



A STUDY OF WORKER SHORTAGES & SURPLUSES IN NOVA SCOTIA

Findings Report

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1.0 Objectives and Introduction

1.1 Objective from the Terms of Reference

The objective of this study as identified in the Terms of Reference is:

“... to determine the balance between demand and supply for workers in designated occupations in the residential construction industry. The analysis will break occupations down by skill type and level, training and accreditations, and other attributes required by employers. The balance of demand and supply will be determined for sub-categories of occupations defined by these breakdowns. The study also will identify and analyze reasons for demand/supply imbalances.”

Plumbers and framers were chosen as the designated occupations. Plumbers and framers do not work exclusively in residential construction. Their work encompasses a number of industry sectors and demand and supply conditions in all of these sectors are examined in the study.

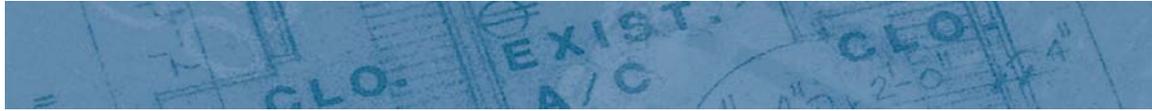
1.2 The Debate about Labour Shortages in the Construction Trades

An April 2003 report by the Canadian Federation of Independent Business¹ presented results from a survey of labour availability on the national level. It concluded that roughly 50% of businesses in Canada were concerned with shortages of qualified labour and that this concern was even more serious in the construction industry where 66% of businesses were concerned with shortages. The Canadian Federation of Independent Business reported similar results for Nova Scotia where 61% of businesses in the construction industry surveyed were concerned with shortages of qualified workers – more than any other industry.

The employer survey completed by PRAXIS in 2002 supports the findings of the Canadian Federation of Independent Business. The PRAXIS survey asked employers of plumbers and framers in Nova Scotia to rate the seriousness of various problems facing their industry. Forty percent of the employers gave shortages of skilled trades workers high or very high ratings as problems facing their businesses.² These

¹ “Labour Pains – Results of CFIB Surveys on Labour Availability”, Andreea Dulipovici, Research Analyst, Canadian Federation of Independent Business, April 2003, pp 1-2.

² A high rating is 4 and a very high rating is 5 on a scale of 1 to 5.



ratings were second only to the underground economy and were dramatically higher than other problems facing businesses including access to financing, keeping up with new technologies and shortages of managers and supervisors.

National and provincial survey results provide compelling evidence that employers in the construction industry feel that shortages of qualified trades workers is a significant problem. The survey results are reinforced by media reports that document both the existence of labour shortages in the construction trades and their negative impact on the economy. For example, the July 29, 2003 edition of the Chronicle Herald included a story entitled “So few people and so much work”. The story reports on an interview with a construction manager for a residential building company and highlights the extent and problems associated with trades labour shortages.

“... the construction manager for Integrity Homes hasn’t been able to find a crew of framers to work on the buildings. ... “Now, because of the problems that come with shortages of skilled labour, I allow 4.5 months in our contracts’”³

Despite widespread evidence that labour shortages in the trades are significant, and perhaps even severe, some key indicators provide evidence that the trades labour market is in a surplus situation. For example, the Labour Force Survey produced by Statistics Canada shows that the average monthly unemployment rate for construction trades in Nova Scotia in 2003 was 16.8% – almost double the rate of 9.3% for all occupations in Nova Scotia. Research completed by PRAXIS for this project indicates that approximately one-third plumbers and 40% of carpenters in Nova Scotia claim Employment Insurance (EI) on an annual basis.⁴ The EI data on plumbers and carpenters also shows that the number of EI claimants in both occupations increased from 1998 to 2002 despite significant growth in the construction industry.

We are left with a paradox – businesses in the construction industry report a relatively high degree of shortages of trades workers but labour market indicators indicate that construction trades experience a labour surplus compared to other occupations. The result is confusion about the central question posed

³ Chronicle Herald, July 29, 2003, P. C1.

⁴ See two companion reports produced for this project: the “Nova Scotia Plumbers EI Beneficiary Survey”, p. 28 and the “Nova Scotia Carpenters EI Beneficiary Survey”, p. 29.



in the Terms of Reference for this report – is the demand for labour in the construction trades greater or less than the supply of trades workers?

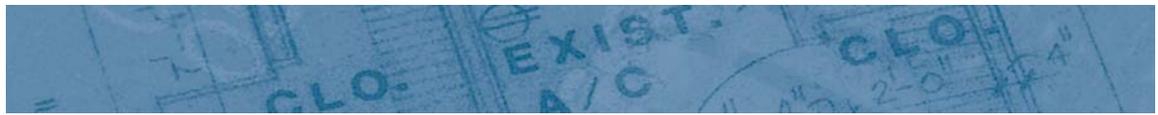
This report attempts to answer this question for framers and plumbers in Nova Scotia. The report will show that the answer for plumbers and framers also applies in large part to other construction trades. The report utilizes a number of research methods to develop an answer to the question posed above:

- ▲ The use of basic labour market economic concepts;
- ▲ Information produced by a survey of employers of framers and plumbers in Nova Scotia and surveys of EI claimants in Nova Scotia who indicated that they were plumbers or carpenters;
- ▲ Labour market data produced by Statistics Canada in the Census, the Labour Force Survey and in specialized databases such as that for apprenticeship in Canada; and
- ▲ Related reports and publications.

1.3 Overview of the Report

Section 2 of the report provides a brief presentation of some basic economic concepts related to the demand and supply of labour and the issue of labour shortages. It provides a definition of the term “labour shortages” and identifies indicators of labour shortages. In so doing, it provides a framework for addressing the complex issue of whether there are labour shortages for construction trades – notably for plumbers and framers in Nova Scotia.

Section 3 examines data on wages and wage changes in order to reach conclusions on the existence of labour shortages for plumbers and framers and for construction trades as a whole. Section 4 examines data on unemployment and job vacancies for the same purpose. Section 5 examines two important causes of the recruitment and hiring problems of employers in the construction industry and draws conclusions about whether these problems are labour shortages as defined in Section 2 of the study. Section 6 examines the role of rigidities in labour supply in contributing to shortages of plumbers and framers. Section 7 examines policies that could redress the recruitment and hiring problems identified in Sections 5 and 6. Section 8 discusses follow-up research that would improve the findings in this report.



2.0 The Economics of Labour Shortages

Before conclusions can be drawn about the existence of labour shortages, a definition of the concept must be developed. The definition of labour shortages used in the PRAXIS analysis is that used by both Gunderson (January, 2001) and Meltz (1982):

“A shortage of labour occurs when the demand for labour exceeds the supply of labour at the going wage rate.”⁵

Wages play an important role in alleviating labour shortages. This role in the construction industry was described as follows by Morley Gunderson.

“Higher wages can induce an increase in all dimensions of labour supply: increased employment, longer hours and even more work effort and intensity. In the long run, they can encourage more people to enter the trade, to move, to upgrade their skills and even postpone retirement or return from retirement. Higher wages can also induce a decrease in demand for the higher-priced skilled labour that is in short supply, by encouraging employers to substitute other inputs (substitution effect) by using, for example, other workers, prefabricated products or subcontracting to self-employed independent operators. Contractors may also reduce their output (output effect) because of the higher wage costs, thereby employing less of the skill labour in short supply and less of all other inputs. ... Both the increased labour supply and the reduced labour demand induced by the wage increase should serve to alleviate the labour shortage. This is the market response, where wages are flexible and allowed to ‘clear’ markets.”⁶

Wage changes act to alleviate temporary labour shortages that arise over time. Imperfections in the labour market may limit the ability of wage changes to alleviate labour shortages. Three imperfections that are important to this study are:

- ▲ Wages may not respond adequately to excess demand or supply. A well known reason why wages do not respond to demand and supply signals is the existence of unions.

⁵ See Noel M. Meltz, “Economic Analysis of Labour Shortages – The Case of Tool & Die Makers in Ontario”, Occupational Paper 15, Ontario Economic Council, 1982, Toronto, p. 10 and Morley Gunderson and MKG Associates, “Skill Shortages In The Residential Construction Industry”, Report to the Canada Mortgage and Housing Corporation, January, 2001, p. 20.

⁶ Gunderson, Op Cit, p. 20.



- ▲ The supply of labour may not respond to relatively high or low wages by entering or leaving the occupation in sufficient numbers. Rigidities and lags in the training system are one reason why the supply of skilled workers may not respond to wage changes.
- ▲ Job vacancies may exist that require the skills of individuals seeking jobs but the job seekers and businesses trying to recruit workers may not be able to find each other. The job matching process may be inhibited by limitations on labour market information available to both employers and job seekers.

These imperfections in the labour market can result in long-term imbalances in the labour market and labour shortages. This situation can prevail despite the tendency for wage rate changes to eliminate labour shortages.

The economics literature identifies a number of indicators that can be used to measure labour shortages. Benjamin, Gunderson, Riddell (2002)⁷ show that the job vacancy rate and the unemployment rate are the “*observable counterparts*” to the aggregate excess demand and supply of labour. Job vacancies are an indicator of the demand for labour by employers and the persistence of unfilled vacancies may reflect an excess demand for labour. Unemployment occurs when workers cannot find jobs and persistent levels of unemployment may signal an excess supply of labour. In common sense terms, if there is excess demand for labour, job vacancies will outstrip the number of unemployed people whereas, if there is excess supply, there will be fewer job vacancies than unemployed people.

It is important to note that it is necessary to look at unemployment and vacancy rates together to determine if excess demand or supply exists in the labour market. Neither indicator, by itself, is conclusive in making this determination.

⁷ Dwayne Benjamin, Morley Gunderson, W. Craig Riddell, “Labour Market Economics”, Fifth Edition, 2002, pp. 578 – 611.



