The Social Rate of Return to Investing in Character:

An Economic Evaluation of Alberta's

Immigrant Access Fund

Micro Loan Program

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- Skilled immigrants have been identified as a key source of labour supply for addressing the expected labour market shortages in Canada arising from an aging population and strong economic growth. The integration of immigrants into the workforce often requires that they have the necessary accreditation to work at their chosen occupation. However, credential recognition has proven to be a significant labour market barrier for skilled immigrants in Canada as evidenced by the high rates of underemployment of this group. The Immigrant Access Fund (IAF) provides small loans on a not for profit basis to assist immigrants in acquiring the Canadian accreditation and training they need to work their field of expertise. These loans assist skilled immigrants in moving from low-income "survival" jobs to jobs that better utilize their valuable knowledge and skills.
- Private lenders are unlikely to undertake the supply of small loans like those offered by the IAF without charging substantial interest to cover the high overhead costs. It is estimated that if these loans were to be made by a commercial lender, the interest rate would be set around 22%, which would cover administrative costs only.
- Under very conservative assumptions, our assessment of the average social return to the IAF loan program demonstrates that this is a very high return social program with annual real rates of return of 33% or more.
- These returns are even higher for higher earning occupations such as health and engineering, which are 58% for nurses, 32% for engineers and more than 100% for physicians.
- In order for the program to yield a 5% rate of return (considered the minimum rate that justifies a program such as this), it is needed that, on average a little more than 2 out of 3 borrowers successfully acquire accreditation and work at the accreditation level. In contrast, only 1 in 3 international medical graduate borrowers and 1 in 2 of IAF borrowers who are seeking nursing credentials need to work in their field to justify a return of 5% on the IAF program.
- A preliminary evaluation of the overall rate of accreditation completion among borrowers that have been in the program for more than 18 months is 95%, but lower for the health occupations (60%) and engineer occupations (49%). The number of loan recipients that report working in their field of expertise is 64%. However, around 68% of health professionals and 65% of other professional occupations that completed the program are working in their field of expertise, implying that the returns on the loans to these individuals is between 32% (engineers) and above 100% (physicians).
- Although the preliminary evaluation is promising, further evaluation when the program is fully mature is necessary to provide a full evaluation.

Introduction

Skilled immigrants have been identified as a key source of labour supply for addressing the expected labour market shortages in Canada arising from an aging population and strong economic growth (Emery 2006; IAF March 31, 2009). However, the integration of immigrants into the workforce often requires that they have the necessary accreditation to work at their chosen occupation in the Canadian labour market. Credential recognition has proven to be a significant labour market barrier for skilled immigrants in Canada as evidenced by the high rates of underemployment of this group. To address the underemployment of skilled immigrants in Alberta, the Immigrant Access Fund (IAF) provides small loans on a not for profit basis to assist immigrants in acquiring the Canadian accreditation and training they need to work in their field of expertise. These loans assist skilled immigrants in moving from low-income "survival" jobs to jobs that better utilize their valuable knowledge and skills. Although anecdotal evidence suggests that the IAF program has produced successes, there is no analytical evidence as to the overall economic value of the program. Our assessment of the social return to the IAF loan program demonstrates that this is a very high return social program with annual real rates of return of 33% or more.

The IAF Loan Program

Started in 2005 in Calgary and expanded to Edmonton in 2007, the IAF is an Alberta not-for-profit organization with charitable status that provides internationally trained/educated professional and trades people with loans of up to $5,000 (exceptions to $10,000 are considered) to help with tuition fees, books and courses materials, exam fees, travel expenses to sit exams, qualification assessment and professional association fees, living allowance during study time, or other costs relating to becoming able to work in their field.

