the source country composition of immigrant cohorts from the 1980s to early 1990s, as well as a decline in returns to foreign experience through this period explained declines in entry earnings across immigrant cohorts that could not be explained by general declines experienced by all new entrants to the Canadian labour market.

Aydemir (forthcoming) developed a model to examine the impact of the business cycle on labour force participation by new immigrants. He found that labour force participation was affected by entry conditions attributed to the business cycle, with adverse affects at times when unemployment rates were high. Reitz (2000) studied what he called "institutional effects"– immigration policy, social welfare systems and educational institutions – for their effect on immigrant employment trends and earnings. He concludes that employment trends for immigrants may be linked to some aspects of their country of origin. He makes the point that the Canadian-born are catching up to immigrants in high education levels, and these credentials are becoming more highly valued in the labour market. The combination of these trends means a decline in relative earnings for new immigrants.

Another body of literature looks more closely at the impact of the relationship between sending and receiving countries, particularly at trade relations, outsourcing of work, and other agreements that may facilitate the flow of immigrants from one country to the other (Sassen 1988, Kim 2003). While Canadian studies of this nature are limited, Kim (2003) examines the impact of trade activity and foreign investments on Canadian immigration and finds little effect. One shortcoming of this research, as Kim notes, is the inclusion of all immigrant classes in the analysis, whereas the impact of these structures may be more relevant for economic migrants than family reunifications or refugees.

This paper will build on the previous research by characterizing the structural context into which immigrant cohorts landed in the 1980s and 1990s in Canada. Unlike much of the research previously done, this paper will focus on skilled worker economic immigrants (principal applicants) who must meet selection criteria to gain permanent residency in Canada. Although skilled workers may migrate for reasons associated with push factors, these factors are not the basis of their admittance, therefore it should be easier to identify the relationship between

structural forces in Canada and the occupational composition of skilled workers as a group, than would be the case for family reunifications or refugees.

The occupational composition of economic immigrants over time will be assessed in light of five important structural influences: the business cycle, immigrant selection criteria, labour supply and demand and the age and gender compositions of the labour market.

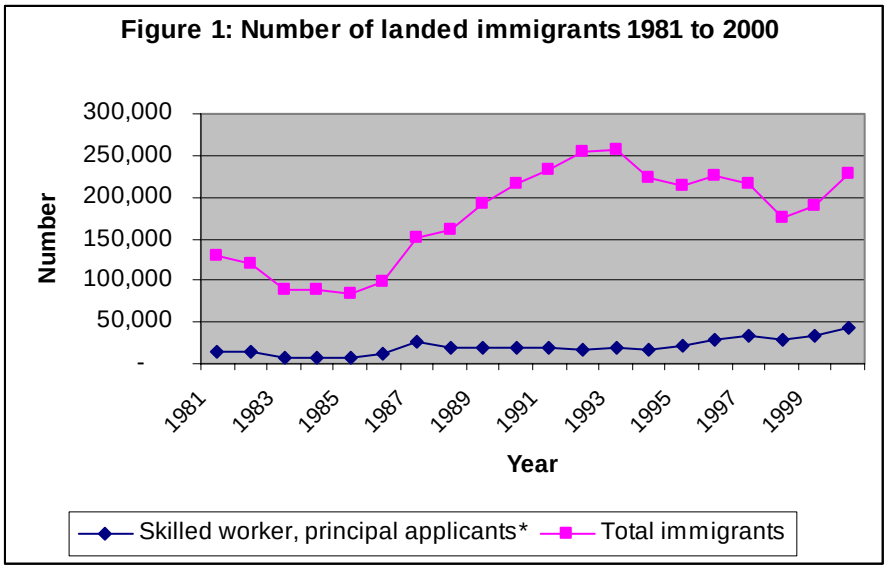
Methods

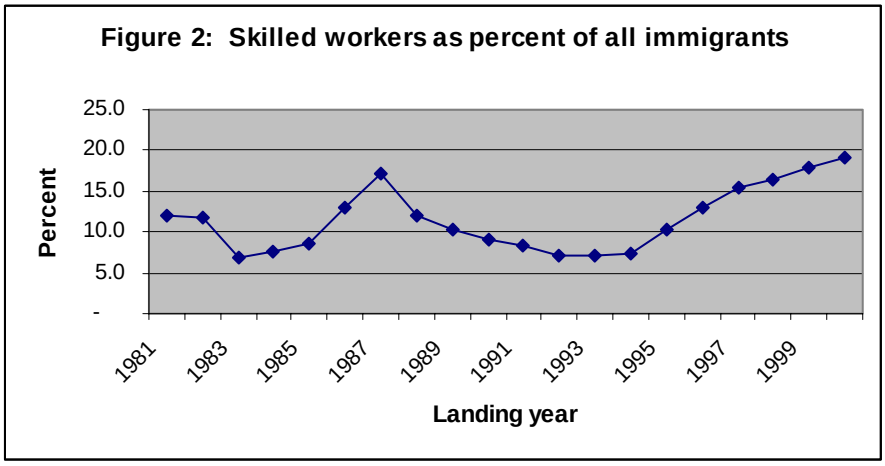
The first section of the paper reviews published information to describe the trends over the last two decades for the five structural factors, characterizing periods of immigration over this time by the structural constraints relevant for the period. The relationship between structural forces and the occupational composition of immigrants is assessed using data from Citizenship and Immigration's landings file (LIDS). The landings file includes information on immigrant characteristics at the time of gaining permanent residency in Canada, including detailed information on their intended occupation. Immigrants are asked to report their intended occupation on entering Canada and to provide evidence of credentials and length of experience working in that occupation. Although immigrants may not, in fact, work in that occupation after landing, the occupational composition of immigrants gaining landing status in Canada is the key interest for this study, not the ongoing occupational experiences of immigrants after landing.

A multinomial logit model is used to assess the impact of structural constraints on the likelihood of intending work in a given occupational group (13 groups), given various characteristics such as country of last permanent residence (grouped into world areas), language ability, education, age (and age squared) and gender. Structural constraints are roughly measured by proxies based on the overview in the first section and the immigrant's year of gaining permanent residency.

Trends in structural factors from 1980 to 2000

The United Nations (UN) *Migration Report, 2002* identifies a recent global trend toward more policy restrictions on migration, with greater selectiveness in admission criteria and a tendency to favour immigrants bringing capital to invest or specific skills to meet labour needs. Although this captures some aspects of Canadian immigration, Canada has in fact embraced a more expansionist immigration policy than many other industrialized countries (Reitz 2000, UN 2002). The number of landed immigrants to Canada landing in a given year went from 143,135 in 1980 to 227,313 in 2000 (*Facts and Figures*, 2001), with skilled workers also showing an overall increase through this period (Figure 1). The share of skilled worker principal applicants fluctuated over this period, with low periods through the mid-1980s and the early 1990s, and peaks in the late 1980s and late 1990s (Figure 2).





Immigrant selection criteria

Since 1967, Canada's immigration policy has been based on non-discriminatory principles of selection. Applicants have been accepted based on universal criteria related to their ability to successfully integrate into Canadian life. The *1976 Immigration Act* (the *Act*) came into effect in 1978 and remained in place until 2002 when the *Immigration and Refugee Protection Act* came into effect. The *Act* had been amended more than 30 times (CIC, 2002) in its 26 years. Nevertheless, the key tenets of this act held throughout its lifetime – to reunite families, to protect refugees deemed to be in genuine need of protection, and to promote

Canada's economic development. Only those aspects and changes to the *Act* that are relevant to skilled workers will be discussed here.