Benjamin, Gunderson, Riddell show that wage changes are a function of the excess of job vacancy rates over unemployment rates. Vacancy rates in excess of unemployment rates will put upward pressure on wages.⁸ They point out that the labour market will be in equilibrium at some offsetting level of job vacancy rates and unemployment rates. At this point there is no upward or downward pressure on wages and the demand for labour equals the supply of labour.

It is possible to use secondary data on wages, unemployment rates and vacancy rates to assess the existence and significance of labour shortages. Rising wages would signal an excess of the demand for labour over supply. Similarly vacancy rates in excess of unemployment rates would signal an excess of the demand for labour over supply. The most useful ways to use these indicators are to examine them for a specific occupation over time and in relation to other occupations. These comparisons will provide information on whether labour shortages are increasing or decreasing over time and whether labour shortages in a specific occupation are more or less severe than those in other occupations.

⁸ Benjamin, Gunderson, Riddell also point out that wages tend to be downwardly rigid, that is, wage rates fall less rapidly in response to excess supply than they rise in response to excess demand.



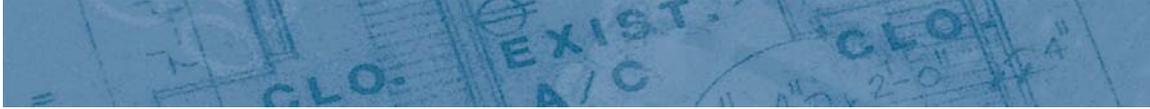
3.0 Wages as an Indicator of Labour Shortages

3.1 Wage Levels

The PRAXIS survey of employers provides information on the wages of plumbers, framers and other trades occupations. It shows that framers who worked for businesses that responded to the survey made \$16.33 per hour on average in 2002 while plumbers made \$18.53 per hour. Hourly wage rates for other trades included in the survey ranged from \$20.74 for electricians to \$23.00 on average for mechanics. It is interesting to note that wages in the survey were slightly higher than the average of \$15.33 per hour for construction trades workers in 2002 as recorded in the Labour Force Survey.

The PRAXIS survey of EI claimants also provided estimates of hourly wages for plumbers and carpenters who participated in the survey. Carpenters earned an average of \$16.42 per hour while plumbers made \$17.88 per hour on average.

Carpenters rather than framers were the designated group in the EI claimant survey in order to ensure that a sufficient sample of claimants was surveyed. Data from both the employer and EI claimant surveys show that virtually all carpenters work as framers as part of their job. The employer survey showed that only 3% of employees worked exclusively as framers and the vast majority worked in framing along with a wide variety of carpentry-related activities including finish carpentry, cabinet making, roofing, flooring and installation of items such as siding, eavestroughing and windows. The EI claimant survey supports this finding showing that 84% of respondent carpenters worked in framing. A majority of respondents also worked in installation (drywall, siding, eavestroughing, windows, etc.) finish carpentry, roofing and flooring. The EI claimant survey also showed that no single work activity accounted for more than one-third of the time of carpenters who responded to the survey.



3.1.1 Wage Rate Changes

Rising wages for plumbers and framers relative to those of other occupations would signal excess demand for these trades. Before focusing on plumbers and framers, it is useful to look at wages in the construction industry compared to those in industries over time. This comparison is presented in the following exhibit for the period 1991-2003.

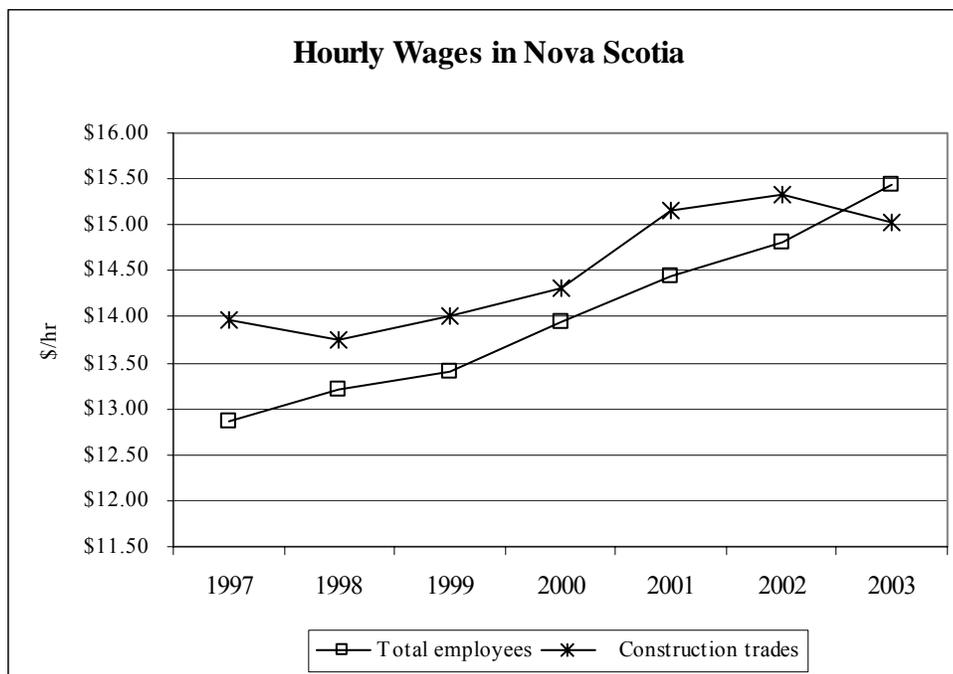


Source: Statistics Canada, Survey of Employment, Payroll and Hours, Table 281-0030

The exhibit shows that hourly wages in residential construction were virtually equal to those for the industrial aggregate through the entire 1991-2003 period. Wages in non-residential construction were 30% more than the industrial aggregate through the entire 1991-2003 period as were hourly wages in speciality trade contractors up to 2000. After that point wages for specialty contractors stagnated and, in 2003, were less than their 1998 level.

If wages are a reflection of the degree of tightness in the labour, it appears that there is roughly the same degree of tightness for residential and non-residential construction as was experienced by workers in the industrial aggregate. Demand conditions for speciality trade contractors may have eroded relative to labour supply after 2000.

Hourly wages for construction trades workers⁹ compared to those for all employees in Nova Scotia from 1997 to 2003 are presented in the following exhibit.



Source: Statistics Canada, Labour Force Survey, Labour Force Historical Review, Table Cd3T01an.

Construction trades workers in Nova Scotia made \$1.09 per hour more than all employees on average in 1997 but the differential dropped to as low as \$0.37 per hour in 2000 and stood at \$0.53 per hour in 2002. For the first time since 1997, wages for construction trades workers in Nova Scotia were less than the average for all employees in 2003. Hourly wages for the construction trades increased at an average annual rate of 1% compared to an average annual rate of 3% for all employees. These data suggest that

⁹ Construction trades are defined using the SOC 91 classification system. They include: Plumbers, Steamfitters, Pipefitters and Sprinkler System Installers, Gas Fitters, Carpenters, Cabinetmakers, Bricklayers, Cement Finishers, Tilesetters, Plasterers, Drywall Installers and Finishers, Lathers, Roofers and Shinglers, Glaziers, Insulators, Painters and Decorators, and Floor Covering Installers.



demand conditions relative to labour supply for construction trades were not as strong as those for all employees in Nova Scotia.

The PRAXIS survey of employers asked respondents to estimate the percentage change in hourly wages in 2001 and 2002. The average estimate for the entire workforce of businesses who responded to the survey was 3% in both 2001 and 2002. It is interesting to note that these rates were very similar to those recorded for all employees in Nova Scotia in 2001 and 2002 in the Labour Force Survey.

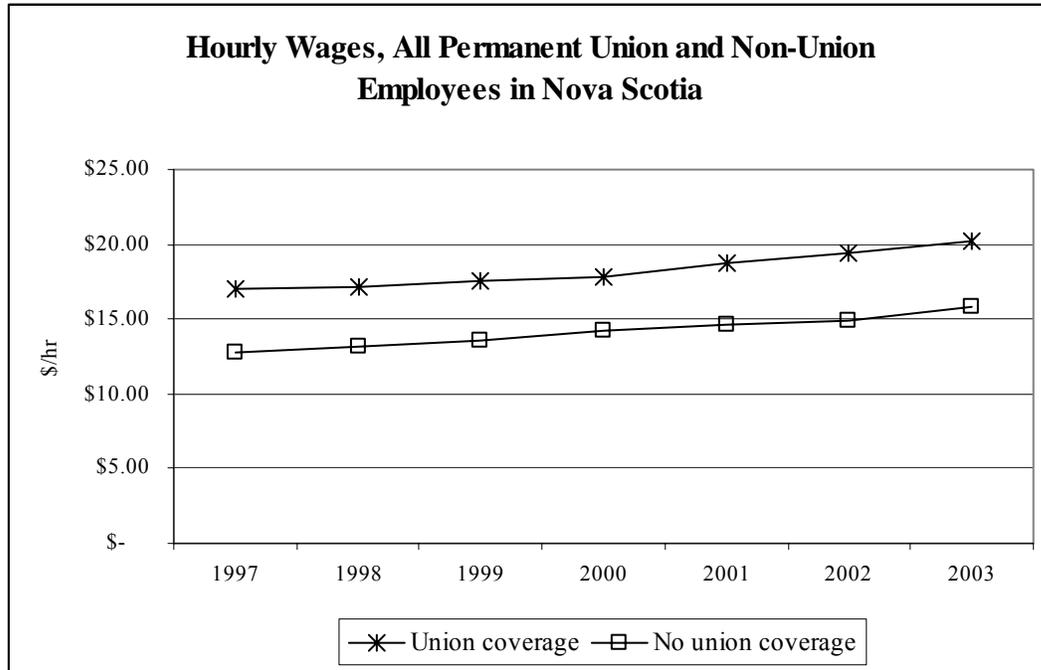
The average percentage change in hourly wages for framers in 2001 and 2002 in the PRAXIS employer survey was 3% for both years compared to 1% in both years for plumbers. Once again, if wage changes reflect demand conditions relative to labour supply, the PRAXIS employer survey indicates that conditions for framers in 2001 and 2002 were roughly similar to all occupations while those for plumbers were weaker.