The IAF difference

The IAF is different from other programs providing micro loans to immigrants in other provinces in terms of how it funds its loans (other micro loan programs have bank partners to fund approved loans; IAF's loan capital comes from donations or from a bank line of credit), how it delivers its loans (through community agencies rather than a bank), applicant eligibility (immigrants from all occupations are welcome to apply; other programs have restrictions) and use of funds (IAF loan funds may be used broadly; other programs have restrictions (tuition only, for example) and often do not allow funds be used for living expenses). These unique characteristics have led to IAF being the largest and most successful micro loan program for immigrants in Canada.

IAF's operating model is to partner with other agencies that have either experience with micro loan programs, or strong ties to the immigrant population in their community. These agencies—referred to as Loan Delivery Partners—accept and screen applications, present applications to the IAF Loan Review Committee, and provide all services related to the administration of the loans including preparing the paperwork to establish the loan, setting repayment schedules, disbursing funds, collecting payments, and managing the loan portfolio. IAF provides loan fund capital as loans are approved. Loan Delivery Partners provide loan activity reports and loan portfolio summaries. IAF provides leadership and direction to the loan program; sets policies and procedures; raises funds for loan capital; raises funds for operating costs; and works to create public awareness of the economic and social benefits of immigrants being fully employed in their field. IAF develops strong relationships with other agencies and organizations working with immigrants on accreditation, training, and employment matters and counts on them to refer their clients to IAF for loans.

The IAF board is diligent not to duplicate services provided by others, preferring to support those services by referring IAF clients to them. The IAF acts as a lender of last resort where its clientele consists of applicants who cannot access suitable credit from mainstream lenders or government programs. Loan approvals are based on the applicant's character, not their collateral. Loans are registered with a credit agency, so loan recipients can build their credit rating in Canada. Interest is paid at 1.5% above the Bank of Canada prime rate for business; recipients pay interest only while completing their accreditation/training (maximum two years) and have another two years to pay back the principal. IAF loans are not limited to predetermined occupations but while IAF borrowers represent 63 different occupations, engineers, accountants, physicians and nurses account for 50% of loan recipients.

As of March 31, 2010 a total of 427 loans had been approved—262 (61%) through the Calgary loan delivery partner Momentum, and 165 (39%) through the Edmonton loan delivery partner, the Edmonton Mennonite Centre for Newcomers (EMCN). The average IAF loan is $4,729 (December 31/09). Since 2007 more than $1.8 million in loans has been committed and $1.6 million disbursed. The repayment rate is 98% (only seven loans have been written off), which is extremely high for a micro loan program. The high repayment rate is more remarkable given that 65% of IAF borrowers were unemployed when they applied to the IAF. Of the 35% that were employed, 50% were working in 'survival' jobs and 50% were working in their field, but not in positions commensurate with their skills and experience. Twenty percent of applicants had monthly expenses that exceeded their income.

While more than $600,000 has been donated for loan capital, loans are presently being funded by a $1 million line of credit which has been secured by personal guarantees of Alberta business and community leaders. Loan delivery costs are substantial for the IAF. These costs likely lie between 50% and 100% of the loan principal. To date, almost all of the costs to deliver the program have been provided by the provincial and federal governments (funding options were limited prior to IAF receiving charitable status). Being so heavily dependent on government for operating funds leaves the IAF vulnerable to funding cutbacks and shifts in government priorities. Since borrowers are only expected to repay the loan principal and prime plus 1.5 for interest, the IAF is not recouping these loan delivery costs through the loan contract. This feature of the program means that borrowers benefit from subsidized borrowing costs.

The Need for a Not for Profit Loan Program

Private lenders are unlikely to be enthusiastic about making small loans like those offered by the IAF without charging substantial interest costs to cover the high overhead costs. With the IAF program, the borrower repays the loan principal within 4 years at an interest rate of prime plus 1.5. If this loan were to be made by a commercial lender, then presumably the loan repayment would be set so that the lender covers the opportunity cost of the funds allocated to the principal and administrative costs. For example, a borrower would effectively borrow $10,000 to receive $5,000 in funds for their use. Over a four-year period at a 5% interest rate, the borrower would have paid a total of $12,160.[1] Accounting for the repayment of the loan delivery costs means that the borrower would have paid an effective annualized rate of interest of around 22%. If the repayment of the loan is not guaranteed then the lender could require an even higher interest to compensate for the risk.

