

Saskatchewan Apprenticeship & Trade Certification Commission

**The Impact of Apprenticeship Training Tax Credits
in Saskatchewan**

**Approved by Board of Directors
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A Project to Research the Impact of Apprenticeship Training Tax Credits

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1. Introduction

For the past few years, all available labour market information has clearly indicated that we will be facing a skills shortage in most trades-related occupations¹. The first decade of this century has seen the first wave of “baby boomers” retiring at the same time as employment growth has been strong. For example, employment rose 17% in mining and 18% in construction², both trades-dominated occupations. In Saskatchewan, double digit growth in the construction and transportation sectors³ and continued investment in the resource sectors indicate a strong demand for tradespersons. The Province of Saskatchewan has made development of a skilled labour force a high priority on its list of social and economic objectives⁴. Each Department, Crown Corporation and agency of executive government has been tasked with identifying means to achieve the outcome of a skilled work force in the areas over which each has influence. The Saskatchewan Apprenticeship and Trade Certification Commission has been working with partners in the Department of Learning and at SIAST to help the Province reach this objective⁵. To better understand current and projected labour market indicators and the role of our industry partners in furthering the skill development agenda, the Commission has accessed research available through its national partners and has garnered feedback from its industry partners in the Province.

There are several factors that influence registration, program completion and certification in the apprenticeship system. We have set out to review specifically those factors which have discouraged employers from participating in the apprenticeship system and to present a possible solution for consideration by the Saskatchewan government.

Apprenticeship is a unique skills development and certification system. It is work-based, requiring a large investment by employers, and at the same time trains and certifies individuals to national industry standards. Journeyman certification is highly prized by employers and accepted at face value across the country. It proves an individual has met occupational, training and examination standards for a trade directly approved by industry, and that the individual has considerable experience in the workplace.

The apprenticeship system depends on employers to provide 80-85% of the training required by the apprentice. Without this employer commitment, an increased burden would be placed on technical training institutions and the public purse to provide the equivalent training. Employers have traditionally recognized the value of a broad-based education of their workers that may go beyond the immediate economic needs of the firm in question. However, this commitment to an increasingly risky training investment is being called into question. A competent worker certified to national or provincial standards is a very attractive recruiting target for competitors. At the same time, a worker certified to these standards enjoys mobility and consequent wage bargaining power. As the Commission moves to fulfill its mandate to provide a skilled and representative trades workforce for Saskatchewan, the participation of the industry partners in continuing to train to the selected standard is key to our efforts.

¹ APCO worldwide, *Promoting Skilled Trades & Apprenticeship Project: Phase I Report Summary*, Ottawa ON: 2004 January

² Statistics Canada, *Perspectives*, pp 58-59, Ottawa ON: 2005 Summer

³ Elliott, D. *SaskTrends Monitor*, page 6, Regina SK: 2005 March

⁴ Government of Saskatchewan, Executive Council, *News Release*, Regina SK: 2005 March 17

⁵ Government of Saskatchewan, Department of Learning, *Learning Sector Performance Plan 2004-2005, Objective 4.1*, Regina SK: 2005 May

Anecdotal evidence and national studies⁶ have indicated that there may be increasing resistance by employers to investing in trades training and certification to national industry standards (i.e. the apprenticeship model as the preferred method of employee development). This resistance is based on perceived up-front costs and the risk of poaching of trained and certified by other employers who do not invest in training. The number of apprenticeship registrations in Saskatchewan has not declined in recent years. This may seem to contradict the claim of increasing resistance by employers to signing up new apprentices. However, in Saskatchewan, there has been a significant increase in new apprenticeship trade designations in recent years, accounting for some new registrations. There has also been dedicated Aboriginal apprenticeship funding in place for several years, which has resulted in dramatic increases in the number of Aboriginal apprentices registrations (now representing 14% of all apprentices in Saskatchewan). In addition, considering the strong employment growth in traditional apprenticeship sectors such as construction, transportation and mining, it can be argued that apprenticeship registrations should be increasing significantly.

Other jurisdictions have reviewed this issue and have brought forward various measures to address it. As the agency accountable for developing and certifying workers in the trades in Saskatchewan, the Commission has begun to consider ways and means to encourage both the registration of workers in a trade and the inculcation of a learning culture in industry. One of these ways is an equitable and transparent system of tax credits that would recognize the contribution that an employer makes through the apprenticeship system to development of a worker and to the capacity of the economy.