It is interesting to note that wage changes for apprentices in 2001 and 2002 were lower than those for all trades workers. In fact, they were slightly negative on average for apprentices in some trades in both years. These data suggest that demand conditions for apprentices may have been weaker than those for non-apprentice trades workers.

The PRAXIS employer survey indicates that three times as many employers of framers felt that the rate of wage changes in 2002 was more rapid than it was in the 1990s than felt the opposite. Employers in the survey felt the same way about wage rate changes for their entire workforce but a lower proportion of employers of plumbers felt that the rate of change in wages in 2002 was more rapid than it was in the 1990s.

3.1.2 The Impact of Unionization

The impact of unionization on wages in Nova Scotia is illustrated in the following exhibit.



Source: Statistics Canada, Labour Force Survey, Labour Force Historical Review, Table Cd3T03an.

The exhibit shows that unionized wages in Nova Scotia were consistently about 30% higher than non-union wages over the 1997-2003 period.

The spread between union and non-union wages was documented in the PRAXIS employer survey. Unionized employers who responded to the PRAXIS employer survey paid an average of \$19.69 per hour in 2002 to certified framers. This was 30% more than the hourly wage of \$15.10 earned by certified framers who worked for non-unionized employers.

Unionized employers in the PRAXIS employer survey paid an average of \$15.56 per hour in 2002 to uncertified framers. This was 22% more than the hourly wage of \$12.80 earned by uncertified framers who worked for non-unionized employers.



Unionized employers of apprentice carpenters paid 31% more than their non-union counterparts. Both unionized and non-unionized employers paid apprentices 26% less than they paid certified framers.

Unionized employers paid an average of \$20.83 per hour in 2002 to certified plumbers. This was 20% more than the hourly wage of \$17.33 earned by certified plumbers who worked for non-unionized employers.¹⁰

Unionized employers of apprentice plumbers paid 26% more than their non-union counterparts. Both unionized and non-unionized employers paid apprentices about one-third less than they paid certified plumbers.

The spread between unionized and non-union workers also was documented in the EI claimant survey. Unionized carpenters earned \$20.45 per hour – 48% more than the average wage of \$13.86 per hour for non-union carpenters. Unionized carpenters who were not certified earned \$19.22 per hour – 39% more than their non-union counterparts.¹¹

The average wage of unionized plumbers who responded to the EI claimant survey was \$20.80 per hour. This was 43% higher than the average wage of \$14.51 per hour for non-unionized plumbers. The wage gap between unionized and non-unionized plumbers was significantly less for apprentices than for certified trades people.

All data on union and non-union wage rates show that substantially higher wages are paid to unionized workers than their non-union counterparts. They show that unionization is an important factor that segments the construction trades labour market.

¹⁰ Wages paid to uncertified plumbers are not reported here due to the low number of employers reporting.

¹¹ Wages paid to certified carpenters are not reported here due to the low number of employees who responded to this question.



3.1.3 The Impact of Certification, Industry Sector and Firm Size

The PRAXIS employer survey showed that a premium was paid to certified framers relative to their uncertified counterparts. Unionized employers paid 27% more to certified framers than their non-union counterparts while non-union employers paid a premium of 18% to certified workers. Wages for certified and uncertified plumbers can not be compared because of the low number of uncertified plumbers.

Certified carpenters included in the EI claimant survey earned \$20.08 per hour – a premium of 30% over the average wage of \$15.46 earned by uncertified carpenters. Once again, wages of certified and uncertified plumbers could not be compared in the EI claimant survey. Both the employer and EI claimant surveys indicate that certified framers/carpenters in Nova Scotia earn a substantial wage premium compared to uncertified workers.

The PRAXIS employer survey shows that wages for framers in non-residential construction were one-third higher than for framers who worked for firms in the residential sector while those for plumbers who worked in non-residential construction were 15% higher than for plumbers who worked for firms in the residential sector. The EI claimant survey shows that the premium for carpenters who worked in non-residential construction was 18% over their counterparts in the residential sector. The premium was 16% for plumbers.

The PRAXIS employer survey indicates that large employers paid significantly higher wages in 2002 than small employers. For framers, businesses that employed fewer than 10 framers paid an average of \$15.56 per hour for certified framers compared to \$17.87 per hour for businesses who employed 10-25 framers. Very large businesses who employed more than 25 framers paid \$21.19 per hour for certified framers – or 36% more than businesses employing fewer than 10 framers.

For plumbers, employers with fewer than 10 plumbers paid an average of \$18.17 per hour for certified plumbers compared to \$19.81 per hour for businesses who employed 10-25 plumbers. Very large businesses that employed more than 25 plumbers paid \$24.00 per hour – or 32% more than businesses employing fewer than 10 plumbers.



The PRAXIS employer and EI claimant surveys indicate that unionization, industry sector and business size significantly influence wage rates for framers and plumbers. The wage data suggest that there are two segments in the labour market. The first sector is composed of large, highly unionized firms who work primarily in the non-residential sector of the construction industry. The second sector is composed of small, mostly non-union firms who dominate the residential sector.

The EI claimant survey shows that the proportion of carpenters and plumbers that were unionized in non-residential building was twice as high as in the residential sector. Approximately 89% of the home renovations firms included in the PRAXIS employer survey had fewer than 10 employees compared to 65% of firms for new home construction and 33% of the firms in non-residential construction. The Business Register produced by Statistics Canada shows that 94% of firms in the home renovations sector had fewer than 10 employees in 2003 compared to 89% of the firms in single family housing and 61% of the firms in non-residential building construction. These data show that the non-residential sector is more highly unionized and has larger firms than the residential sector of the construction industry.

The EI claimant survey shows that approximately one-half of the carpenters and two-thirds of plumbers worked in at least three of the seven industry sectors identified in the survey. The survey shows that non-unionized plumbers and carpenters were significantly more mobile between sectors than their unionized counterparts.

For plumbers, the EI claimant survey data show that most of the respondents who worked in one or two industry sectors worked in non-residential building. The mobility data indicate that there is one group of plumbers that worked exclusively in non-residential building construction or in non-residential building along with one other sector.



3.1.4 The Impact of Other Factors on Wages

The EI claimant surveys completed by PRAXIS tested for the impact of a number of other factors on the wages paid to plumbers and carpenters. Key factors included skill levels, supervisory status, education levels and age. Wage premiums associated with these factors should reflect the value placed by employers on the various attributes presented in the survey.¹²

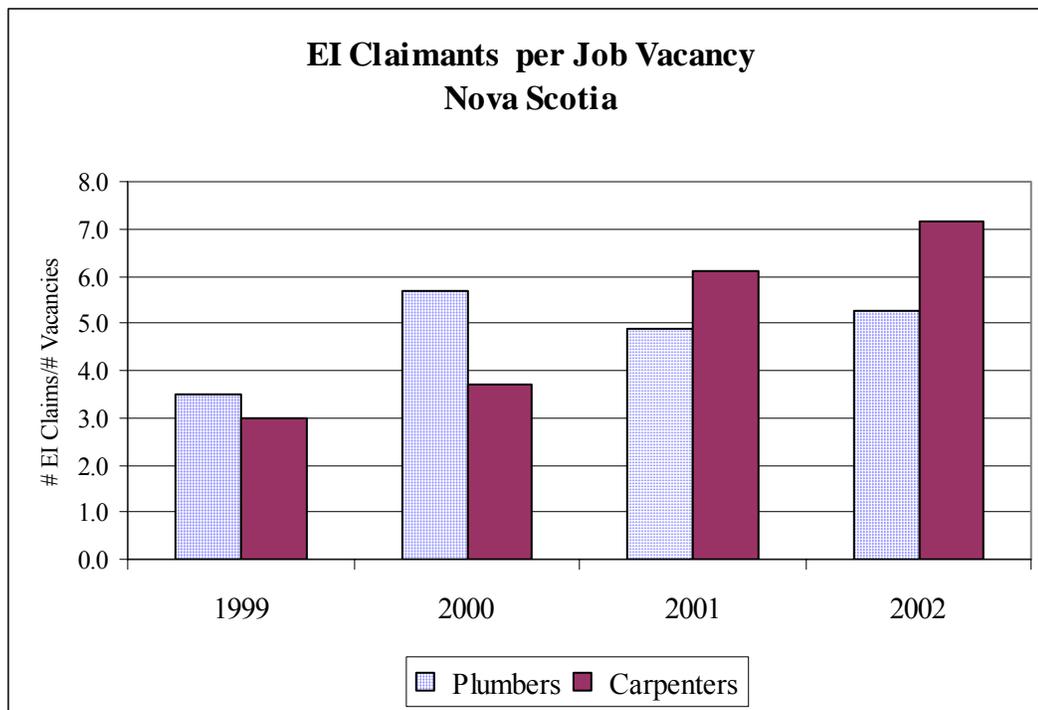
The ability to relate wage levels to these factors was limited by the small number of observations contained in cross-tabulations of wages with some of these variables. In some cases the reliability of estimates was too low to report while in others the results must be treated with caution due to the high degree of error included in the estimates. Subject to these limitations, the key findings are:

- ▲ No significant relationship between the wages of respondent carpenters and respondents ratings of their skill levels was identified. Respondent plumbers who earned \$15 per hour or more rated their skills significantly higher than those who earned less than \$15 per hour.
- ▲ Respondent carpenters who were not supervised at all in 2002 received a slight wage premium compared to those who were supervised for part of the year and a 23% premium compared to those who were supervised for 12 months. Respondent carpenters who supervised others for part or all of the year received over \$2 more per hour (13%) than those who did no supervision. Respondent plumbers who were not supervised at all in 2002 received a 30% wage premium compared to those who were supervised for part of the year, and a 24% premium compared to respondents who were supervised the entire year.
- ▲ Respondent carpenters who did not complete high school earned slightly lower wages than those who completed high school with no post-secondary education, and those who completed community college. Respondent plumbers who completed community college or had a higher education level earned average wages of \$18.35 per hour – a premium of 6% compared to those who had lower education levels.
- ▲ Wages increased with the age for respondent carpenters and plumbers.