The Social Rate of Return to an Investment

The resource costs associated with the IAF loan program can be separated into two parts; the loan principal and the loan delivery costs. As discussed above, the IAF borrower repays the principal plus interest so those funds meet the required opportunity cost. The loan delivery costs are not paid for by the borrower and are a subsidy. An evaluation of the IAF program amounts to assessing whether this use of resources provides "good value for money" for Alberta. The use of public funds and donated private funds for this kind of purpose is economically justified if the social return to that expenditure exceeds the opportunity cost of those funds. In other words, would society be better off investing the funds in risk free bonds or expending them on a loan program that increases the earnings and employment outcomes of skilled immigrants?

A standard way for an economist to value the returns to society from investment in ensuring immigrants have full employment in their field in Alberta is to use an income based approach. If we assume that the wages/earnings of workers reflect their productivity (value of what they produce for society), then the earnings of an individual reflects the value of their labour services to society.[1] The lack of recognition of credentials, and/or doubts about skills precludes many skilled immigrants from obtaining employment in their pre-immigration fields. These immigrants typically work in occupations that generate lower incomes than those that value their education, training and credentials. The gain to society from recognizing an immigrant's credentials would be represented by the gain in income that immigrant earns in his/her chosen profession over that which they would have earned in their next best alternative occupation. This assumes that there is a demand for workers with the credential in question and not a surplus.

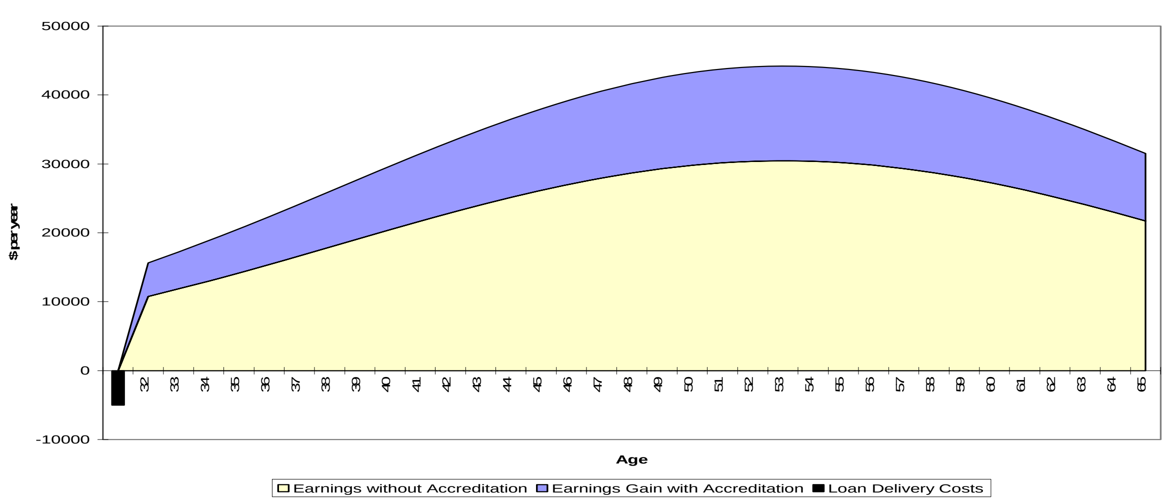
The subsidy to the IAF borrower to aid in the acquisition of Canadian credentials represents a social investment. Costs are incurred today in expectation of a stream of benefits into the future. Thus, a challenge for evaluating if the subsidy to the borrower is "good value for money" is that the costs are incurred now, but the benefits will accrue long into the future. Social Rates of Return are intended to represent the value to society of an investment in an individual's education or accreditation. In the case of the IAF loan program we compare the

[1] This income based approach excludes the non-pecuniary benefits that may arise from IMGs providing service to immigrant communities.

labour market benefits from acquiring the Canadian credential to the loan delivery costs incurred by society in making the loan. Since the loan principal is repaid with interest, it represents neither a cost nor a gain for society and is consequently not considered in the social rate of return calculation.