Saskatchewan's economy is producing strong job growth in the construction, mining, oil & gas, agriculture value-added and other sectors. Many of these jobs require trades and technology training at the non-university level. This demand is outstripping the institutional post-secondary training system's ability to supply skilled workers. Levering the private sector investment in plant, equipment and highly skilled workers to address the looming skills shortage is an attractive option.

Other voices have also been heard on the issue of a tax credit. The Canadian Tooling & Machining Association made a presentation to the House of Commons in November of 2002 outlining the merits of a Federal Tax Credit⁷. In recent months the ACRE Interim Recommendations⁸ have supported the establishment of an Apprentice Training Tax Credit. The Saskatchewan Construction Association and the Saskatchewan Automobile Dealers Association are also on record as supporting an apprentice training tax credit.⁹ A recent analysis prepared for Industry Canada suggests that financial incentives are more effectively directed to employers rather than apprentices. The rationale is that lowering the cost of investment in apprentices in a work-based training system will mitigate the risk associated with the investment and stimulate the hiring of apprentices.¹⁰

Of course, it is difficult to extract the effect of an Apprenticeship Training Tax Credit on the enrolment and participation rates given that other factors such as manufacturing or construction conditions can play a major role. However, the clearest way to measure the impact of the tax credit in meeting the objectives of engaging employers would be an increase in registrations and completions in the system. Given stable economic conditions over the first 2 years after implementation, a suggested minimum increase in these parameters is 12.5%. Typically, it takes 4 – 5 years to complete an apprenticeship, so

⁶ Canadian Apprenticeship Forum, *Assessing and Completing Apprenticeship Training in Canada: Perceptions of Barriers*, Ottawa, ON: 2004 January

⁷ Canadian Tooling & Machining Association, *Making a Case for Apprenticeship Training tax Credits*, presentation to the House of Commons Standing Committee on Finance, Toronto ON: 2002 November 06

⁸ Action Committee on the Rural Economy (ACRE) *Phase II Interim Recommendations*, Regina SK: 2004 November

⁹ Correspondence on file with the Saskatchewan Apprenticeship and Trade Certification Commission.

¹⁰ Sharpe, A. and J. Gibson (Centre for the Study of Living Standards) *The Apprenticeship System in Canada: Trends and Issues*, report prepared for the Micro-economic Policy Analysis Branch, Industry Canada, Ottawa ON: 2005 March

the expected increase in the certification of highly skilled workers would be achieved within that time frame.

This research project and report is expected to provide the Commission Board, the Department of Learning and the Department of Finance (and through their process, Treasury Board) with the data essential to making an informed judgment on the merits of a tax credit proposal. The Commission is prepared to lead the research and promote such a tax credit if indeed the proposal has merit. The research discusses briefly alternatives that may address the issue in a different way.

The reader should note that no attempt is made to quantify social benefits of any increase in participation in apprenticeship. It indeed may be that goals such as economic development due to reduction in underemployment and the increase in Apprentice opportunities for Aboriginal youth are well-served, but the linkage is not addressed in this report..

2. Determining the Cost to an Employer of Training an Apprentice

2.1 Methodology

This research begins with the assumption that there is a cost to training an apprentice that declines as the apprentice gains experience. This is consistent with both research findings and anecdotal evidence. We had extracted from studies done in Saskatchewan and other jurisdictions (e.g. the Canadian Apprenticeship Forum) the cost of training at each level. We then developed a spreadsheet (see Appendix 'A') that allows us to vary these parameters according to local input.

As the next step, we asked the Innovations Committee of the Board for input concerning the alignment of our assumptions with field practice. After adjusting the factors, we surveyed several employers from a cross section of sectors to determine the validity of the cost estimates.

We initiated the selection process for employers to be surveyed by randomly selecting every 10th employer on our roster. We then re-sorted these 500+ employers by indentured trade and selected every 5th name within a sector (the 4 sectors recognized by the Commission are construction, production & maintenance, motive power and agriculture, tourism & service). We generated the telephone numbers for employer and contacted them to check if they wished to be included in the survey. In the rare cases - fewer than 5 - where the employer chose not to participate we selected the next employer in the sector. We offered the employer a choice of completing the survey on-line, by fax or by mail. On-line completion was the most popular option with only 5 selecting faxed surveys and 2 selecting mail surveys.

We emphasize that we have allowed for the contribution of an Apprentice at any level to employer's capacity and to billable hours, i.e. there will be offsetting gains for some selected portion of the apprentice's hours.