The *Act* provided for the recruitment of skilled immigrants based on government-established levels of immigration and on the point selection system. Applicants under the skilled worker class are required to pass specified levels of points to be approved for permanent residency in Canada. Skilled workers have been assessed based on skills and education required for occupations in Canada with a high demand for labour. The selection system is flexible, allowing for adjustment to reflect changing needs, and planned levels of immigration in relation to demand in the other main immigrant groups – family reunification and refugee protection (McWhinney 1998).

Key modifications to the *Act* included a temporary restriction on skilled workers from May 1982 to January 1986 that required skilled worker immigrants to have a validated job offer before their application would be accepted for consideration. The selection criteria were revised in January 1986 to increase the number of skilled workers and these revisions included removing the temporary restriction put in place in 1982. In addition, the revisions of 1986 included some shifts in the allocation of points for certain criteria.

The other significant change introduced in 1986 of relevance to this study was the shift away from the use of the Occupational and Area Demand report as a means of controlling the occupational composition and the immigration levels of skilled workers. Instead, demographic demand was set with a levels control factor of up to 10 points, and occupational composition was controlled by points allocated based on occupational demand. Occupational demand points were set according to the employment opportunities available in Canada for the occupation in which

the immigrant intended to work and for which the immigrant was qualified[1]. Those skilled workers whose occupations were not assigned at least one point would not be considered for permanent residency. Also at this period, immigrants who had arranged employment waiting for them continued to be allocated 10 points and there was no penalty for not having arranged employment as had earlier been the case: however, being in a designated occupation (an occupation designated as having a shortage of workers) was no longer considered equivalent to having arranged employment.

Other key changes occurring in 1986 were the increase in the pass mark from 50 points to 70 points and a shift in the age factor from 18-35 years receiving top points, to 21-44 years. There was a reduction of 2 points for each year over age 44 or under age 21. Knowledge of official languages received five more points than was the case prior to 1986, whereas a possible 5 points for settling in a location where there was a need for immigrants was eliminated.

The 1986 revisions were aimed at addressing the declining numbers of economic immigrants in the mid-1980s and restoring a better balance between economic, family and humanitarian immigrants. They were intended to increase the number of independent applicants, including skilled workers, and to support Canada's economic development by recruiting immigrants who would meet the needs of Canada's labour market (McWhinney, 1998).

In 1991 the allocation of points for designated occupation was re-instituted, and in 1992 those immigrants with arranged employment or destined to designated occupations were given higher processing priority than before.

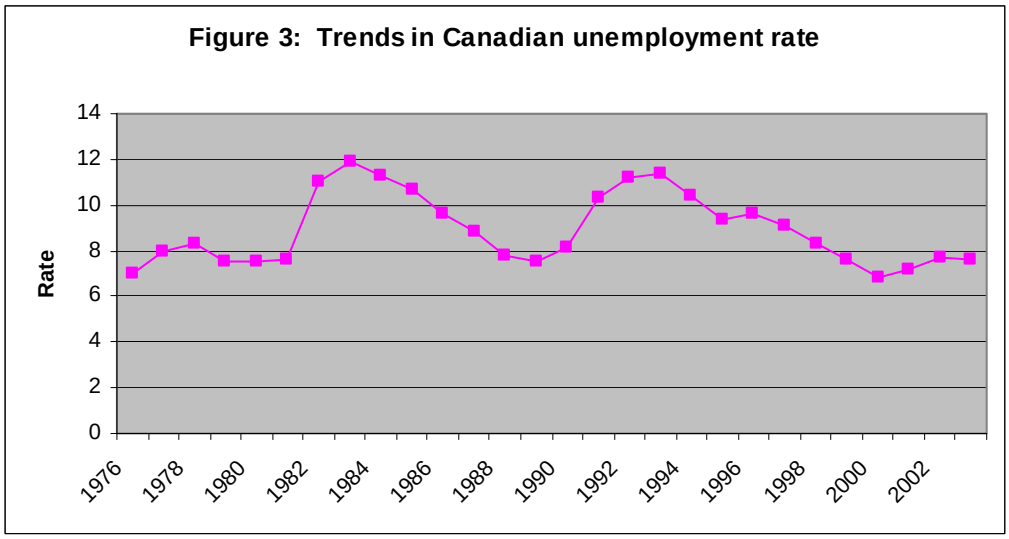
Another major revision to the *Act* in 1993 aimed to better reward immigrants in occupations that required higher skills and admit a greater number of these highly skilled immigrants to meet Canadian labour demands and positively impact the Canadian economy.

[1] The points for occupational demand were based on the Canadian Occupational Projection System (COPS), which was based on current and projected employment, and unemployment rates. In addition, in 1986 some jobs were excluded since they would not be open to new immigrants, such as those requiring Canadian citizenship.

Accordingly, the points for specific vocational preparation were increased from 15 to 18, and applicants with post-secondary education now received more points than those with secondary education for the first time. Points for language ability were modified to reward bilingual applicants and reduce points previously given to those who could speak, write or read in an official language only with difficulty. Also in 1993, the Levels Control which had been introduced in 1986 and set at 5 points out of a possible 10, was increased to 8 points to increase the number of economic immigrants admitted. The 1993 changes meant that Canada was looking to recruit more economic immigrants, and these were to be highly skilled, highly educated immigrants with ability in Canada's languages (McWhinney, 1998).

The business cycle and labour supply and demand

The 1980s and 1990s were both decades characterized by periods of recession, recovery and growth. Although 1983 marked the beginning of economic recovery in the 1980s, immigration policy required economic immigrants to have a guaranteed job in Canada in order to be considered for selection at that time. The year 1986 saw the beginning of an economic boom that continued to the end of the decade. By the early 1990s the Canadian economy had suffered another downturn, however, unlike the recession of the early 1980s, the levels of skilled workers landing in the early 1990s remained consistent through this period, and overall immigration continued to increase. Reitz (2000) argues that this stability in immigration policy in the 1990s indicated a recognition that the long-term benefits of high immigration levels outweigh short-term difficulties. The mid 1990s were characterized by another upturn in the economy and a notable increase in economic activity, particularly for the information and communication technology (ICT) sector (Vaillencourt, 2003; Bowlby & Langlois, 2002).



Following the business cycle of economic strength, recession and recovery, the unemployment rate varied over the two decades of interest. The years 1982 to 1985 were characterized by relatively high unemployment rates, followed by declining unemployment rates to 1990. The largest numbers of Canadians in any occupational group were in sales and service occupations through the late 1980s to 2003 and the numbers were steadily growing (Figure 4). The demand for sales and service workers was fairly low throughout both decades relative to other occupations, but was particularly so in the early 1990s. Trades and transport and clerical occupations also accounted for large numbers of Canadians in the labour force, however the trends for these occupations remained fairly stable to the end of the 1990s. The unemployment rates for trades and transport workers reflect low demand that increased fairly sharply through the 1990s, however, high unemployment for these occupations may also be a reflection of the contractual or intermittent nature of this type of work. Likewise the demand for clerical workers is generally lower than other occupational groups, fell in the early 1990s and has been increasing through the mid to late 1990s.

The lowest unemployment rates, indicating high demand for these occupational groups, were in professional and technical health occupations, management occupations and professional occupations in business and finance. The unemployment rates for these occupational groups were less dramatically influenced by the downturn in the economy in the early 1990s, although most occupational groups were characterized by declining unemployment rates through the mid to late 1990s. This was true particularly for some occupational groups such as those requiring high skills (Green & Worswick, 2002). For example, the demand for trades people and health care workers grew through the late 1990s, along with demand for IT workers, specifically computer scientists and programmers who had the skills required to work in research and development (Krebs & Garneau, 2000, Bowlby & Langlois, 2002).