¹² It must be noted that this analysis does not consider the relationship between the factors themselves and can not therefore provide definitive evidence of the affect of each factor on wages. For example, respondents with high skill ratings and education levels may both receive wage premiums. In this case, it is impossible to determine which of these factors is responsible for the wage premium.

4.0 Unemployment and Vacancy Rates as Indicators of Labour Shortages

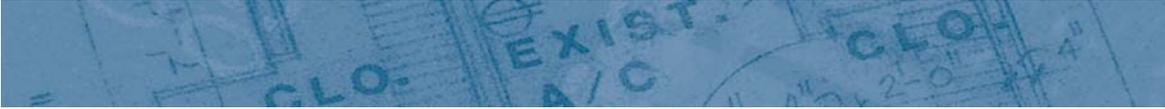
The relationship between unemployment and job vacancies over time is known in the economics literature as the Beveridge Curve. It is a measure of the balance of the demand and supply of labour. The number of EI claimants is used as a proxy for unemployment in this report and Job Orders placed to Human Resources Skills Development Canada (HRSDC) are used as a proxy for job vacancies.¹³ The ratio of EI claimants to Job Orders for plumbers and carpenters in Nova Scotia from 1999 to 2002 is provided in the following exhibit.



Source: HRSDC EI Claimant and Trades Job Order Data

The data show that the ratio for carpenters was three EI claims for one job vacancy in 1999 but it grew to seven claims per vacancy in 2002. For plumbers the ratio grew from 3.5 EI claims per vacancy in 1999 to 5.3 in 2002. The data indicate that the balance of the demand and supply of labour tipped toward to supply side over the 1999-2002 period.

¹³ These proxies are required because no time series data on unemployment and job vacancies exist for plumbers or carpenters. The only unemployment data available for these trades are in the Census.

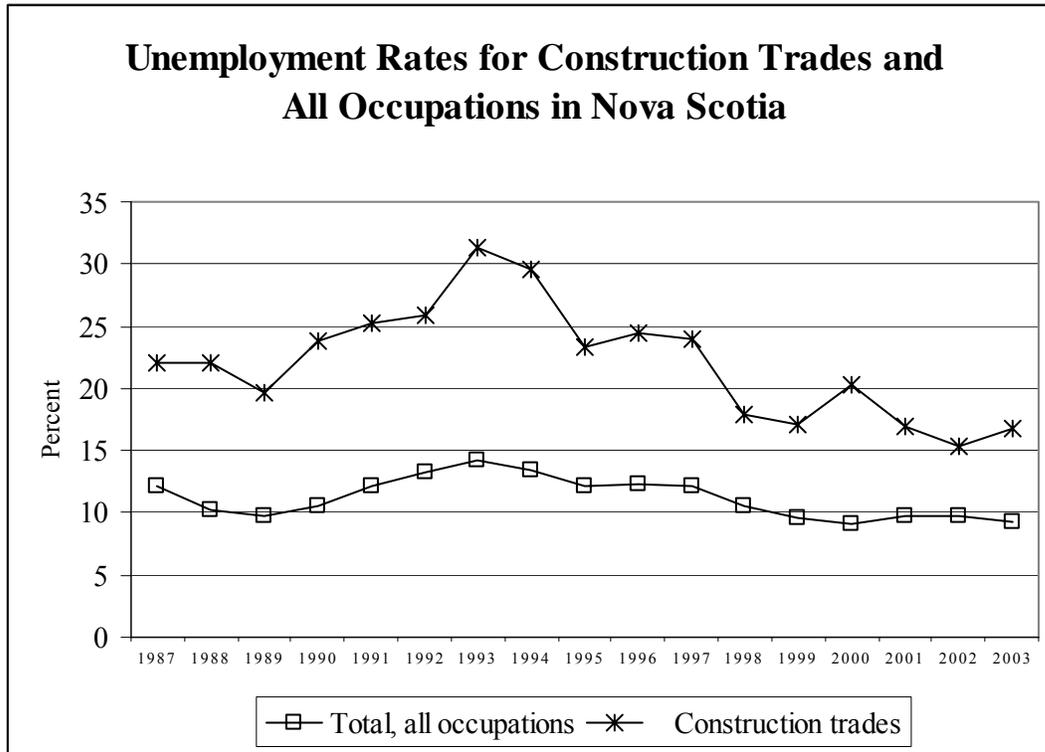


Unfortunately the data required to calculate the ratio of EI claims to vacancy rates were not available for other occupations. Comparison of the ratio for plumbers and carpenters to that of other and all occupations would provide a perspective on the relative degree of shortages in these trades. The exhibit above indicates that shortages became less acute over the 1999-2002 period but, without comparative data for the labour force as a whole, it is impossible to determine whether the ratios presented in the exhibit are high or low relative to other occupations. Analysis of data on EI claims and job vacancies for trades and all occupations in Nova Scotia would provide a perspective on the balance of demand and supply in the construction trades compared to other occupations in the province.

The data presented in the above exhibit must be interpreted cautiously for a variety of reasons. First, the number of claims and especially vacancies is small and therefore subject to a significant degree of error. Second, occupational coding and other administrative problems could introduce more error into the estimates. Third, only a fraction of total vacancies are captured in the HRSDC Job Order data and this fraction could vary by occupation for a variety of reasons. Finally, EI claimants are not an exact measure of unemployment.



A comparison of the unemployment rate for construction trades with that for all occupations over time is depicted in the following exhibit.



Source: Statistics Canada, Labour Force Survey, Labour Force Historical Review, Table Cd1T06an.

The unemployment rate in the construction trades was 1.8 times that for all occupations in Nova Scotia throughout the 1987-2003 period. Both rates dropped by about 25% over the 1987-2003 period. The unemployment rate for construction trades dropped by almost 50% from its 1993 peak compared to a drop of 35% for all occupations.

The Census also provides data on unemployment rates. The unemployment rate for all occupations in Nova Scotia was 11.2% according to the 1991 Census. The rate dropped slightly to 10.4% in 1996 and again to 9.1% in 2001. The unemployment rate for the construction trades dropped by a greater proportion over the period from 27.5% in 1991 to 16.2% in 2001. As a result, the unemployment rate in the construction trades was 2.5 times that in all occupations in 1991 and 1.8 times in 2001.



The unemployment rate for plumbers was 18.7% in 1991. It remained at about that rate in 1996 but plummeted to about 8% in 2001. These data appear to show a precipitous drop in unemployment among plumbers but the small numbers of unemployed introduce a high degree of error into the estimates. The unemployment rate for carpenters was 28.8% in the 1991 Census but declined significantly in both 1996 and 2001 to 15.7% in the 2001 Census.

The unemployment rate dropped for all occupations and the construction trades since the early 1990s and the drop was proportionately greater in trades than in the labour force as a whole. It is interesting to note that these trends conflict with trends in the number EI claims which increased over the period in an absolute sense and in relation to the number of job vacancies. The data appear to say that EI use is increasing despite the fact that unemployment is dropping.

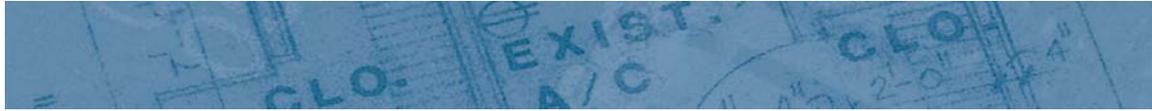
The number of job openings in 2002 for plumbers and framers was documented in the PRAXIS employer survey as summarized in the following table.

Trade/ Activity Area	# of Employers with Job Openings		# of Job Openings		Percent of Employees	
	# Seasonal	# Full-Year	# Seasonal	# Full-Year	# Seasonal	# Full-Year
Framers	44	11	124	37	35%	6%
Electricians	3	5	17	5	18%	2%
Plumbers	11	16	126	32	68%	11%
Apprentice Carpenters	5	1	18	1	26%	1%

Source: PRAXIS Employer Survey

The survey shows that openings for seasonal jobs were a much higher proportion of employment than full-year jobs. This confirms findings from other data that seasonal employment is the norm for construction trades. Plumbers had job opening rates that were twice those experienced by framers for both seasonal and full-year jobs. By comparison, job opening rates for electricians and apprentice carpenters were much lower, especially for full-year job openings.

It is interesting to note that it took employers three to four times as long to fill the full-year positions as the seasonal ones. It is also interesting that 27% of employers with openings for seasonal plumbers and 40% with openings for full-year plumbers could not fill all of these positions. The proportion of



employers of framers that could not fill job openings also was high at 46% for seasonal and 30% for full-year positions.

Employer survey results show that about two-thirds of employers who were looking for framers and plumbers found it very difficult to fill those positions, rating the difficulty a 5 on a scale of 1 to 5. Employers found it easier to find electricians (with 25% rating a 5) and apprentice carpenters (with 17% rating a 5).

The two most highly rated reasons why positions were difficult to fill as documented in the PRAXIS employer survey were a lack of experience and skills on the part of applicants. Approximately one-half of employers rated these factors as a 5 on a scale of 1 to 5 in terms of difficulty. A lack of certifications among applicants received a rating of 5 by over one-third of employers. By contrast, employers did not think that a lack of applicants was a problem. More than half thought lack of applicants was not very important or not important at all, while less than 40% thought this was important or very important.