Appendix 'B' is a copy of the questionnaire used to gather the data.

2.2 Survey Results

The data generated by the survey returns did not deviate to any great degree from our earlier assumptions concerning time spent training, mentoring or supervising, nor did the respondent's

estimate of the value generated by an Apprentice in each Level. We used the consensus values for our calculations in the spreadsheet in Appendix 'A'. The reader is welcome to use the spreadsheet to adjust factors in keeping with the experience at a particular firm.

Using the assumptions and salaries as indicated in Appendix 'A', we find that a break-even point is achieved somewhere during the third year of Apprenticeship (i.e. the employer receives a net benefit from the Apprentice from this point on). However, even if the Apprentice remains with this employer for the full 4 years in this example, the net cost to the employer is over \$40 000.

We captured some valuable qualitative data from the survey, especially in response to Questions 12 and 13. Despite all the effort required to take an apprentice through, in many cases, 4 years of training, the majority of employers felt that the process was a good investment and was part of their commitment to a skilled workforce. However, a significant minority indicated that while the system worked well, losing a qualified employee to a competitor – especially if that competitor was a Crown corporation or government department – was an irritant, even a significant disincentive to investing in apprenticeship training and certification. There also were suggestions for improving the commitment of apprentice to employer and some general comments about inequity in the system.

3. The Cost of an Apprenticeship Training Tax Credit

3.1 Underlying Assumptions

It is difficult to ascertain what a reasonable level would be for a Training Tax Credit. However, we can use the experience of other jurisdictions as a guideline to determine the impact on the Province's Treasury. To this end, we have examined the experience of Ontario in which a \$5 000 per Apprentice tax credit was implemented in 2003¹¹. While Ontario chose to allow a maximum tax credit of \$5000 for each of the first 3 Levels of apprenticeship, we looked at other scenarios and would entertain arguments for several others if necessary. We considered several possible tax credit scenarios – equal credit for each of the levels, a graduated credit where a larger credit was available in earlier levels and one which recognized the need to encourage improvement in completion / retention rates. This last one was chosen with equal credits in levels 1 and 2 and a “completion of certification” credit in which a firm that had employed the apprentice in Level 1 or 2 would receive the tax credit if the worker received her/his certificate while still employed at the firm. (It is important to note that this model proposes that the tax credit is payable to the employer when the apprentice advances from Level 1 to Level 2 and from Level 2 to Level 3, based on the Commission's issuance of a Year Card.) Of course, selection of other values for the tax credit amount would result in some multiple or fraction of these amounts.

For these calculations we used the following parameters based on the latest information available:

- a. There are 39 000 tax-filing enterprises in Saskatchewan
- b. Of those, 18 000 or about half pay provincial taxes averaging \$18 000 or so
- c. Excluding joint training committees, Crown corporations, unions and non-profit organizations, about 1700 employers engage about 4000 apprentices

¹¹ Government of Ontario, “Ontario Government Supports Growth in Skilled Trades”, news release, Toronto ON: 2002 November 23

- d. Using an upper bound based on the literature we assume about 60% or about 1000 of these firms qualify for and apply for the tax credit
- e. Based on the following table from our records, we used 2.5 Apprentices per firm in our calculations

No of Indentured Employees	Number of Employers
1 Employee	1040
2 – 5 Employees	549
6 – 20 Employees	101
> 20 Employees	13

- f. Based on historical data, we expect that 34% of the apprentices are at Level 1 and 23% at each of Levels 2-4
- g. Based on historical data, we assumed 75% of apprentices progress between levels in a given year.
- h. We ran several scenarios for cost of the tax credit to the Treasury, one based on current numbers of apprentices and employers, one based on a 5% increase arising from the tax credit and a third based on a 20% increase. These last 2 scenarios represent the range of internal estimates we generated. We then used the mid-range consensus for costing the balance of the estimates.
- i. We ignored the impact of an equivalent Federal Tax Credit.

3.2 Tax Expenditures

The following table represents the gross cost to the Province’s Treasury of each scenario.

Scenario	# Apprentices	# Qualified Employers*	Level 1	Level 2	Receiving Certification**	Cost of \$5 000 tax credit***
Current	5400	1000	850	575	575	\$7 500 000
5% increase	5670	1050	893	604	604	\$7 875 000
20% increase	6480	1200	1020	690	690	\$9 000 000
Consensus	6175	1125	956	647	647	\$8 437 500

* Some employers source trades labour through union hiring halls, in which case the contract of apprenticeship is held by a joint training committee to facilitate the mobility of apprentices. Using the Ontario model, these employers could qualify for the tax credit on the basis of the number of days they employed the apprentice.