Figure 4: Number of Canadians employed, by occupation

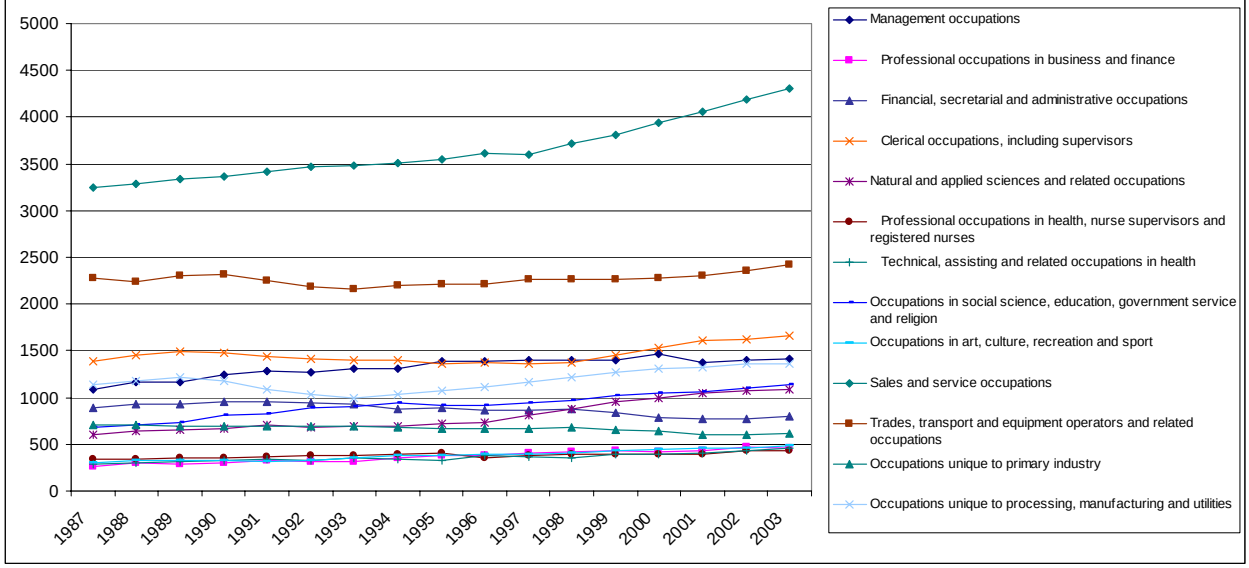
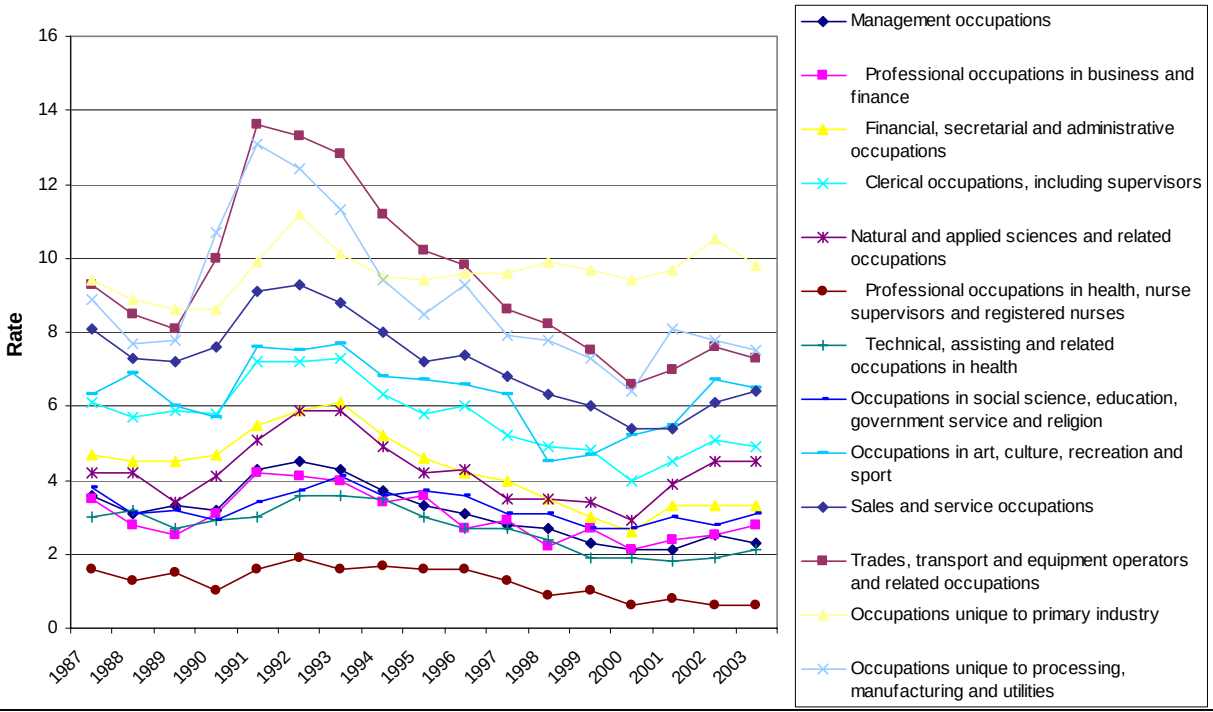


Figure 5: Canadian unemployment rates by occupation



Age trends in the Canadian labour force

The average age of all workers in Canada has been getting older as the baby boomers age. In addition, the retirement ages of workers has been getting younger. These phenomena impact some industries and occupational groups more than others, with health and education industries feeling the greatest impact (MacKenzie & Dryburgh, 2003). Older average ages and younger retirement ages suggest that these industries will be vulnerable to labour shortages as the baby boomers[2] begin to retire. Among the broad occupational groups, MacKenzie & Dryburgh (2003) find that Canadian managers and those working in health, education and utilities industries are older, on average, than other occupational groups, while sales, clerical and production workers are younger, on average. The younger occupational groups may begin to be short of qualified young workers as fewer enter the labour force, however, this trend could also be explained by a

[2] Baby boomers include people born from 1946 to 1962.

growing credentialism over the same period. The educational requirements for many occupations have increased over the last two decades and those occupational groups requiring higher education will have fewer workers in the younger age groups.