The most general way to think about what will influence the social return to the IAF lending program is that the social return will be increasing in the size of the earnings gain of the immigrant with the credential and in the probability of working in a job that requires the credential, and decreasing with the size of the upfront loan delivery costs. Figure 1 depicts an age-earnings profile for an immigrant without recognized credentials and with recognized credentials and certainty of employment in his/her chosen occupation. The costs of the social investment are the up-front loan delivery costs and the foregone earnings from the job not requiring the credential. The benefits of the social investment are represented by the increase in earnings with the Canadian credential over the next best alternative earnings. The social rate of return compares the size of the earnings gain from credential recognition over the working life to the loan delivery costs. The longer the remaining working life after accreditation, the greater the total benefit accruing to the upfront investment. The higher the probability of success in terms of finding employment in the immigrant's chosen field, the larger the gain in earnings over the high school age earnings profile.

Figure 1: Costs and Benefits of IAF Loans for Alberta Society



Hence, if we wish to assess the value of a credentialed immigrant for Alberta, we need to assess the value of the stream of net benefits that they will produce from now until they retire compared to the value of the costs of training/credentialing which are incurred in the present. Because the benefits and costs to the immigrant and society are expected to accrue over time and at different times, we need to assess the present value of the stream of net benefits that the educated worker will produce from now until they retire. The Internal Rate of Return (IRR) to an investment is calculated as the interest rate that would be required to equate the present value of the incremental increases in earnings associated with the education level and/or credential expected over the remainder of the working life with the present value of the costs incurred in acquiring the education and/or credential. The IRR is interpreted as the real annual rate of return to the investment which is directly comparable to annualized rates of return to other investments like stocks, bonds or real estate.

Calculating the Social Rate of Return

To calculate the IRR, the age-earnings profiles associated with populations with different levels of education, or credential, are represented as the average earnings of individuals with a specified level of education, or credential, at each age. For *social rates of return*, the before tax incomes of a representative credential holder provide the benefit stream. The costs of credential recognition in the calculation are measures of the resources allocated towards acquiring the Canadian credential plus the foregone before tax earnings that the individual with the credential would have earned working in their next best alternative occupation.[2]

[2] Because average earnings for education levels are used, these rates of return are referred to as *Average Rates of Return* and they need to be distinguished from *Marginal Rates of Return* that would be based upon the increase in earnings from an education or credentialing associated with the last, or marginally qualified, individual admitted into the educational program.

Present Value and Internal Rates of Return

The present value of a dollar received in *t* years, is the amount of money that you would have to invest today at interest rate *r* to receive the one dollar in *t* years. This reflects that a dollar received in *t* years has a value of less than one dollar today due to the opportunity cost of money. If B_t and C_t are the benefits and costs accruing to the investment each year t, the net present value of an investment is a sum of the present value of net benefits from each year t over the remainder of the working life.

$$\boxed{NPV = \sum_{t=1}^{T} \frac{B_t - C_t}{(1+r)^{t-1}}}$$

The IRR compares the stream of benefits from investment in education to the stream of costs from the time that the investment begins to the time at which the degree holder is assumed to retire:

$$\text{IRR} = \text{r* such that } \sum_{t=1}^{T} \frac{B_t - C_t}{(1+r)^{t-1}} = 0$$

To do these calculations, a pre-tax age-earnings profile is generated for someone working with recognized credentials (for the *Bt* values) and for what a person can be expected to earn without accreditation (for the *Ct* values). Given the short history of the IAF program, we do not have information on the post-loan labour market outcomes in sufficient detail to calculate the IRR's using actual earnings information for IAF borrowers. The information from publically available data sources (like the Census or the Labour Force Survey) is also limited as earnings by age are available by level of education and broad occupation groups but not by specific credentials. We estimate average earnings by age and level of education for ages 32 to 65 with data from the public use file of the 2001 census data for Alberta.