** Although a greater number receive certification in any given year, many of these new journeypersons have come through the trade experience route or are employed by tax-exempt organizations and therefore do not qualify under our assumptions. Note: A number of proficiency certifications are issued by the Commission and are considered equivalent to journeyperson certification. In these cases (e.g. Motor Vehicle Refinisher and Scaffolder), apprentices are registered in a sub-trade, complete on-the-job training and technical training and are certified at the highest level

in the sub-trade. These certifications represent about 5% of the journey-level certifications issued by the Commission and are included in the above estimates.

*** Assumes only 75% of apprentices advance between levels annually and 75% of journey person certifications occur with eligible employers

The total estimated gross cost to the Provincial Treasury arising from an apprentice training tax credit is \$8.44 million.

In Section 4 we have identified offsetting savings that would make the net cost to the Treasury somewhat less.

3.3 Commission Costs

Based on the consensus scenario above, it is estimated that implementing an apprentice training tax credit (ATCC) will result in a 12.5% increase in apprenticeship registrations. The increase in the registration rate of workers in the non-compulsory trades is likely as employers perceive mitigation of the costs of training. An increase of this magnitude will require additional resources to be deployed by the Commission.

The additional costs are attributable to two factors. First, there will be an increased administrative workload for the Apprenticeship and Trade Certification Commission as result of the increased number of apprentices and participating employers. Allowing for commensurate additional personnel to process registrations, manage the examination and certification process and service the additional employers and apprentices, we estimate the extra personnel at 1.75 field FTE's and 1.5 office FTE's. Based on current salaries and burden, the Commission could incur \$180 000 to \$200 000 annually in additional administrative costs.

It is expected that there will be a significant one-time cost for changes to the information technology system (OCSP) which the Commission shares with Learning and other post-secondary training system partners. These changes would be required to support system-based recordkeeping and issuing documentation for tax receipts. No estimate of the IT system change cost is available at this time.

Second, there will be an increase in training spaces required for the technical training component, as employers register experienced tradespersons in the system and as they enroll new employees in the apprenticeship program. Using the consensus estimate of an increase in apprenticeship registration, the Commission would schedule an additional 580 apprentices (775 additional apprentices at a participation rate of 75%) in technical training annually. Typically, at 40 training days per apprentice this will require the annual purchase of an additional 23 200 training days at a training institution. Given an average cost of \$60 per training day, an additional \$1.4M would be required by the Commission for this contracted training

The total estimated additional cost to the Commission related to an apprentice training tax credit is \$1.6 million, plus an undetermined one-time IT system change cost.

4. Arguments for an Apprenticeship Training Tax Credit

There are limited empirical data on which to advance cogent arguments for a tax credit approach to encouraging apprenticeship investments. Most of the literature argues for expected outcomes but we could not find a study to substantiate these arguments. It is difficult to ascertain what would be a specific increase in economic activity arising from institution of a tax credit.

However, we can use the General Equilibrium model¹² to determine that a \$1 reduction in corporate income tax results in a \$0.4 gain in general economic well-being. This benefit stems from the additional capital accumulation resulting from the tax cut. *It's interesting to note that the increase in general economic well-being resulting from a \$1 corporate tax cut is 25% higher than that resulting from the equivalent of \$1 personal income tax reduction.* Assuming the tax credit is restricted to Saskatchewan firms, we can calculate the foregone tax revenue as costing our treasury 60¢ for every dollar of tax expenditure.

Stimulating registration in the work-based training system levers the capacity (plant, equipment, skilled tradespersons) in place in the private sector to increase the overall capacity of the post-secondary training system. While there is a cost to the provincial treasury of an apprenticeship training tax credit on one side of the system, there is a potentially greater saving to the province on the other. An increase in work-based learning replaces the demand on the technical colleges to provide pre-employment programming. In this scenario, a tax credit can alleviate the pressure on the institutional post-secondary training system both by diverting some pre-employment training and by addressing the long wait lists for some pre-employment trades training courses. This would not result in any loss of activity in the institutional training system but rather a conversion of the activity from pre-employment to apprenticeship training.