Figure 6: Percentage in Canadian labour force by age groups

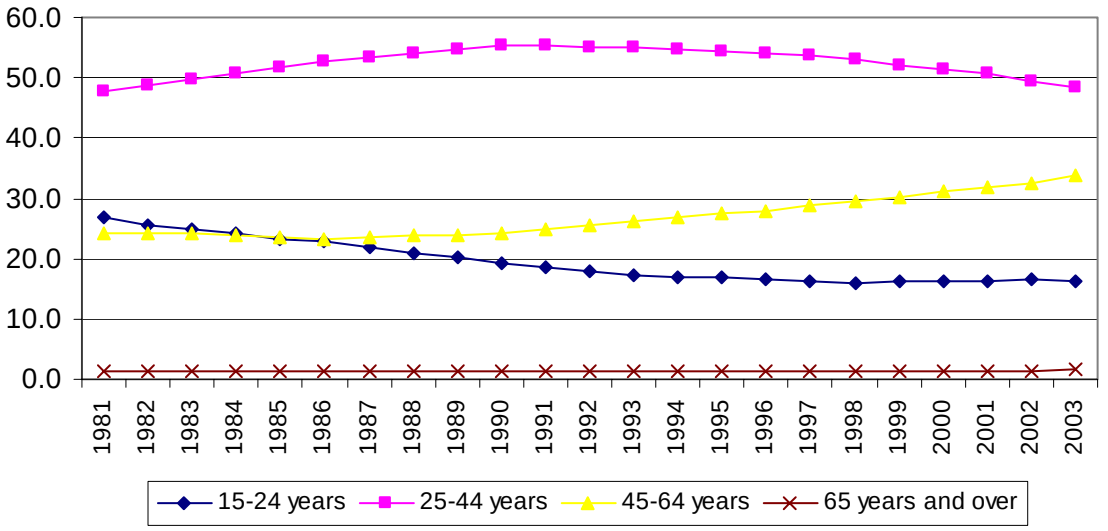
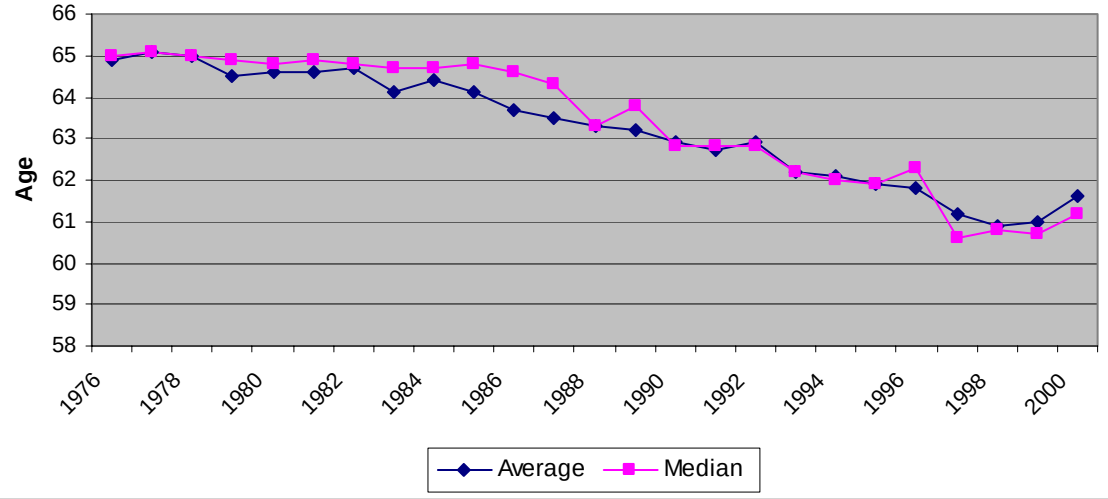
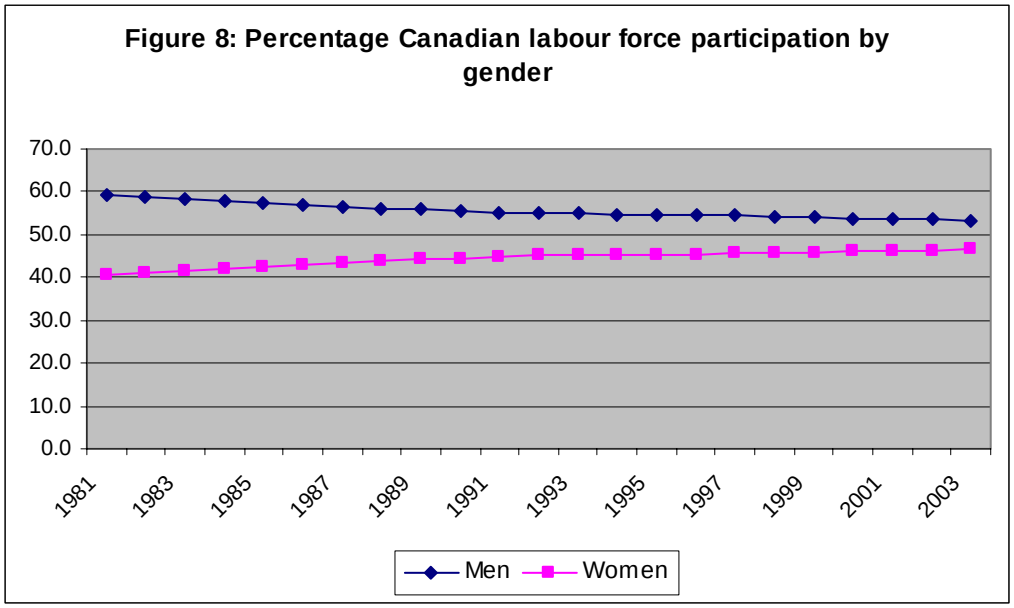


Figure 7: Average retirement age of Canadian labour force



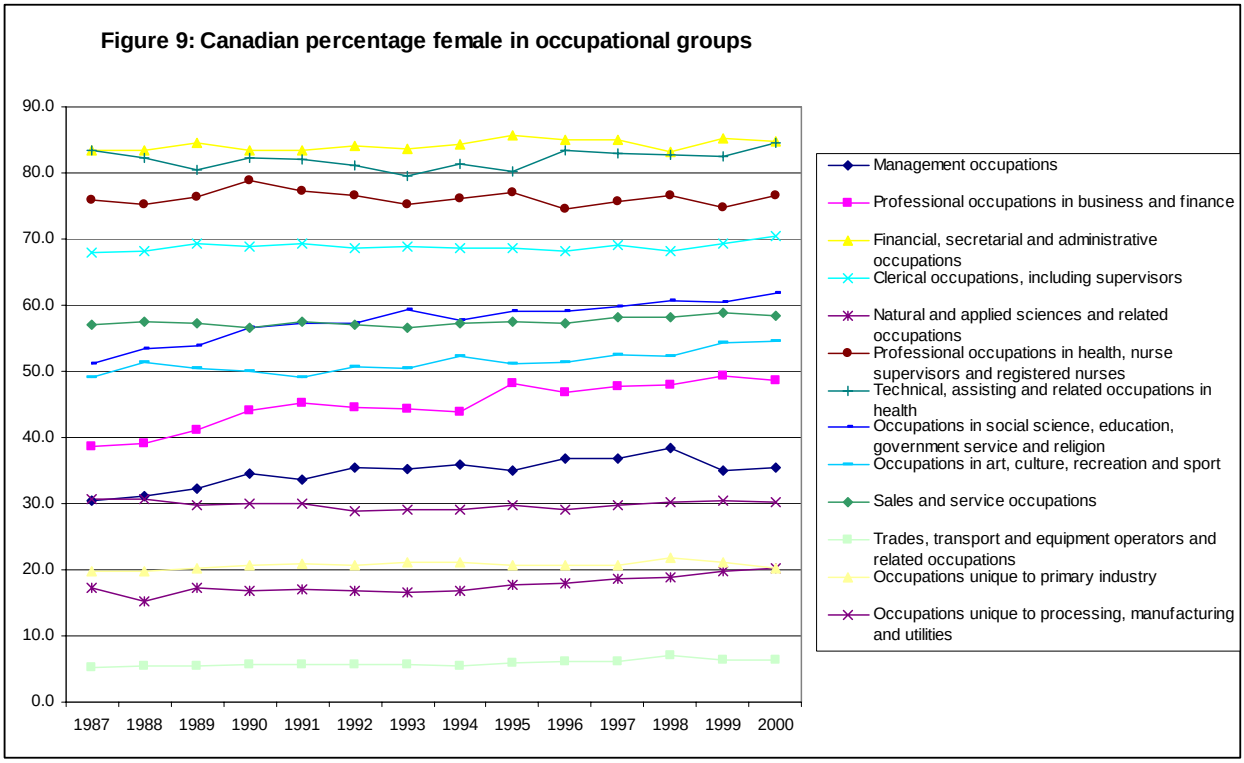
Gender trends in the Canadian labour market

Women now comprise a larger share of the labour force than was the case in the early 1980s. Nevertheless, women's participation has been characterized by occupational segregation, especially in the historically male-dominated occupations such as engineering, some