The mixed evidence collected for this report on the existence of labour shortages in the construction trades and for plumbers and framers is summed in the following table.

EVIDENCE OF LABOUR SHORTAGES

Item	Evidence
Wage rate changes by industry	Wages rate changes in the construction industry were virtually equal to those for the industrial aggregate in Nova Scotia through the entire 1991-2003 period.
Wage rate changes by occupation -- construction trades occupations as a whole	Wage rate changes for construction trades occupations were lower than for all occupations in Nova Scotia over the 1997-2003 period.
Wage rate changes by occupation -- plumbers and framers	Wage rate changes for framers were equal to those for all occupations in Nova Scotia in 2001 and 2002 while those for plumbers were less. Employers felt that wage rates changed faster in 2002 than in the 1990s for framers, plumbers and all occupations.
Wage rate changes by occupation -- apprentice plumbers and framers	Wage rate changes for apprentice carpenters and plumbers were below those for all occupations in Nova Scotia in 2001 and 2002.



EVIDENCE OF LABOUR SHORTAGES

Item	Evidence
Segmentation of the labour market	Wage data indicate that the construction trades labour market is segmented by the following factors: unionization, certification and industry sector (residential vs. non-residential). Other factors such as supervisory status and skill levels also may segment the labour market.
EI Claimant data	A high proportion of the carpentry and plumbing labour force made EI claims on an annual basis over the 1998-2002 period.
EI Claimant and HRSDC Job Order data	The ratio of EI Claimants to Job Orders increased for both plumbers and framers over the 1999-2002 period.
Unemployment rates - construction trades occupations as a whole	<p>Unemployment rates for construction trades in Nova Scotia were 1.8 times those for all occupations. Both rates dropped significantly since the early 1990s.</p> <p>Unemployment rates for construction trades in Nova Scotia as measured in the Census dropped more than those for all occupations from 1991 to 2001.</p>
Unemployment rates - plumbers and carpenters	Unemployment rates for plumbers in Nova Scotia as measured in the Census dropped dramatically from 1996 to 2001. The rate for carpenters dropped significantly from 1991 to 2001.
Job Openings - PRAXIS Employer Survey	<p>Seasonal job openings were a significantly higher percentage of employment than full-time job openings for framers, plumbers and apprentices. It took employers three to four times as long to fill the full-year positions as the seasonal ones.</p> <p>Plumbers had job opening rates in 2002 that were twice those experienced by framers for both seasonal and full-year jobs. Job opening rates for apprentices were much lower than for framers and plumbers, especially for full-year job openings.</p> <p>27% of employers with openings for seasonal plumbers and 40% with openings for full-year plumbers could not fill all of these positions. The proportion of employers of framers that could not fill job openings also was high at 46% for seasonal and 30% for full-year positions.</p> <p>Two-thirds of employers who were looking for framers and plumbers found it very difficult to fill those positions.</p> <p>The two most highly rated reasons why positions were difficult to fill were a lack of experience and skills on the part of applicants.</p>



5.0 The Shortages Paradox

As noted previously in this report, surveys and labour market information on construction trades occupations point to something of a paradox. Surveys and media reports show that employers experience shortages of trades workers that are more severe than those for other occupations. However, on balance, labour market data do not indicate that shortages are more prevalent in the construction trades.

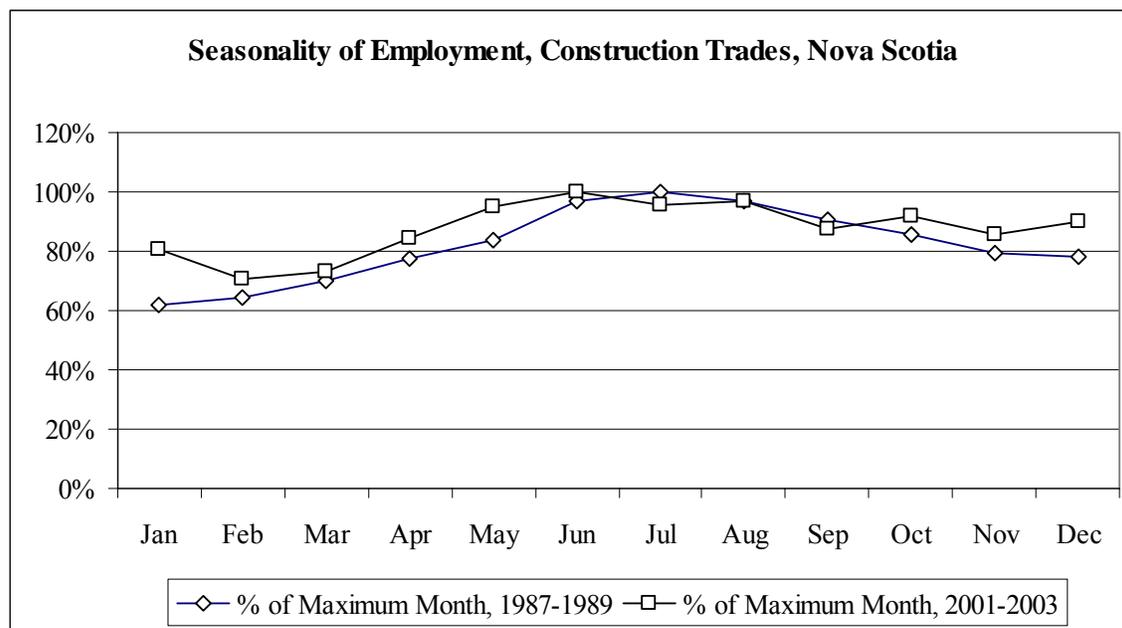
This section of the report discusses two aspects of the construction industry that may contribute to the perception of labour shortages by employers. The first is the seasonal nature of the industry which results in a relatively high level of frictional unemployment. The second is artificially low wages in the residential sector of the construction industry caused by the underground economy.

5.1 Seasonality and Frictional Unemployment

It was shown above that a high proportion of plumbers and carpenters in Nova Scotia – one-third plumbers and 40% of carpenters – claim Employment Insurance (EI) on an annual basis and EI use rose from 1998 to 2002. The high level of seasonality in the construction trades workforce is a primary reason for the reliance on EI. Both the employer survey and the survey of EI claimants show that seasonality is significant for plumbers and carpenters. For example, the employer survey shows that 38% of plumbers and 37% of framers who worked for firms in the survey worked on a seasonal basis (less than 40 weeks per year). The EI claimant surveys shows that 67% of the years worked by respondent carpenters and 52% of years worked by respondent plumbers were worked on a seasonal basis.



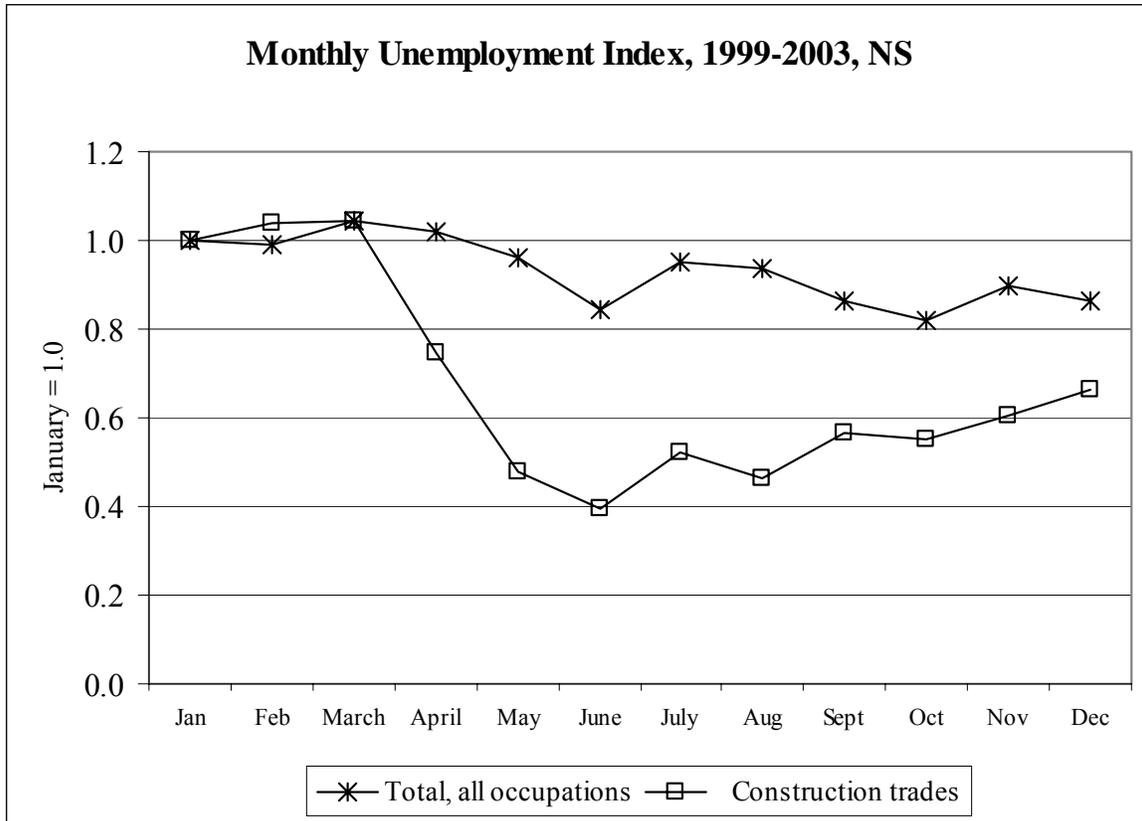
Seasonality also can be shown by examining monthly labour market data produced by the Labour Force Survey.