Estimating the alternative earnings profile for immigrants lacking recognized credentials in the Canadian labour market requires that an assumption be made about the nature of work they do and the level of education required for that work. We use the age-earnings profile for high school graduates as this alternative. This essentially assumes that these immigrants are treated as having no post-secondary credentials in the Alberta labour market. Compared to the reported levels of unemployment and underemployment of IAF borrowers we are going to understate the earnings gain that would come with Canadian accreditation since the high school graduate earnings are higher. With the acquisition of the Canadian credential we assume that immigrants will earn the equivalent of a Canadian with a Bachelor's degree. In the cases of engineers, doctors, nurses, accountants etc…, this assumption likely understates the actual income gains for these professions. Note that both assumptions about pre and post-accreditation earnings will bias our calculated rates of return downward.

We assume an administrative cost on the loans of 100%. These costs likely lie between 50% and 100% of the loan principal but our choice of 100% implies that we are overestimating the costs of the investment.

Overall, our objective is to determine if the subsidy to IAF borrowers represents a good use of resources. Given our reliance on assumed labour market outcomes we risk being accused of generating high returns by assuming good outcomes. As a general strategy to defend against this concern we either choose pessimistic, or conservative, assumptions that will result in lower bound estimates for the IRR to the IAF loan program. In other words, the true social rates of return to the program are likely larger than we report.

A conservative scenario to estimate IRR

- The time horizon is 33 years (from age 32 to 65).
- Two types of uncertainty: a) the immigrant may be unable to obtain Canadian credential and b) the immigrant may be unable to find work in his/her area of expertise once accreditation is completed. In either case, the potential benefit of accreditation is reduced in proportion to the probability of successfully completing the program and finding work in the chosen area of expertise.
- Without a recognized Canadian credential, IAF borrowers would have earnings equivalent to those of a Canadian born worker with a high school education. With recognized credentials they would have earnings equivalent to those of Canadian born workers with a Bachelor's degree.
- Administrative costs are 100%

Results

Occupations have different rates of success, and different earnings profiles. To account for these differences and offer as complete a picture as possible of the value of the IAF program, we present specific IRR for loans invested in acquiring different types of Canadian accreditation in a variety of scenarios regarding the probability of success in completing the program and working in the desired occupation. Table 1 shows the IRR of a $5000 loan provided to a 32 year old immigrant borrower seeking to obtain Canadian accreditation. We consider that accreditation earnings are achieved with a range of probabilities, to reflect that either accreditation may fail, or that, even if successful, the immigrant may not be able to find a suitable job in his/her field. In the Table, the column referring to the Average for All Occupations assumes that any given IAF borrower would be able to earn income equivalent to a bachelor's degree holder in the Canadian labour market. The Health Occupations and Engineering columns assumes that the IAF borrower with recognized credentials could earn income equivalent to what is observed for Canadians reporting that they work in the health industry and the "professional, scientific and technical services industry".

Table 1. Real Annual Rates of Return from $5000 IAF Loan to a 32 Year Old Immigrant Borrower

Probability of Employment in Job Requiring Credential	*Average of all Occupations of IAF Borrowers*	*Nurses*	*Physicians*	*Engineers*
1.00	100% or more	100% or more	100% or more	100% or more
0.75	33%	100% or more	100% or more	100% or more
0.65	0%	58%	100% or more	32%