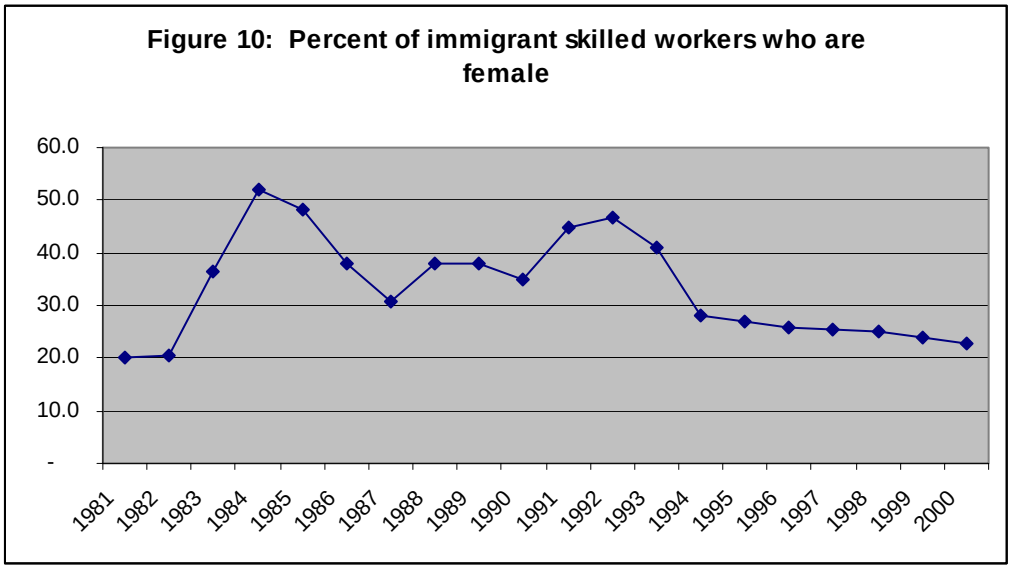


skilled worker trades, and high management positions (Dryburgh, 2000). Women dominate financial secretarial and administrative occupations, technical and professional occupations in health, and clerical occupations. Although women are a small minority in natural and applied science occupations, they have shown a proportional growth since 1987. Other occupational groups where women's proportional representation grew in this period are management, professional occupations in business and finance, and occupations in social science, education, government and religion. These occupational groups generally require high levels of education, and with the exception of the social science occupations are all male-dominated occupational groups. The increasing numbers of women entering the labour force appear to be impacting typically male-dominated occupations. More Canadian competition for jobs in these

occupational groups may mean immigrants with these occupational skills will be in less demand than others.



The overall proportion of women immigrants to Canada has increased in recent years mainly as a result of growing numbers of family reunification migrations (Boyd and Vickers, 2000), but women skilled worker migrants have also increased in the last two decades from 3,139 in 1981 to 9,920 in 2000. As a proportion of all skilled workers, however, women's percentages tend to reflect fluctuations in the numbers of men skilled workers. The number of women skilled workers was smaller, but more stable throughout this period than the number of men in that immigrant category.



Proxies for structural impacts

Given the context provided above, this study divides landing cohorts into four rough proxy groups. The first of these proxies covers the period from 1981 to 1985 and is characterized in Canadian immigration policy by limited skilled worker admittance and a focus on arranged employment over general skills and education. This was a time of economic recession and the beginning of recovery, with an unemployment rate at its highest level of the two decades in 1983. The aging of the labour force was just beginning, but already there was evidence of a decline in the number of 15 to 24 year olds in the labour market. The rise in the percentage of women in the labour market was evident through this period. Thus, immigrants landing in Canada in the 1981 to 1985 context may have found occupations favouring younger workers, such as sales and service or trades occupations, more receptive, whereas those jobs most affected by women's increasing labour force participation would feature higher competition.

The second period, 1986 to 1990 was characterized by an immigration policy more favourable to skilled workers, but still prioritizing refugees and family reunification. The economic boom was improving labour market outcomes as evidenced by a decline in the unemployment rates for most occupational groups. The lowest unemployment rates were for the

occupational groups requiring high education, such as health, management and occupations in the social sciences, education, government and religion group, suggesting possible shortages of workers in these occupational groups. Unemployment rates were higher, but declining for sales and services and trades occupations up to 1989, providing a potential window of opportunity for younger workers and other immigrants who intended working in these occupations. Women immigrant skilled workers landing in this period did so at a time when Canadian women's increasing numbers were perhaps at their steepest increase of the two decades of interest. So, immigrants landing in Canada from 1986 to 1990 may have increased in occupations requiring high education as well as in sales and services and trades occupations.

The third period comprises immigrants landing from 1991 to 1993 at a time when Canadian immigration policy was being modified to give greater priority to economic immigrants. The economy was in recession from 1990 to 1992 with overall unemployment still high until 1993. The unemployment rates had peaked in trades and manufacturing occupations by 1991 and were in a steep decline in the subsequent few years, whereas unemployment rates continued to rise for occupations such as health, management, and the social science, education, government and religion occupational group. So, demand was still high but was decreasing in the occupational groups requiring higher education and skills and had begun to increase in those occupations requiring less education and skills through this period. Women's labour force participation continued to increase, but the proportion of women in the labour force had started to stabilize at about 45 percent of the labour force. By contrast, the proportion and number of older workers aged 45 to 64 in the labour force was beginning a steep increase that would continue to 2003, the most recent year for which data are available.

Immigrants landing in the 1991 to 1993 period were thus landing at a time when there was low overall labour demand, but an increasing demand in trades and manufacturing after

1991. In addition, older workers were increasingly dominating the labour force and potentially taking those high paying jobs that require experience.

The final structural proxy group is the landing period of 1994 to 2000. This was a period of economic boom with an immigration policy targeting skilled workers. The gender gap was pretty stable through this period with only a very slight closing of the gap. The number and proportion of older workers in the labour force continued to increase steeply, and the demand grew in most occupational groups except in occupations associated with primary industry. Participation in the labour force grew strongly in the sales and service occupations, manufacturing, and natural and applied sciences, whereas labour force participation in trades occupations remained steady.

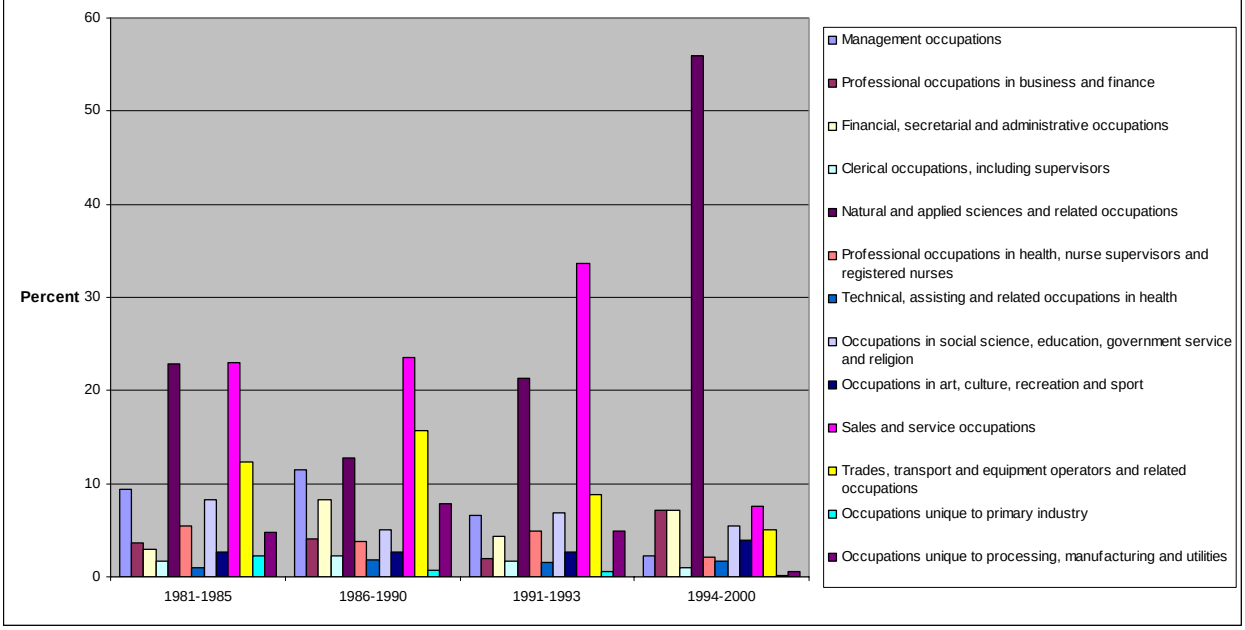
The social structures of this period may facilitate admission of immigrants with specific high-demand skills in health, IT occupations, business or the occupational skills associated with work in social sciences, government, education or religion. Immigrant women should be less negatively affected by competition with Canadian women entrants to the labour market, as their increasing representation had levelled off. Age may be a factor for immigrants as with the previous period, with older immigrants facing high competition, and a greater demand for younger workers.