If we assume that at least half of the additional training spaces in the apprenticeship system are diverted from the pre-employment stream, we have removed about 380 students from SIAST or a similar institution. We have included as Appendix 'C' a calculation of the difference in cost to the Treasury of the two options and based on a \$10 000 saving per learner estimate the net gain at \$2.28M. For most trades, there is only a Level 1 exemption so it could be argued that the saving is even greater than this

In a broader sense, we can set forth several qualitative benefits that would arise from the Apprenticeship Training Tax Credit (ATTC):

- more equitable distribution of training costs among employers ("poachers" would not receive the credit)
- increase in certified workers as employers would have less incentive to delay or deny apprenticeship registration
- increase in number of certified and therefore more mobile workers
- greater value / bargaining power of certified workers, meaning some of the value of the ATTC would also accrue to the employee
- better utilization of resources at SIAST and relief of pressure on wait lists

Probably more importantly for the long term benefit of our economy, the ATTC would be an important tool in preventing erosion of trades training into a narrow series of employer-specific competencies.

¹² Government of Canada "Taxation and Economic Efficiency: Results from an General Equilibrium Model" in *Tax Expenditures and Evaluations 2004*, Ottawa ON: 2004

5. Cautionary Notes on an Apprenticeship Training Tax Credit

While training tax credits have been touted as the best way to recognize an employer's contribution to training an apprentice, tax credits in general have some negative implications for the Province. Of course the cost to the Provincial Treasury is a factor, but the net cost (after accounting for an increase in capital investment and subsequent economic activity) is difficult to project.

Another factor is the impact tax credits have on other sectors – any government implementing targeted tax relief will be seen as “picking winners”. This can result in an increasing clamour from other sectors of the economy for similar treatment. The main argument to support the narrow application of the ATTC is that these employers are subject to regulations that require them to provide training to a specific standard as determined by the Commission. Yet these workers can transfer to other employers at a whim. This is different from, say, retail or clerical jobs that adhere to the employer's standards and also different from diploma or degree graduates who have invested a considerable amount of their own resources (and the public's) in preparing for the workforce.

There is also the danger of alienating those employers who used their own resources to train workers to a high standard in an area (e.g. sales or publishing) in which the Commission does not designate the trade. However, the Commission has no role in reviewing or certifying those standards. At the same time, it would be necessary to review the actual investment in training that some employers in the apprenticeship system actually make – as Ontario has done, it might be necessary to exclude sectors in which reliance is placed on substantial employee investment in training.

Workers may also feel their contribution (lower pay in early years, paying tuition and living costs for technical training periods, etc.) is considered less important in the eyes of government than is the employer's contribution to skill development. However, it could be argued that the worker gains lifelong benefit from his/her sacrifice while the employer has only a temporary gain.

From an administrative perspective, we have to allow for some sort of monitoring link between SATCC and the Department of Finance and for the issuing of clearances by SATCC.

A cautionary note on refundable tax credits – if an employer receives a sum for each apprentice absent the condition of being a tax-payer, the amount would likely be considered income from the Federal government's perspective and would be taxed in the next tax-filing period. We have assumed that the ATTC could be structured as a refundable tax credit. If the Federal government were to implement a similar measure, the potential transfer of provincial tax expenditures to the Federal Treasury would be eliminated. The Federal Government, through HRSDC's participation in the Forum of Labour Market Ministers, is investigating an apprentice training tax credit as a public policy option.

6. Alternatives to an Apprenticeship Training Tax Credit

Many of the alternatives to a tax credit require more intensive intervention by the Saskatchewan government. Of course the status quo is always an option, albeit a questionable one that does little to address looming trade shortages or encourage employers to take on entry-level tradespeople.

6.1 A training levy

France has had a training levy on all payroll (a nominal amount, submitted in the same way that a payroll tax or the employers' share of CPP is currently submitted).

This levy has the advantage of spreading the costs across all employers whether employees are professionals, tradespeople or unskilled labour. The disadvantage is the additional cost of collection (not all of it is returned as a reward for training employees) and the additional work for the employer in calculating and submitting the levy. Politically, it would probably be viewed with the same distaste with which businesses view any payroll tax.

6.2 A training bond

Some employers have suggested we look at ways to keep a worker tied to the employer for some time after journey status is achieved. One suggestion is a "bond" or credit that accumulates while an employee remains in the trade in Saskatchewan and as long as the employer continues to offer employment in that trade. At some point, say 12 months after journey status is achieved, the employer and employee can apply to be reimbursed for the value of the bond.

