Ontario Construction Secretariat

Final Report

Aging Construction Workforce and Skill Shortages

Myth or Reality?

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Age Distributions, Other Trades in the Construction Industry

Executive Summary

Peartree Solutions Inc. and Prism Economics and Analysis were selected by the Ontario Construction Secretariat to prepare a report on the "Aging Construction Workforce and Skills Shortages – Myth or Reality". The report evaluates the role of demographics in the evolution of the construction labour force across the 1990s. It separates the impact of demographics from other supply side factors to reveal the distinct role each plays and to better understand the overall dynamics of the market.

Part 1 – Demographics

Part 1 of the report reviews the demographic characteristics of the entire Ontario workforce and construction alone. Age distributions taken from the 1996 Census show very similar patterns in construction and other industries. For example, the average age in construction in 1996 was 38.5, just slightly above the average of 37.8 for the entire workforce. Most large industry groups fit this common profile. Important differences only begin to appear for quite specific occupations. For example, Crane Operators lead the construction trades with an average age of 45 and Roofers are among the youngest with an average age of 33.

The Baby Boomers – born between 1947 and 1965 – form the most prominent feature in the age profiles of all industries and occupations. Boomers range in age from 35 to 53 in 2000. This large group is now dominating the workforce and its values and habits define much of Canada's economics. The smaller 15 to 24 and 25 to 34 groups are the "Baby Bust" generation, born from 1965 to 1980. This group also contains the children of the older Boomers who were just starting to enter the labour force in the late 1990s.

Within construction there are various distinctive age profiles. Some are "natural" reflections like the generally older profile for contractors and supervisors. This latter group actually contains a relatively large contingent of 25 to 34 year olds and will be crucial replacements for retiring Boomers in the period from 2005 to 2025. Another natural profile is the younger group of "helpers".

Profiles for the trades identify older, average and younger groups. Of these trades there are four with notably older age distributions – Heavy Equipment Operators, Bricklayers, Painter/Decorators and Pipefitters/Steamfitters. Perhaps the most important feature in each of these trades is the relatively small proportion of workers aged 15 to 24. This feature is crucial because it indicates these trades must rebuild their numbers while competing for recruits from the very small source population of young people.

There are a further three trade groups with a notably younger age profile including Residential and Commercial Installers, Labourers and Helpers and a broad group of "other trades". This group is dominated by trades working in tough physical conditions or groups with a large number of helpers and new entrants.

A long list of trades have age profiles that are very similar to the industry average. The age distribution of four of the largest trades – Carpenters, Electricians, Plumbers and Plasterers and Drywall Installers contain few distinctive qualities with the possible exception of a high proportion of young Electricians. It should be emphasized that these results cover the entire workforce in the trades across Ontario. Age distributions in certain specialties or locals may well be different.

There are also important differences in the age profiles of several other construction groups. One prominent case is the unionized sector where workers are about five years older than non-union workers – a significant difference. It is particularly important to note the much lower proportion of the youngest group in the unions. Over half of the non-union workforce is under 35 while two thirds of union workers are over 35.

Age profiles in other areas show fewer differences. For example, the profiles are very similar across the regions of the province. There is, however, an important distinction among self-employed and paid employees with the former having a much older profile.

Changes to the age profile through time are related to patterns of entry and exit. Available data on entry focuses on young people and immigrants entering for the first time and re-entrants returning from other industries or unemployment. The population of young people available for construction declined across the early 1990s and began to increase slowly by 1999-2000. This limited pool of recruits is an important barrier to increasing supply. Immigration followed a similar pattern with even more limited additions from this source to construction.

Entry through apprenticeship is a priority as it adds to the pool of skilled workers. A dramatic cyclical decline in registrations in the 1990s signaled a problem and recovery through 2001 is not yet complete. The age profile of entering workers and apprentices points to a large contingent of workers joining the construction workforce in their mid to late 20s. Many chose construction after working in other sectors. This pattern of entry is an important guide to recruiting strategies.

Exit patterns include temporary periods of unemployment and work in other sectors as well as permanent moves to other sectors. The ebb and flow of workers is the natural "shock absorber" that helps the labour market to adjust. Evidence suggests that these major movements of workers are almost entirely driven by the cyclical availability of work and are largely independent of demographics and other long-term factors. The appearance and resolution of shortages is largely related to these changes in specific trades and regions. Essentially, the long-term factors described above are the background that shape the general climate for the short-term change. When market conditions become volatile, the background conditions will be swamped by the more immediate shift in workers.