Impact of structural factors on immigrant occupational composition

Multinomial logit modelling was used to model the likelihood of being in a given occupational group by proxy. The first model looks at the relationship between structural proxies and occupational composition without any controls. The second model adds a control for the source country (world area) where the immigrant last resided permanently. The final model adds controls for individual characteristics age, age squared, Canadian language ability, education, and gender, to see if structural factors are related to occupational structure once these individual

characteristics are accounted for. The structural proxy reference category is 1994 to 2000, and the occupational reference category is "Occupations unique to processing, manufacturing and utilities." Only the coefficients for landing group are presented. Figure 11 shows the occupational composition for the four structural proxy groups.

Figure 11: Occupational composition within structural proxy periods



All three models are significant, indicating that the null hypothesis that all effects of the independent variables are zero can be rejected. The model fit increases with the addition of controls: the fit with the full model is quite good at 0.654. In model 1 the effect of individual characteristics is not separated from the structural effects, however, results with controls in the model provide evidence that both individual characteristics and social structures influenced the occupational composition of immigrants through this period.

The probability of intending work in a management occupation versus a manufacturing occupation were lower for those in all three structural proxy periods than in the 94-00 reference period for models one and two. The addition of individual characteristics controls in model

three resulted in a higher probability of intending work in a management occupation versus manufacturing for the 81-85 proxy, a non-significant effect for the 86-90 proxy and a lower probability for the 91-93 proxy compared with 94-00, given individual characteristics and source country. This makes sense, since 91-93 was characterized by an increasing demand in trades and manufacturing and an aging Canadian labour force likely to be moving into management occupations.

The effects of the structural proxies on intending to work in professional occupations in business and finance versus manufacturing are negative indicating a lower probability of intending work as a professional versus manufacturing in the three earlier periods, compared with 94-00, given source country and individual characteristics. The decreasing strength of the model three parameters (compared with models one and two) indicate that the individual characteristics of education and language ability that were more highly rewarded post-1993 were having an impact on the probability of working in professional occupations in business and finance. The higher demand for workers in sales and services and trades occupations in the 81-85 and 86-90 proxy periods, and the increasing demand for trades workers in 91-93, coupled with the recession, explain why structural proxies for earlier periods compared with 94-00 remain negative and significant after controls are added.

The impact of controlling for personal characteristics and source country is minimal in the case of financial, secretarial and administrative occupations versus manufacturing. Compared with 94-00 all other structural proxies are associated with a lower probability of working in financial secretarial and administrative occupations versus manufacturing. The intention to work in manufacturing had dwindled to low proportions by the 94-00 period, whereas it was still a strong occupational possibility in the early periods. In addition, the competition of increasing

numbers of Canadian in this female-dominated occupation may have made a difference earlier, whereas by the 94-00 period women's participation in the labour force had levelled off.

As was the case for financial, secretarial and administrative occupations, the effect of structural proxies on the probability of being in clerical occupations versus manufacturing did not change much after controls were added. This pattern appears to hold true for those occupations not requiring high levels of post-secondary education, including sales and service, trades and transport, and occupations unique to primary industry. In the case of clerical occupations, the probability of intending this type of work compared with manufacturing was lower than 94-00 in the three earlier periods, but lowest in 91-93.

The natural and applied sciences occupations dominated the occupational composition of the 94-00 proxy period. Relative to manufacturing, the probability of intending work in natural and applied sciences occupations was lowest in the 86-90 period, whereas the effect of the 81-85 proxy was less strong than that of the other proxy periods. These occupations may have been easier to arrange during this period when that was a condition of consideration for admission, than other occupations, given the international aspect of much academic and applied research undertakings.

The probability of intending work in professional or technical occupations in health versus manufacturing was lower in the three proxies compared with 94-00. Proxies had less of an effect on the probability of working in professional health occupations than technical and assisting health occupations. The probabilities for both of these occupational groups were weakened when controls for individual characteristics and source country were added. The 86-90 period was least like the reference period, perhaps reflecting the high demand for sales and service workers at that time. While the demand for both groups of health workers has been high for all periods, the demand grew through the 1990s.

Occupations in social science, education, government service and religion were increasingly taken by Canadian women through the period of their growing proportions in the labour market, and demand for workers in these occupations grew through the 1990s. This may explain why the probability of immigrants intending work in social sciences versus manufacturing was less likely in the earlier proxy periods than 94-00. The effect of proxy periods was strongest for 86-90 where immigrants were much less likely to intend working in social sciences versus manufacturing than those in the 94-00 period.

The likelihood of intending work in occupations in art, culture, recreation and sport versus manufacturing was also lower in the earlier proxies than 94-00. This appears to be related to increasing rewards for individual characteristics such as education. Canadian women were competing for these occupations with growing representation in the labour force and in these occupations in particular. The low but increasing numbers of Canadians employed in art, culture, recreation and sport may also have had a negative effect for immigrants in the earlier periods with higher probability of intending work in these occupations in 94-00.

The proportions of immigrants landing with the intention to work in sales and service occupations was high in all periods except 94-00. Nevertheless, controlling for individual characteristics and source country, the probability of working in sales and services occupations versus manufacturing was lower in each earlier period than the reference period. The effect of each period was weak, however 86-90 had the strongest effect on the probability of intending work in sales and service occupations versus manufacturing. Sales and service occupations are characterized by younger workers. The larger number of available younger Canadian workers in the earlier periods compared with 94-00 may help explain the lower probability of intending work in sales and services versus manufacturing in the periods prior to 94-00, controlling for individual characteristics and source country.

The probabilities of intending work in trades, transport and equipment operating or occupations unique to primary industry did not change much after source country and individual characteristics were controlled. Immigrants intending to work in trades occupations versus manufacturing had a lower probability of doing so in the earlier periods compared with 94-00. The structural proxy effect was strongest for 91-93 when unemployment rates were peaking for this occupational group. Declining unemployment rates that followed this peak may help explain the greater probability of immigrants intending work in trades versus manufacturing in 94-00.

Structural effects on the probability of intending work in occupations unique to primary industry were small and negative, with non-significant effects for 81-85 compared with 94-00.

Conclusions

The aim of this paper was to characterize five structural forces and to assess their affect on the occupational composition of immigrants to Canada from 1980 to 2000. The effect of structural proxies on the occupational composition was significant after controls were added. As mentioned earlier, the structural proxies were roughly constructed to reflect distinct changes in the five structures under consideration. Although controls for individual characteristics should clean up these proxies somewhat, clearly other structures may be captured by the proxies. Nevertheless, the aim was to contextualize immigration and this exercise has done that for the 1980 to 2000 period.

Research into explanations for declining immigrant incomes may well benefit from this analysis. It may be worth examining whether the declining income trend may in part be explained by the occupational composition of cohorts.