The advantage of this idea is that it divides credit between the 2 parties and is an incentive to remain in the workforce. The disadvantage is the difficulty of tracking the indentured employees and the probability that disputes may arise over layoff / dismissal claims. Without a major investment in tracking mechanisms, the success of the bond option may not be measurable. A civil contract between an employer and apprentice would also address the issue of training commitment/investment without the intervention of the tax system or executive government.

6.3 Increased pre-employment spaces at technical training institutions

From the employer's perspective, the pre-employment option may be a desirable solution. Candidates and the provincial taxpayer invest time, energy and money into ensuring that a supply of workers with some fundamental skills is available. As we point out in our comparison of costs, this solution shifts a considerable portion of the training costs from the employer to the tax-payer.

An advantage of the pre-employment option is that core skills are engendered and certified for all hires and that a natural selection process deletes those candidates without a genuine interest in the field. The main disadvantage is the large capital and human resource investments that, once in place, are difficult and costly to alter or delete. Another major disadvantage is the slow response time in building the necessary infrastructure to provide additional training spaces. Also, retention rates for graduates in the occupation are low in selected trades (a 1980's study showed that fewer than 20% of graduates of pre-employment programs actually progressed to journey status in the trade). In addition, some employers prefer to select entry-level workers and train them on-the-job from the beginning of their learning.

6.4 Encouraging more immigrant workers to come to Saskatchewan

In the industrial boom of the 1970's workers for the utility, potash and uranium industries were often recruited from other countries. Skilled machinists, millwrights and structural workers were available and were attracted to the growing economy of the Province. However, as economic prospects in other nations have brightened over the past 2 decades, and as competition for skilled workers becomes more intense, recruitment has been more difficult (collapse of economies in the former Soviet bloc provided

a fresh source of recruits in the 1990's and in this century). The Province's Immigrant Nominee program has recently been instituted to help identify and attract immigrant workers for high demand occupations. Given that immigration is a federal government responsibility, the Province is limited in the scope of the services it can provide.

An advantage of increased immigration would be that it is a low-cost solution as workers are already trained in their trade. Barriers include having to collaborate with the federal bureaucracy (thus slowing response time), ensuring validity of certification and providing an inviting atmosphere. As we have seen from numerous studies, immigrants tend to gravitate to the larger centres – the so-called “MTV problem” – and are most comfortable where a critical mass of their fellow expatriates reside. In any event, competition for workers is often fierce and comes both from other jurisdictions within Canada and from other nations such as Australia and New Zealand that can offer climates less harsh than ours. This option also ignores the aspirations of the growing young Aboriginal population which will be seeking opportunities in Saskatchewan's labour market. Some ethical concerns have been raised regarding the developed world's “consumption” of the developing world's most highly skilled human resources.

6.5 Hiring workers from other jurisdictions

Saskatchewan, by geographic and economic accident, has as its more westerly neighbours 2 Provinces that have experienced strong economic growth over the past half-century. While we can sometimes offer ex-residents many reasons to return to the Province of their birth, attracting immigration from, say, the Maritime Provinces would be in direct competition with the economic powerhouses of British Columbia and Alberta. And demand for workers in those 2 jurisdictions is expected to remain strong.¹³

If it were feasible, the advantage of this option would be the inter-provincially certified trades people who would fill the needs with no additional cost to the tax-payer. The disadvantage, outside of any questionable aspects of this approach within a federal state, is the increase in costs to the employers and ultimately the consumer in attempting to compete with other jurisdictions.

6.6 Extending typical retirement horizons

According to SaskTrends Monitor¹⁴ Saskatchewan in the past 3 years has seen an increase in the number of workers aged 55 or older. This seems to have been in response to increased construction activity and improved wages. Extending the age of legislated retirement, as has been recently done in other jurisdictions, may keep a pool of workers available to industry.

The advantage of such an option would be that it comes at no cost to the Provincial Treasury and lowers the cost of training or the employer. Resistance to a change in retirement would come from workers themselves and their representative organizations who would likely view this action as a regressive step in the struggle for better working conditions. It's also unlikely to attract any of those workers who have substantial private or employer-supported retirement income available to them.