Source: Labour Force Survey, Statistics Canada, Labour Force Historical Review, Table Cd1T06mn

The exhibit shows that employment in the winter months was significantly below that in the summer months over both the 1987-1989 and 2001-2003 periods. It also shows that seasonality was less in the 2001-2003 period.

The following exhibit shows that unemployment is highly seasonal in the construction trades. It presents a monthly unemployment index for construction trades and all occupations in Nova Scotia. The index is based on average monthly unemployment from 1999-2003 and sets unemployment in January equal to 1.0.



Source: Labour Force Survey, Statistics Canada, Labour Force Historical Review, Table Cd1T06mn

The exhibit shows that unemployment in the construction trades peaked in March and declined in the summer months. The index in June was only 40% of the January level. For all occupations unemployment was lowest in June and October, standing 20% below the level of unemployment experienced in January.

The high degree of seasonality experienced by construction trades affects the recruitment and contributes to frictional unemployment in the industry. Frictional unemployment is unemployment that occurs when people are temporarily unemployed while looking for work. Vacant positions are available for these workers but time is required for the workers seeking jobs and the employers recruiting workers to find each other. Frictional unemployment is associated with the normal turnover of the labour force and exists even when the economy is operating at full employment. Benjamin, Gunderson,



and Riddell, 2002 summarized the conditions that lead to high levels of frictional unemployment as follows.¹⁴

“... the magnitude and frequency of seasonal, cyclical and other economic disturbances, the job search behaviour of employers and workers and the efficiency of the matching process, the use of layoffs to respond to changes in demand, the amount of labour force turnover, the age-sex composition of the labour force, and labour market policies such as minimum wages and unemployment insurance.”

The quotation points out that the efficiency of the job matching process also is an important determinant of the level of frictional unemployment. Job matching is the process through which employers and workers find each other.

The construction workforce fluctuates because of seasonal and cyclical changes in the demand for labour and because of the stop-go nature of construction projects. These fluctuations result in a significant proportion of the workforce being periodically unemployed in the construction industry. From an employer’s perspective, the fluctuations mean that employers must frequently lay-off workers during periods of low activity and recruit them when activity picks up. Unlike other industries with steady production patterns, lay-offs and recruitment are an on-going fact of life for businesses in the construction industry. Plumbers and carpenters who responded to the PRAXIS EI claimant survey changed employers frequently in the five years leading up to 2002. These changes are symptomatic of fluctuations in the construction trades workforce.

The on-going lay-off and recruitment cycle results in recruitment problems for employers in the construction industry as they attempt to find skilled workers to match their production requirements. These problems are reported in surveys and the media as labour shortages.

It is important to point out that recruitment problems related to seasonality and frictional unemployment are not labour shortages as defined in Section 2 above. The demand for workers does not exceed the supply in this situation and there is no upward pressure on wages. A high level of both job vacancies and unemployed workers exists and these factors put opposite pressures on wages. Seasonality and frictional unemployment do however cause problems for employers and have a negative

¹⁴ Labour Market Economics, Fifth Edition, Dwayne Benjamin, Morley Gunderson, W. Craig Riddell, 2002, p. 579.



impact on the economy in a variety of ways. These recruitment problems should not, however, be confused with labour shortages as defined in Section 2 of this report.

5.2 The Impact of the Underground Economy

The level of wages paid to trades workers in the construction industry may be artificially low due to the existence of the underground economy.

There is no best or commonly accepted method of measuring the underground economy. Giles and Tedds¹⁵ concluded that there has been general agreement that the underground economy accounted for between 9% and 25% of measured GDP in most developed western countries in the 1990s. Giles and Tedds noted that there is a consensus that the underground economy has been growing as a proportion of GDP in almost every country that has been studied over the past two or three decades. They note that the rapid increase in self-employment has contributed to this growth.

The Pulse Survey produced by the Canadian Home Builders Association surveys employers in the residential construction industry on a semi-annual basis. The winter 2003/2004 version surveyed 328 new home builders and renovators across Canada. It showed that the underground economy was the most critical problem faced by home renovations companies and the second most critical problem for new home builders.¹⁶ It found that twice the proportion of renovators as new home builders rated the underground economy as a critical problem and that cash deals were most common for small repair jobs and small renovations of less than \$5,000. The percentage of employers who identified the underground economy as a problem was almost twice as high in Atlantic Canada as in Canada as a whole.

A 2001 report by Prism Economics and Analysis estimated the size of the underground economy in Ontario's construction industry. The report estimated that underground employment accounted for 25% of total employment in the construction industry. The rate for residential construction (34%) was several times higher than that in non-residential construction. The report identified a number of

¹⁵ Giles, David E.A. and Tedds, Lindsay M., Taxes and the Canadian Underground Economy, Canadian Tax Paper 106, Canadian Tax Foundation (2002) Page 66.

¹⁶ Only insurance rates were a greater problem.



negative impacts of the underground economy on the construction industry.¹⁷

“These include higher tax and contribution burdens on legitimate contractors and workers. The growth of underground practices in construction also results in unfair competition for legitimate contractors and workers.”

A survey included in a recent report on the underground economy completed by PRAXIS quantified the impact of underground activity on businesses in the construction industry in Nova Scotia.¹⁸ The survey showed that the average percentage of total business activity categorized as underground by respondents in the new home construction sector was 21% compared to 36% in the home renovations sector.

When asked in the PRAXIS survey to rate the extent to which the underground economy creates unfair price competition for professional home builders and renovators 61% of firms in new home construction and 71% in home renovations rated this factor as 5 on a scale of 1 to 5. The PRAXIS survey asked respondents to estimate the impact of the underground economy on pricing proposals and total sales revenues. The average percentage reduction estimated by new home builders was 19% for pricing proposals and 24% for total sales revenues while for home renovators the reductions were 26% for pricing proposals and 28% for total sales revenues.

The PRAXIS underground economy survey made a link between the impact of the underground economy on the sales and prices of businesses and the wages offered to workers. Roughly 40% of respondents in residential construction strongly agreed that competition from underground builders held down wages of legitimate businesses in the sector. The survey also showed that about three-quarters of the respondents strongly disagreed with the statement that underground activity helped in the recruitment and training of workers.

The survey of employers completed by PRAXIS for this report confirms that employers believe that the underground economy is a serious problem. Employers were asked to rate the seriousness of various problems facing their industry from 1 (low) to 5 (high). Of the issues raised, the most commonly held

¹⁷ John O’Grady, Prism Economics and Analysis, “Estimates of Revenue Losses to Governments as a result of Underground Practices”, August, 2001, p. 8.

¹⁸ For supporting documentation from the PRAXIS report see: PRAXIS Research and Consulting Inc., “Current Impact of the Underground Economy Residential Construction Sector In Nova Scotia, Draft Version”, December 2003, pp. 37-44.



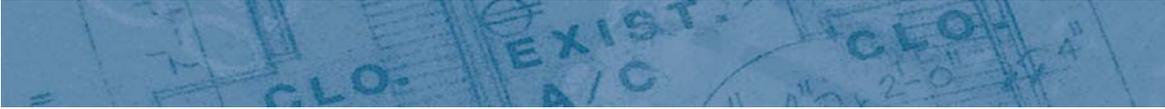
concern was competition from the underground economy. Roughly one-half of the employers rated this problem a 4 or 5 while 40% rated skilled trade's shortages as a 4 or 5. None of the other issues included in the survey received a rating of 4 or 5 from more than 15% of employers surveyed.

Available evidence indicates that the underground economy exists and is significant in the construction industry in Nova Scotia, particularly the residential sector of the industry. It also shows that the underground economy affects the prices and revenues of home building companies and negatively affects wages and recruitment. Available evidence suggests that tradespeople and firms operating illegally in the underground economy do not pay taxes and therefore have a competitive advantage over legitimate operators. As a result, the profits of legitimate operators in the construction industry are reduced. Low profits, in turn, reduce wages that can be paid and make it difficult to attract and retain workers in the construction industry.

As was the case with seasonality and frictional unemployment, recruitment problems resulting from low wages would be reported by employers in surveys and the media as labour shortages. Employers experience difficulty attracting skilled workers because they cannot raise wages due to competition from the underground economy. In this situation, the demand for and supply of labour are in balance at the going wage. Using the economists' definition, no labour shortages exist in this situation. This, however, offers little comfort to employers who are unable to recruit skilled workers and must suffer the operational problems that stem from this reality.

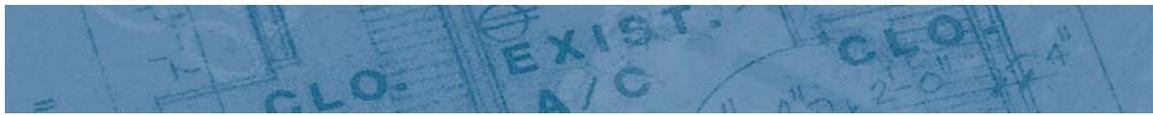
5.3 Summing Up

The construction industry has a relatively high level of seasonality and frictional unemployment. A variety of reports show that the underground economy is significant in the construction industry, especially the residential sector of the industry. Frictional unemployment and artificially low wages due to the underground economy cause recruitment problems that are experienced by employers in the construction industry as labour shortages and are reported as such in surveys and media reports. These factors may explain why employers in the construction industry report a higher degree of shortages than employers in other industries.



It is important to note that while recruitment problems stemming from frictional unemployment and low wages are interpreted by employers as labour shortages, they are not shortages as defined by economists. With frictional unemployment, high levels of job vacancies and unemployed workers co-exist and the demand for labour equals supply. Upward pressure on wages due to job vacancies is offset by downward pressure due to unemployment.