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Appendix 1: Selection criteria for immigration to Canada

Factor	Max. Units of Assessment	
	1978	**1986**
Education	12	12
Specific Vocational Preparation	15	15
Experience	8	8
Occupation	15	10
Arranged employment	10	10
Location	5	0
Age	10	10
Knowledge of French or English	10	15
Personal Suitability	10	10
Levels Control	NA	10
Relative	5	0
	100	100

Source: Citizenship & Immigration Canada

Table 1: Canadian structural factors, 1981 to 2000: Immigration levels and the economy

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Immigration levels for skilled workers																				
Total immigrants[1]	128,639	121,176	89,188	88,271	84,334	99,325	151,999	161,494	191,493	216,396	232,744	254,817	256,741	224,364	212,859	226,039	216,014	174,159	189,922	227,313
Total skilled workers[2]	15,459	14,299	6,127	6,640	7,314	12,816	25,989	19,532	19,580	19,842	19,343	17,872	18,525	16,331	21,935	29,224	33,236	28,584	34,089	43,573
Men	12,320	11,349	3,884	3,172	3,771	7,930	17,951	12,143	12,187	12,945	10,689	9,526	10,901	11,765	16,010	21,655	24,794	21,413	25,992	33,653
Women	3,139	2,950	2,243	3,468	3,543	4,886	8,038	7,389	7,393	6,897	8,654	8,346	7,624	4,566	5,925	7,569	8,442	7,171	8,097	9,920
Skilled workers as percent of all immigrants	12.0	11.8	6.9	7.5	8.7	12.9	17.1	12.1	10.2	9.2	8.3	7.0	7.2	7.3	10.3	12.9	15.4	16.4	17.9	19.2
Percent of skilled workers who are female	20.3	20.6	36.6	52.2	48.4	38.1	30.9	37.8	37.8	34.8	44.7	46.7	41.2	28.0	27.0	25.9	25.4	25.1	23.8	22.8
Economic indicators[3]																				
Unemployment rate	7.6	11	11.9	11.3	10.7	9.6	8.8	7.8	7.5	8.1	10.3	11.2	11.4	10.4	9.4	9.6	9.1	8.3	7.6	6.8
Unemployment rate by occupational groups[3]																				
Management occupations	NA	NA	NA	NA	NA	NA	3.6	3.1	3.3	3.2	4.3	4.5	4.3	3.7	3.3	3.1	2.8	2.7	2.3	2.1
Professional occupations in business and finance	NA	NA	NA	NA	NA	NA	3.5	2.8	2.5	3.1	4.2	4.1	4	3.4	3.6	2.7	2.9	2.2	2.7	2.1
Financial, secretarial and administrative occupations	NA	NA	NA	NA	NA	NA	4.7	4.5	4.5	4.7	5.5	5.9	6.1	5.2	4.6	4.2	4	3.5	3	2.6
Clerical occupations, including supervisors	NA	NA	NA	NA	NA	NA	6.1	5.7	5.9	5.8	7.2	7.2	7.3	6.3	5.8	6	5.2	4.9	4.8	4
Natural and applied sciences and related occupations	NA	NA	NA	NA	NA	NA	4.2	4.2	3.4	4.1	5.1	5.9	5.9	4.9	4.2	4.3	3.5	3.5	3.4	2.9
Professional occupations in health, nurse supervisors and registered nurses	NA	NA	NA	NA	NA	NA	1.6	1.3	1.5	1	1.6	1.9	1.6	1.7	1.6	1.6	1.3	0.9	1	0.6
Technical, assisting and related occupations in health	NA	NA	NA	NA	NA	NA	3.0	3.2	2.7	2.9	3	3.6	3.6	3.5	3	2.7	2.7	2.4	1.9	1.9
Occupations in social science, education, government service and religion	NA	NA	NA	NA	NA	NA	3.8	3.1	3.2	2.9	3.4	3.7	4.1	3.6	3.7	3.6	3.1	3.1	2.7	2.7
Occupations in art, culture, recreation and sport	NA	NA	NA	NA	NA	NA	6.3	6.9	6.0	5.7	7.6	7.5	7.7	6.8	6.7	6.6	6.3	4.5	4.7	5.2
Sales and service occupations	NA	NA	NA	NA	NA	NA	8.1	7.3	7.2	7.6	9.1	9.3	8.8	8	7.2	7.4	6.8	6.3	6	5.4
Trades, transport and equipment operators and related occupations	NA	NA	NA	NA	NA	NA	9.3	8.5	8.1	10	13.6	13.3	12.8	11.2	10.2	9.8	8.6	8.2	7.5	6.6
Occupations unique to primary industry	NA	NA	NA	NA	NA	NA	9.4	8.9	8.6	8.6	9.9	11.2	10.1	9.5	9.4	9.6	9.6	9.9	9.7	9.4
Occupations unique to processing, manufacturing and utilities	NA	NA	NA	NA	NA	NA	8.9	7.7	7.8	10.7	13.1	12.4	11.3	9.4	8.5	9.3	7.9	7.8	7.3	6.4

[1] Source: *Facts & Figures*, Citizenship and Immigration Canada
[2] Source: LIDS, Citizenship and Immigration Canada, 2000
[3] Source: Labour Force Survey, 2003. *Labour Force Historical Review* Cat. Number 71F0004XCB

Table 2: Canadian structural factors, 1981 to 2000: Age and Gender[1]