¹³ Construction Sector Council *Construction Looking Forward: Labour Requirements for Canada and the Provinces from 2005 to 2013 - National Summary*, Ottawa ON: 2005

¹⁴ Elliott, D. *SaskTrends Monitor*, page 10, Regina SK: 2005 May

6.7 Using a grant rather than a tax credit

The research did not unearth any examples of a grant being used to encourage participation in apprenticeship. While a grant may provide more options in terms of targeting a select group of employers, it is not without controversy. Philosophically, a grant to selected employers is more problematic than using a tax-filing system to off-set training investments. It may also require an arbitrary exclusion of Crown corporations or other tax-exempt employers in order to avoid misdirecting the credit to employers who do not qualify under our assumptions. A grant has no advantage over the tax credit approach in terms of cost or political optics.

7. **Conclusion**

Organizations supporting a tax credit have not provided any robust economic analysis of the measure. This can be understood in light of the limited data available and the fact that only within the past 2 years has an Apprenticeship Training Tax credit been implemented in any jurisdiction in Canada. Given our limited resources, we did not attempt any rigorous analysis of longer-term effects. However, we do have general findings which we summarize here.

7.1 Tax credits are a valid means of recognizing employer contributions to training an apprentice.

7.2 Tax credits encourage the employer to invest in training an apprentice to a certified standard, thus reducing pressure on the capacity of post-secondary institutions to provide pre-employment training.

7.3 Tax credits entail both financial cost and political considerations from the perspective of the government.

7.4 Alternatives to a tax credit exist, but none are without their own limitations.

7.5 Much of the advantage of a tax credit targeted at small and medium size enterprises will be lost if the tax credit is non-refundable.

7.6 The Federal government, which has identified an apprenticeship training tax credit as a viable public policy option, should be encouraged to implement an apprenticeship training tax credit in order to avoid the transfer of provincial tax expenditures to the federal treasury.

Recommendation: That the SATCC recommend the implementation of an apprentice training tax credit in Saskatchewan to the appropriate provincial authorities.

**Appendix A:
Cost of a 4-year Apprenticeship**

Year of Apprenticeship		Y1	Y2	Y3	Y4
Journey hourly rate	21.33				
Burden	0.5				
Net cost of Journeyperson	32.00				
Number of hours worked per year	2000				
Portion of time spent training		0.26	0.21	0.14	0.09
Total hours spent training		520	420	280	180
Journeyperson cost to train		16637	13438	8959	5759
Chargeable rate for Journeyperson	53.33				
Available chargeable time		1480	1580	1720	1820
Actual chargeable time (80%)		1184	1264	1376	1456
Potential profit lost on chargeable time (\$)		8873	7167	4778	3072
Apprentice wages		8.53	12.80	17.06	19.20
Apprentice burden	0.5				
Administration burden / h	2.00				
Portion of time spent training		0.38	0.34	0.22	0.16
Total hours spent training		760	680	440	320
Apprentice cost to train (\$)		12543	16154	13644	11083
Available chargeable time		1240	1320	1560	1680
Actual chargeable time (80%)		992	1056	1248	1344
Profit earned on chargeable hours (\$)		7194	11487	18101	21931
Costs associated with school time (\$)		200	200	200	200
Net annual training cost (\$)		31060	25472	9479	-1817
Total cost to employer of a 4-year Apprenticeship (\$)					64194
Income tax recovered on loss @ rate shown	25%				16048
Net cost to employer (\$)					48145

4. We now ask you to estimate the % of time an apprentice spends training at each of the levels. (if the Trade in question has fewer levels, ignore the extra columns)

Trade	% of non-productive time (training, orientation, etc)			
	Level 1	Level 2	Level 3	Level 4

5. We now ask you to estimate the % of time a journeyperson spends training the apprentice at each of the levels- i.e. what % of time is the journeyperson's ability to function at maximum impaired by the need to mentor/observe the apprentice?

Trade	% of non-productive time (training, observing, etc)			
	Level 1	Level 2	Level 3	Level 4

6. We now ask you to estimate the % of time a supervisor spends mentoring the apprentice or evaluating his/her progress at each of the levels.

All Trades (average time spent)	% of non-productive time (orientation, evaluation, review, etc)			
	Level 1	Level 2	Level 3	Level 4

7. To help us determine the cost to an employer of maintaining an indentured worker for the period of apprenticeship, we have assumed a rate at each level relative to the journeyperson rate. If you feel that these estimates are not consistent with experience at your work place, please enter your own numbers (average for all Trades).

All Trades	% of journeyperson rate			
	Level 1	Level 2	Level 3	Level 4
Our estimate (all)	40%	60%	80%	90%
Your actual (average)				

8. We would also need an estimate of the average hourly wage paid to journeypersons and supervisors (and others who you believe encounter extra costs due to the presence of an apprentice).