The inability of employers to increase wages due to competition from the underground economy may cause recruitment difficulties for employers but, once again, the demand for labour equals supply at the artificially low wage. There are no labour shortages and there is no upward pressure on wages as employers are unable to offer higher wages to prospective workers. In this light, it is interesting that only 29% of employers who responded to the PRAXIS employer survey indicated that they raised wages in response to difficulties recruiting skilled workers.



6.0 Labour Supply Rigidities and Labour Shortages

Research conducted for this project provides evidence of significant problems in labour supply for both plumbers and carpenters. It was shown above that employers in the PRAXIS survey indicated that they were having difficulties finding workers with the skills and experience required to fill vacant positions. Employers also indicated that they did not feel that their labour supply problems were caused by a lack of bodies but by a lack of individuals with the skills and experience that were required on jobsites.

6.1 Rigidities and Shortages for Carpenters

Carpenters do not need a certificate of qualification to practice their trade. Trades people can either go through the apprenticeship program or learn their carpentry skills on the job. The employer survey estimated that 43% of carpentry employees (excluding apprentices) were certified. These data imply that the majority of carpenters received their training on the job.

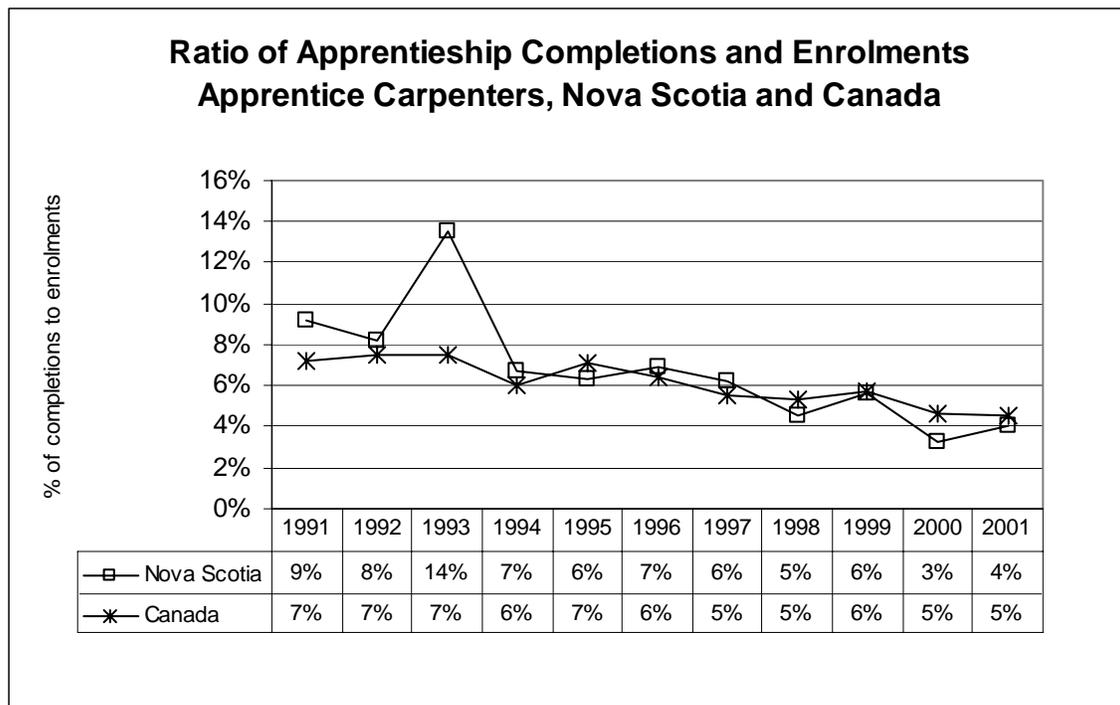
Employers' ability to provide on-the-job training is limited by a number of factors including time and resource constraints faced by construction businesses and turnover of the workforce. Employers are reluctant to invest in training for employees because some of these employees will leave their company and the pay-off from such training will be lost. Government support for the training of employed workers also is limited due to the fact that training funds are focused on EI recipients. There is no formal training structure or process through which training can be provided to workers who do not participate in the apprenticeship program.

These realities imply that many carpenters may not receive adequate training in their trade and may not acquire the skills required by employers. They may partially explain why employers report difficulties finding skilled individuals to fill vacant carpentry positions. In such cases labour shortages may occur as employers may not be able to find skilled workers despite offering to pay premium wages.

The supply of skilled carpenters is further constrained by problems with the apprenticeship system. Statistics Canada data on enrolments and completions of apprentice carpenters in Nova Scotia show that enrolments declined significantly over the 1991-2001 period, despite a rebound in 2001. Annual average enrolments were 582 over the 1991-1997 period compared to an average of 470 over the 1998 to 2001 period. Completions reached a peak of 84 in 1992 and then fell to a low of 15 in 2000. The

annual average of completions was 49 over the 1991-1997 period compared to 21 over the 1998 to 2001 period.

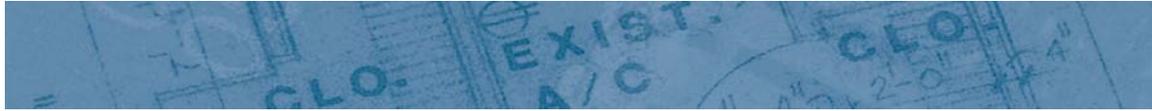
The ratio of completions to enrolments for apprentice carpenters in Nova Scotia and Canada calculated from data provided by Statistics Canada is illustrated in the following exhibit.



Source: Statistics Canada, Culture, Tourism and Centre for Education Statistics

Ratios declined over the period in Canada and Nova Scotia. The ratio for Nova Scotia dropped from roughly 7% in the early 1990s to 4% in 2001. The ratio for Canada dropped from the 8%-9% range in 1991-1992 to 5% in 2000-2001. The Apprenticeship program for carpentry is four years in duration. If enrolment was constant, and all of those enrolled completed the program, 25% of those enrolled would complete the program each year. The exhibit shows that the average annual completion to enrolment rate for carpenters was 4% in 2001. This rate was dramatically lower than the completion rate of 25% that would occur if all apprentices completed their programs in four years.

One explanation for the low completion to enrolment rates recorded for carpenters is that apprentice carpenters may take more than four years to complete the program. For example, if it took an average



of six years to complete the program, roughly 17% of those enrolled in the program would complete it each year.

A second possible explanation for low completion to enrolment rates in Nova Scotia is that a substantial number of apprentices withdraw from the program. Completion rates of in the 4% - 7% range indicate that withdrawals were significantly higher than completions over the 1994-2001 period.

The Statistics Canada apprenticeship data indicate that a high proportion apprentice carpenters do not complete the program and that apprenticeship completion to enrolment rates in Nova Scotia declined in the 1998-2001 period compared to the 1991-1997 period. They also show that the apprenticeship trends are a Canada-wide phenomenon as completion rates for Canada as a whole were similar to those in Nova Scotia and the decline in rates experienced in Nova Scotia also occurred in Canada.

Falling enrolments and low completion rates from the apprenticeship program can be attributed to a number of labour market problems including low wages, negative attitudes of youth towards the construction trades, a lack of exposure to the trades in high schools and the seasonal nature of employment offered in the construction industry.¹⁹ Another important reason is that an apprentice requires thousands of hours of employment to become a licensed journey person. These hours are difficult to accumulate in the construction industry due to the fact that much of employment available in the industry is seasonal.

The lack of mandatory certification in the carpentry trade also could contribute to low completion rates. There may be little incentive for an apprentice to complete the program unless employers are willing to pay a wage premium for certified workers. The PRAXIS survey of EI claimants shows such a premium does appear to exist. Licensed carpenters who participated in the survey earned a 30% wage premium over their unlicensed counterparts.

Low completion rates for apprentice carpenters combined with limitations on the provision of on-the-job training act as a constraint on the supply of skilled carpenters and contribute to labour shortages for skilled workers in this occupation.

¹⁹ For a discussion of these factors, see: Morley Gunderson, "Skill Shortages in the Residential Construction Industry", January, 2001.

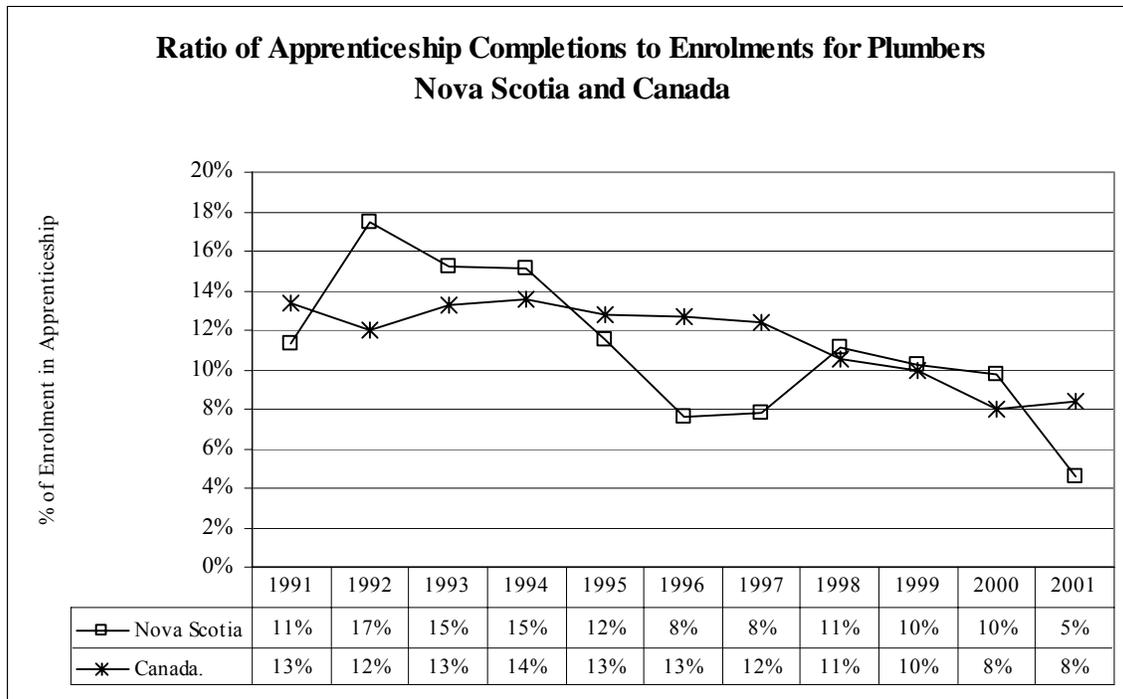


6.2 Rigidities and Shortages for Plumbers

Unlike carpenters, plumbers in Nova Scotia must be licensed to practice their profession. All journey people in the plumbing trade must go through the apprenticeship program. For this reason, apprenticeship has a more critical role in the supply of plumbers than it does for carpenters.