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Percent of the Canadian labour force in age groups																				
15-24 years	26.8	25.6	24.8	24.1	23.3	22.7	21.9	21.0	20.2	19.2	18.5	18.0	17.4	17.0	16.8	16.4	16.1	16.1	16.3	16.4
25-44 years	47.7	48.9	49.8	50.8	51.7	52.7	53.3	54.0	54.6	55.2	55.4	55.1	55.0	54.5	54.3	54.2	53.8	53.1	52.1	51.2
45-64 years	24.1	24.1	24.1	23.7	23.7	23.3	23.5	23.7	23.9	24.2	24.7	25.6	26.3	27.0	27.5	28.0	28.7	29.4	30.2	31.0
65 years and over	1.4	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.5	1.4	1.4
Number of the Canadian labour force in age groups (000)																				
15-24 years	3,273.3	3,143.9	3,106.8	3,068.6	3,026.3	3,014.2	2,961.2	2,888.3	2,831.5	2,737.6	2,653.7	2,580.6	2,517.1	2,493.8	2,471.5	2,449.2	2,437.9	2,476.7	2,565.7	2,620.5
25-44 years	5,825.6	6,007.0	6,231.2	6,473.5	6,719.2	6,987.8	7,200.0	7,442.5	7,670.1	7,865.0	7,936.7	7,908.6	7,980.5	7,976.1	8,011.9	8,073.6	8,147.2	8,185.4	8,190.3	8,196.6
45-64 years	2,949.3	2,966.2	3,012.9	3,023.8	3,078.2	3,084.7	3,174.3	3,266.2	3,355.5	3,442.6	3,539.9	3,673.7	3,810.1	3,943.4	4,062.0	4,172.5	4,354.3	4,531.5	4,745.7	4,964.4
65 years and over	174.1	178.7	171.7	173.5	178.4	170.4	176.1	181.6	189.5	195.6	199.7	199.3	196.7	213.3	204.7	204.2	213.7	224.0	219.6	217.7
Average Canadian retirement age																				
Average	64.6	64.7	64.1	64.4	64.1	63.7	63.5	63.3	63.2	62.9	62.7	62.9	62.2	62.1	61.9	61.8	61.2	60.9	61	61.6
Median	64.9	64.8	64.7	64.7	64.8	64.6	64.3	63.3	63.8	62.8	62.8	62.8	62.2	62	61.9	62.3	60.6	60.8	60.7	61.2
Percent male and female of Canadian labour force																				
Men	59.3	58.8	58.3	57.9	57.4	57.0	56.6	56.1	55.9	55.5	55.0	54.9	54.9	54.8	54.6	54.6	54.4	54.1	54.1	53.9
Women	40.7	41.2	41.7	42.1	42.6	43.0	43.4	43.9	44.1	44.5	45.0	45.1	45.1	45.2	45.4	45.4	45.6	45.9	45.9	46.1
Percent female by occupation, Canadians																				
Management occupations	NA	NA	NA	NA	NA	NA	30.4	31.1	32.2	34.5	33.6	35.6	35.2	35.9	35.1	36.9	36.8	38.4	35.0	35.4
Professional occupations in business and finance	NA	NA	NA	NA	NA	NA	38.6	39.1	41.1	44.1	45.3	44.4	44.3	43.9	48.2	46.8	47.7	48.0	49.4	48.7
Financial, secretarial and administrative occupations	NA	NA	NA	NA	NA	NA	83.4	83.5	84.6	83.4	83.5	84.0	83.5	84.2	85.7	84.9	85.1	83.2	85.1	84.8
Clerical occupations, including supervisors	NA	NA	NA	NA	NA	NA	68.0	68.2	69.2	68.8	69.4	68.5	68.9	68.6	68.5	68.2	69.1	68.2	69.4	70.4
Natural and applied sciences and related occupations	NA	NA	NA	NA	NA	NA	17.3	15.2	17.3	16.8	16.9	16.8	16.7	16.8	17.7	18.0	18.7	18.8	19.7	20.2
Professional occupations in health, nurse supervisors and registered nurses	NA	NA	NA	NA	NA	NA	75.9	75.3	76.4	78.8	77.2	76.6	75.3	76.1	77.1	74.4	75.7	76.6	74.7	76.7
Technical, assisting and related occupations in health	NA	NA	NA	NA	NA	NA	83.5	82.3	80.3	82.3	82.1	81.1	79.5	81.4	80.3	83.5	82.8	82.7	82.4	84.5
Occupations in social science, education, government service and religion	NA	NA	NA	NA	NA	NA	51.1	53.4	53.9	56.6	57.3	57.2	59.2	57.6	59.0	59.0	59.8	60.7	60.4	61.9
Occupations in art, culture, recreation and sport	NA	NA	NA	NA	NA	NA	49.0	51.3	50.4	50.0	49.1	50.7	50.4	52.4	51.1	51.3	52.5	52.3	54.4	54.6
Sales and service occupations	NA	NA	NA	NA	NA	NA	57.1	57.5	57.3	56.6	57.5	57.0	56.6	57.2	57.5	57.4	58.1	58.2	58.8	58.5
Trades, transport and equipment operators and related occupations	NA	NA	NA	NA	NA	NA	5.3	5.4	5.5	5.7	5.6	5.7	5.8	5.4	5.8	6.1	6.2	7.0	6.3	6.4
Occupations unique to primary industry	NA	NA	NA	NA	NA	NA	19.8	19.7	20.3	20.8	20.9	20.6	21.1	21.2	20.6	20.7	20.7	21.8	21.0	20.2
Occupations unique to processing, manufacturing and utilities	NA	NA	NA	NA	NA	NA	30.7	30.8	29.8	30.0	29.9	29.0	29.1	29.0	29.9	29.2	29.7	30.3	30.4	30.3

[1]Source: Labour Force Survey, 2003. *Labour Force Historical Review* Cat. Number 71F0004XCB

Table 3: Multinomial logit model results[1]

	Management occupations	Professional occupations in business and finance	Financial, secretarial and administrative occupations	Clerical occupations, including supervisors	Natural and applied sciences and related occupations	Professional occupations in health, nurse supervisors and registered nurses	Technical, assisting and related occupations in health	Occupations in social science, education, government service and religion	Occupations in art, culture, recreation and sport	Sales and service occupations	Trades, transport and equipment operators and related occupations	Occupations unique to primary industry	Occupations unique to processing, manufacturing and utilities
N	24,092	21,720	26,694	5,852	151,691	13,504	6,562	24,308	13,404	68,942	36,915	2,518	13,815
Structural proxies													
Model 1: Occupations by structural proxies (Betas)													
1981-1985	-0.722	-2.846	-3.082	-1.485	-3.071	-1.243	-2.828	-1.770	-2.552	-1.070	-1.293	0.372	
1986-1990	-1.027	-3.245	-2.533	-1.675	-4.154	-2.078	-2.588	-2.756	-3.078	-1.549	-1.552	-1.282	
1991-1993	-1.098	-3.502	-2.719	-1.512	-3.163	-1.353	-2.309	-1.974	-2.576	-0.711	-1.634	-0.926	
1994-2000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	
Intercept	1.408	2.590	2.588	0.466	4.646	1.365	1.141	2.326	1.978	2.650	2.246	-1.120	
Pseudo R squared (Nagelkerke	0.247												
Model 2: Occupations by structural proxies with world areas (Betas)													
1981-1985	-0.795	-2.598	-2.881	-1.597	-2.906	-1.368	-2.743	-2.146	-2.711	-0.967	-1.407	0.002	
1986-1990	-0.891	-3.062	-2.376	-1.716	-3.946	-1.968	-2.477	-2.696	-2.949	-1.433	-1.448	-1.146	
1991-1993	-1.116	-3.424	-2.660	-1.565	-3.116	-1.399	-2.268	-2.051	-2.612	-0.648	-1.702	-1.060	
1994-2000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	
Intercept	2.122	3.726	2.928	1.267	5.553	3.417	2.407	3.678	2.876	3.488	3.117	0.238	
Pseudo R squared (Nagelkerke	0.335												
Model 3: Occupations by structural proxies with world areas and individual characteristics (language ability, education , sex, age, agesq)													
1981-1985	0.265	-1.444	-2.309	-1.283	-1.765	-0.193	-1.928	-0.846	-1.728	-0.932	-1.318	*-0.055	
1986-1990	*0.032	-2.026	-2.025	-1.445	-2.818	-0.926	-1.761	-1.552	-2.123	-1.404	-1.423	-1.241	
1991-1993	-0.482	-2.605	-2.742	-1.528	-2.231	-0.681	-1.844	-1.304	-2.147	-0.890	-1.535	-0.986	
1994-2000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	
Intercept	-5.448	-1.293	-1.800	2.448	4.375	1.537	1.334	5.646	1.077	2.320	-3.643	2.317	
Pseudo R squared (Nagelkerke	0.654												

Total N = 410,017

Notes:

Reference category for the equation is: occupations unique to processing, manufacturing and utilities

Reference category for proxy variable is 1994-2000.

*not significant, no asterix means p<.001

[1] Source: LIDS, Citizenship and Immigration Canada, 2000

Table 4: Occupational composition over structural proxy periods[1]

Structural proxies	Management occupations %	Professional occupations in business and finance %	Financial, secretarial and administrative occupations %	Clerical occupations, including supervisors %	Natural and applied sciences and related occupations %	Professional occupations in health, nurse supervisors and registered nurses %	Technical, assisting and related occupations in health %	Occupations in social science, education, government service and religion %	Occupations in art, culture, recreation and sport %	Sales and service occupations %	Trades, transport and equipment operators and related occupations %	Occupations unique to primary industry %	Occupations unique to processing, manufacturing and utilities %
1981-1985	9.4	3.7	2.9	1.7	22.9	5.4	1.0	8.3	2.7	23.0	12.3	2.2	4.8
1986-1990	11.5	4.1	8.3	2.3	12.8	3.8	1.8	5.1	2.6	23.5	15.7	0.7	7.8
1991-1993	6.6	2.0	4.3	1.7	21.4	4.9	1.5	6.9	2.7	33.7	8.9	0.6	4.9
1994-2000	2.2	7.2	7.2	1.0	56.0	2.1	1.7	5.5	3.9	7.6	5.1	0.2	0.5

[1] Source: LIDS, Citizenship and Immigration Canada, 2000