Overall these estimates of the social rate of return to IAF loans show that the social return on investments in accreditation are much higher than returns on conventional financial instruments and social rates of return calculated for investments in post-secondary education in Canada (Rathje and Emery 2002, Emery 2005). For the higher earning occupations in health and engineering the earnings gain is enormous compared to the loan delivery cost resulting in the high social rate of return. Even if only 2/3 of borrowers in these fields acquire the Canadian credential and work in their chosen field, the social rate of return is greater than 30% per year! Outside of these occupations, the level of success for borrowers obtaining work with the credential needs to be higher due to the lower earnings gain. At an employment probability of 0.7, the social rate of return to the IAF loan would be only 5% which marginally justifies the subsidy. In contrast, only one in three international medical graduate borrowers and one half of IAF borrowers who are seeking nursing credentials need to work in their field to justify the IAF program with a 5% rate of return.

It is early days yet to provide a full evaluation of whether the outcomes of the IAF program represent a good use of resources. A substantial amount of loans are relatively recent, so that borrowers have not had sufficient time to complete their education and accreditation programs and find work in their field. However, we use information from the IAF regarding immigrants that obtained the loan more than 18 months ago, hence ensuring that they had sufficient time to complete accreditation and find jobs in their fields of expertise, and found promising preliminary results. The overall rate of completion among this group is 95%, although much lower for the health occupations (60%) and engineer occupations (49%). The number of loan applicants that report working in their field of expertise (after 18 months or more into the program) is 64%, which is not far from the average minimum probability of success required in table 1 (0.7). Around 68% of health professionals and 65% of other professional occupations that completed the program are working in their field of expertise. According to Table 1 for these individuals the return on the loans is 32% (engineers), 58% (nurses) or even above 100% (physicians).

What can the IAF expect in terms of demand in upcoming years?

To answer this question, one would need to know how many immigrants come to Calgary or Edmonton with unrecognized credentials. Since this information is not available, an alternative is to compare the characteristics of the current loan recipients to the general population in Alberta. If the typical loan applicant is representative of the overall immigrant population to Alberta, the IAF can expect a sustained demand for its loans, as long as immigration levels to Alberta remain unchanged.

A cursory comparison of the demographics of IAF borrowers and the overall recent immigrants to Alberta shows that IAF loan recipients are not representative of the overall immigrant population. Loan applicants are less likely to be women, less likely to be Asian and more likely to come from Africa, Latin America or the Middle East than recent Alberta immigrants overall. Further, they are also over-represented in the health occupations and among occupations in natural and applied sciences. The growth in Middle East and African immigration over recent years and the reduction in Asia and European migration, suggests a likely increase in the customer base for the IAF, as immigrants from these places are highly represented among current loan recipients. In terms of occupations, recent immigration growth is shrinking in most occupations in Edmonton (except for Social Sciences and Other occupations), which are a very small fraction of applicants. In Calgary, immigration growth is similarly shrinking in most occupations except for Engineers and Other occupations and is remaining constant in Health occupations. Since these are sizable fraction of current loan recipients, it is less likely that the Calgary demand for loans will be affected.

Predicting the future demand of IAF loans is difficult. One would need to know how many immigrants come to Alberta with unrecognized credentials and how many of those cannot access other services to help have their credentials recognized. Since this information is not available, an alternative is to compare the characteristics of the current loan recipients to the general population in Alberta in the hope of identifying immigration flows within occupational groups or source countries that are more likely to apply to IAF for funding. However, barring expected known immigration policies it is also difficult to anticipate such immigration flows. One can only predict future flows based on past trends. In addition, some groups may have low representation among IAF recipients because due to operating constraints, the IAF makes no specific effort to reach specific groups, such as women or Asian immigrants.

On average, 25% of recent immigrants with a Bachelor's degree or above are underemployed (Galarneau and Morissette, 2008). This means that between 2001 and 2006, approximately 7,600 recent immigrants in this category were underemployed during that period. This suggests an upper bound for IAF loans of approximately 1520 per year. Although the number is likely to overestimate the potential demand for IAF loans, since some underemployed immigrants will be able to reach full employment by other means, it is nevertheless far larger than the 124 loans approved in the last fiscal year.

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