Statistics Canada data on enrolments and completions of apprentice plumbers in Nova Scotia show that enrolments rose significantly over the 1991-2001 period. The annual average of enrolments was 228 over the 1991-1997 period compared to 310 over the 1998 to 2001 period. Completions reached a peak of 36 in 1992 and then fell to a low of 18 in 1996. Completions recovered over the 1997-2000 period, reaching 31 in 2000 before falling to 17 in 2001. The annual average of completions was 28 over the 1991-1997 period compared to 27 over the 1998 to 2001 period.

The ratio of completions to enrolments for apprentice plumbers in Nova Scotia and Canada calculated from data provided by Statistics Canada is illustrated in the following exhibit.



Source: Statistics Canada, Culture, Tourism and Centre for Education Statistics



As with carpenters, the ratios for Canada and Nova Scotia declined over the period. The ratio for Nova Scotia dropped from an annual average of 12% from 1991-1997 to 8% from 1998-2001. The ratio for Canada dropped from an annual average of 13% from 1991-1997 to 9% from 1998-2001. The Apprenticeship program for plumbing is four years in duration. If enrolment was constant and all of those enrolled completed the program, 25% of those enrolled would complete the program each year. The average annual completion to enrolment rate for plumbers of 8% over the 1998-2001 period was roughly one-third of this maximum possible rate.

As with carpenters, low completion to enrolment rates for plumbers could result from an extended duration of the program or withdrawals from the program. Completion rates of 8% indicate that withdrawals were higher in relation to completions over the 1998-2001 period.

The Statistics Canada apprenticeship data show that, although a higher proportion apprentice plumbers completed the program than apprentice carpenters, rates of non-completion for plumbers are high. The data also show completion to enrolment rates in Nova Scotia and Canada declined in the 1998-2001 period compared to the 1991-1997 period. The reasons for low and declining completion rates of apprentice plumbers are much the same as those presented above for carpenters. The conclusion from the analysis also is the same: the supply of skilled plumbers likely is constrained by problems with the on-the-job training and the apprenticeship program and these problems contribute to a shortage of skilled plumbers.

The 2001 Census shows that the proportion of the carpentry and plumbing workforce that was under 25 in Nova Scotia was less than one-half of the proportion for all occupations. The Census data also show that the proportion of the carpentry workforce that was under 25 dropped significantly from 1991 to 2001. These data indicate that young people are not entering these trades upon graduating from high school. They also raise concerns that labour shortages in these trades will worsen significantly in the future as retirees are not replaced with new entrants.



7.0 Policy Implications

The analysis in Sections 4 and 5 of this report shows that the perception of labour shortages for framers/carpenters and plumbers in Nova Scotia is attributable to three factors:

- ▲ A high degree of seasonality and frictional unemployment in the construction industry;
- ▲ Artificially low wages in the residential sector of the construction industry; and
- ▲ Restrictions on the supply of skilled carpenters/framers and plumbers due to problems with apprenticeship and on-the-job training.

The first two factors do not result in labour shortages as defined in the economics literature while the third does result in labour shortages. It is important to note that, while the first two factors do not lead to labour shortages, they do result in serious problems for the construction industry. All three factors reduce the ability of employers to find skilled trades people to fill vacant positions. They affect the industry in three ways:

- ▲ Reduced business and economic activity;
- ▲ Higher costs; and
- ▲ Lower quality.

The PRAXIS employer survey indicates that these negative effects of recruitment difficulties were significant for employers of framers and plumbers. For example, two-thirds of the employers indicated that they limited the amount of work taken on when they could not find skilled trades people. Two-thirds of employers also increased the amount of overtime paid to existing workers while approximately 40% increased training to existing workers and over one-half increased the amount of time spent searching for skilled workers. All of these factors would increase employer costs. One-third of the employers indicated that they hired less qualified people when faced with difficulties finding skilled trades people. This finding indicates that recruitment difficulties lead to lower quality in the construction industry.

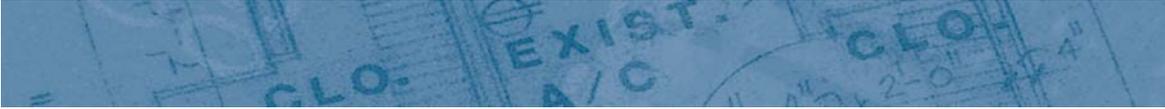
The negative impacts of recruitment problems on the industry make it important to develop policies to reduce or eliminate the recruitment problems. In this light, the identification of the separate causes of the recruitment problems is crucial as each cause requires a different policy solution.



Recruitment problems associated with artificially low wages resulting from the underground economy require an obvious policy response – reduce or eliminate the underground economy. While the importance of dealing with the underground economy is obvious, the mechanisms to do so are not. Options could include: improved enforcement of taxation instruments, changes or improvements in the Employment Insurance (EI) system to eliminate “moonlighting” in the underground economy, changes to building inspection requirements, changes to mortgage or insurance provisions by banks and insurance companies, mandatory occupational certification and mandatory licensing of construction contractors. Further research and consultations would be required to determine which of these options, or combination of options, would be most realistic and effective.

Frictional unemployment is exacerbated by seasonality in the construction industry. It follows that reductions in the degree of seasonality would also reduce frictional unemployment. Technological advances in building technology have reduced the degree of seasonality and could reduce it further in the future. Research completed by PRAXIS on Prince Edward Island and Newfoundland and Labrador indicates that seasonality may be exacerbated by the employment preferences of workers. In particular, some workers may prefer to work on a seasonal basis and draw EI for part of the year – even if full-year work is available. The research also indicates that the ability of some workers to work in the underground economy while drawing EI may increase the preference for seasonal work. In this situation, policies to change the behaviour of workers could reduce seasonality and frictional unemployment.

The efficiency of the job matching process affects the degree of frictional unemployment experienced in an industry such as construction. Inadequate recruitment practices by employers and job search practices by workers increase the time required to match workers seeking employment with employers recruiting workers. The PRAXIS survey of EI claimants indicates that 60% of unionized respondents and 26% of non-unionized EI claimants searched for work in 2002. For plumbers, 48% of unionized respondents and 30% of non-unionized EI claimants searched for work in 2002. Those who searched used multiple search methods including directly contacting employers in the industry, searching through the union, using the HRDC Job Bank and checking newspaper ads. By contrast, the vast majority of employers recruited workers by word of mouth and a minority used other methods such as the HRDC Job Bank and newspaper ads. These findings suggest that improving the recruitment practices of employers could improve the job matching process and reduce frictional unemployment.

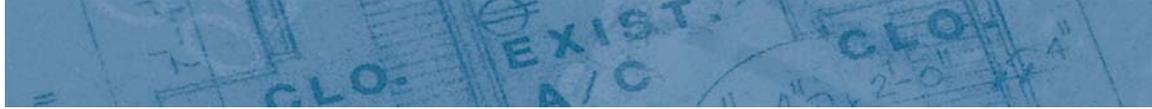


Improvements in the amount and quality of labour market information available to workers and employers also could improve job matching and reduce frictional unemployment. In so doing they could contribute to increased production and efficiency in the construction industry. Two factors must be incorporated into any program to improve labour market information. First, it must build on government programs and initiatives already underway. Second, the information must be easily accessible and fit with the actual search processes of workers and employers.

A review of apprenticeship completion rates could help to identify reasons why a significant proportion of apprentices do not complete their apprenticeship programs. Training and apprenticeship models used in other provinces and jurisdictions could help to identify innovative approaches that reduce apprenticeship dropout rates. Approaches that reduce the length of time required to become certified in a specific trades skill such as the use of short training modules should be considered in this review. Low apprenticeship completion rates for both plumbers and carpenters indicate that improvements in these rates should be given priority over increasing the intake into the apprenticeship programs.

It was noted above that factors such as negative attitudes of youth and a lack of exposure to the trades in high school have been identified as contributors to low apprenticeship enrolments and completions. Policies that address these factors could contribute to improvements in the Apprenticeship program.

Constraints on the provision of on-the-job training also contribute to skill shortages. In this context, public support and assistance for training of the existing workforce in the construction industry could help redress skills shortages experienced in the industry.



8.0 Follow-up Research

The preliminary analysis of labour shortages contained in this report could be strengthened by the following follow-up research:

- ▲ More in-depth analysis of the impact of segmentation of the trades labour market on the demand for and supply of labour and on labour shortages should be completed. This report showed that the trades labour market was segmented into union/non-union workers, by industry sector, by certification status and by a number of other factors.
- ▲ Time series data on the number of EI claims and HRSDC Job Orders for occupations other than plumbers and carpenters should be collected and compared. This comparison would provide a perspective on the relative balance of the demand for and supply of labour in each occupation.
- ▲ Consideration should be given to using multiple regression analysis to isolate the impact on individual factors on the demand and supply of labour. Factors that could be included in this analysis are specific skills and levels, educational attainment and certification status.