	Journey person	Supervisor	Other (specify)	Other (specify)
All Trades (average wage paid)				

9. We will assume that in the absence of any apprentices, your journeypersons will have an 80% productivity level – i.e. you can bill 80% of the hours to a client or you require only 20% of the journeyperson’s time for overhead (paperwork, meetings, etc) tasks. If you have another number in mind, please enter it in the space provided.

our estimate of productive time 80% your estimate of productive time _____

10. To help us determine the opportunity cost of the journeyperson’s time, we will assume that your loaded labour cost (your cost for CPP, EI, WCB, PPE, etc) for the journeyperson is 1.5x the hourly wage rate and that you can bill hours to a client of 2x the hourly wage rate (or assume a n equivalent value-added component). [This means you would see a 33% of margin on billable hours only to cover administration, depreciation interest and other overhead costs.]

If you feel that these estimates are more than 25% out of line with your experience, please enter more accurate figures in the space provided.

our estimate of loaded labour cost 1.5x your estimate of loaded labour cost _____

our estimate of chargeout rates 2.0x your estimate of chargeout rates _____

11. We recognize that an apprentice adds increasing value as he/she become more adept at the work done. Therefore there is a profit component to at least some of the hours he/she works for you. If you prefer, we can apply the same factors shown in (9) and (10) above to the apprentice’s time to estimate recoverable labour costs. That is, we assume 80% of non-training time is productive time, just as in the case of the journeyperson and that loaded labour costs are 1.5x and chargeout rates are 2.0x. If these values are inconsistent with your experience, please insert your own values.

All Trades	% of non-training time that the apprentice does productive work			
	Level 1	Level 2	Level 3	Level 4
Our estimate (all)	80%	80%	80%	80%
Your estimate (average)				

12. When all is said and done, which of the following statements best represents your view of the apprenticeship process? (check only one or rank these from 1 [closest to my thinking] to n)

- It's just a good investment and I get the employee that I want
- It's part of my company's role to properly prepare the apprentice for the Trade
- It's just a cost of doing business
- If we didn't do it there would be complaints from employees or hassles with the union
- I like the system but I get tired of losing people I invested a lot of time and money in
- We would prefer getting pre-employment graduates of SIAST or another institution
- I think solely in-house training would be better for us
- I don't think we'll ever take on another apprentice

13. Is there anything else you'd like to say?

Appendix C: Comparing the Cost of a 4-year Apprenticeship to a Pre-Employment Program

Apprentice in green; pre-employment in red

Year of Apprenticeship	Y1	Y2	Y3	Y4
1. Machinist 4-year apprenticeship				
Cost of apprenticeship to SATCC	2480	2480	2480	1860
Cost borne by SIAST / the public - full cost recovery	0	0	0	0
Cost of School to Apprentice (tuition)	240	240	240	180
Cost of School to Apprentice (books)	280	110	95	60
Cost of apprenticeship to Employer (registering contract)	150			
Total cost for apprenticeship	3150	2830	2815	2100
Hours of Trade time available	1760	1760	1760	1820
Hours of attendance at school	240	240	240	180
2. Machinist 34-week pre-employment plus Level 3&4 apprenticeship				
Cost of apprenticeship to SATCC	0	0	2480	1860
Cost borne by SIAST / the public - assumes tuition is 20% of costs*	15 000	0	0	0
Cost of School to the learner (tuition)	3000	0	240	180
Cost of School to the learner (books)	520	0	95	60
Cost of apprenticeship to Employer (registering contract)		150		
Total cost for pre-employment / apprenticeship	18 520	150	2815	2100
Hours of Trade time available (assumes 14 weeks of work in year 1)	560	2000	1760	1820
Hours of attendance at school	1020	0	240	180
Total cost of 4-year Apprenticeship				10 895
Cost to public purse			9 300	
Total cost of Pre-employment plus 2 years of Apprenticeship				23 585
Cost to public purse			19 340	
Total time unavailable for work in a 4-year Apprenticeship				900
Total time unavailable for work in Pre-employment plus 2 years of Apprenticeship				1440
Total productive work hours in a 4-year Apprenticeship				7100
Total productive work hours in Pre-employment plus 2 years of Apprenticeship				6140

* In 1999, tuition covered about 10% of instructional costs at SIAST. In the SIAST 2004-2009 Business Plan on page 58 (Table 4.6.7) we see that tuition currently covers about 13% of instructional costs in the Industrial Division for core programming.