These entry and exit patterns create very large shifts in the size and composition of the workforce over the short term, i.e., up to three or four years. Demographic shifts are often dominated by these other dynamics. To measure the relative importance of these changes a simple model simulated the change in the construction workforce from 1996 to 2000. A "pure demographics" case was created by aging the workforce year by year starting in 1996 and allowing enough young entrants to compensate for retirement and permanent exits. The resulting age profile in 2000 captures the simple aging effects and can be compared with the actual distribution in 2000. Patterns of entry and exit during the period almost completely compensated for the aging, with the younger groups being rebuilt so that the average age of the workforce in 2000 was just slightly older than in 1996.

This analysis demonstrates the capacity for normal entry and exit patterns to compensate for demographics – even during an expansion of the industry. It also revealed a repeated pattern of "early retirement" or a tendency for the workforce age 55 and over to shrink more than simple aging would imply. This signals a potential problem for the industry as older and experienced workers will be of increasing value as the Boomers begin to retire in 2005 and beyond. Simulation of "pure demographics" on a trade by trade basis revealed specific

examples of trades where there were difficulties attracting young recruits and where "early retirement" was a particular problem.

Part 2 – Labour Force Dynamics

Part 2 of the report considers the current state of the labour market and the likelihood of labour and skill shortages. Analysis here combines the demographics and entry/exit dynamics in Part 1 with the demand for workers. It is emphasized that shortages are difficult to measure, as key market conditions (e.g., accurate measures of total compensation) are often not accurately revealed in public data.

Demand for construction workers expanded steadily from 1996 to 2001 and employment has reached record levels for many trades. By 2000 the expansion had driven unemployment down to record low levels and there was evidence of skill shortages. As a recession spread in other sectors – especially in manufacturing – in 2001 the market began to shift. Demand for construction remained high. Trades who had moved to other sectors faced tougher markets and began to return to construction. As a consequence, unemployment in many trades rose modestly in 2001 and pressure on markets eased.

These patterns are reviewed for individual trades and certain groups emerge as exceptions to the general pattern. For example, the market for supervisors and contractors has been less volatile and tighter over the entire period. Shortages here are likely and often reported by the industry.

For the "older" trades identified in Part 1, the evidence signals a priority need to build the apprenticeship programs and prepare for a growing number of retirements. With the exception of Bricklayers, these trades face record levels of demand.

The younger trades face a similar tight market with near record low unemployment. These trades include Roofers, Floor Covering Installers and Labourers and Helpers. Recruiting here is usually limited to unskilled workers who are trained on the job. Apprenticeship is becoming a priority for these trades and the analysis underlines the need to bring in more skilled workers to avoid a serious erosion of experienced workers in the mid 2000s.

Formal training is not the norm for this group and employers here face serious challenges as they recruit the next round of Roofers, Floor Covering Installers and related workers. New entrants will have no construction experience and represent safety risks. Productivity and work quality are also challenged at this point in the cycle. Initiatives are underway in these groups to improve training and certification levels and these findings highlight the potential benefits. Following established practices, however, would bring in a stream of young workers who would be given minimal training and are likely to leave for other work as soon as the economy picks up in other sectors. Demographics are not a big issue here.

Finally the report turns to a large group of "average" trades in terms of age profiles. The two largest compulsory trades – Plumbers and Electricians show a less cyclical employment over the '90s and are now well above past peak employment. This reflects their extensive roles in repair and renovation work and opportunities for more regular employment across the seasons. Furthermore, the compulsory nature of the trades requires a more regular and sustained intake of apprentices. The result is a more systematic approach to balancing supply and demand. Even so, unemployment hit very near record low levels in 2000. Both trades have seen large increases in the labour force in 2001 and this is likely attributable to qualified workers returning from other sectors to take relatively secure and high paying jobs in large institutional and heavy engineering projects.

The final two large trades – Carpenters and Heavy Equipment Operators – are typical of the structural trades. These groups are more heavily dependent on new construction and are more vulnerable to the cycles. Both trades experienced a severe and extended recession from 1990 to 1996 with job losses of 30 to 40% that lasted five to seven years. Employment levels are only now returning to past peaks and unemployment remains at or near record lows. In both these trades the majority of new entrants receive little or no formal training. Apprenticeship is an option for Carpenters and efforts are now in place to attract and train many more certified Carpenters.

While the demographics patterns of the construction trades in Ontario's regions are very similar, the labour market cycles have been very different. Eastern and Central Ontario shared the boom-bust cycle that is common to most trades. Employment peaked in 1989-1990 and bottomed out in 1995-1996. Growth in the GTA and Central region has been strong in the recovery and levels are 10% or more above the peak. The recession was severe and extended in Eastern Ontario but construction gained momentum in 1999 and 2000. Early results for 2001 show as leveling off. Construction employment in Northern Ontario has been less cyclical but there are no signs of recovery in the 1996-2001 period. A trend decline in the workforce may indicate a gradual migration of workers to jobs in the south.

Southwestern Ontario shows a distinctively different pattern again. The recession was very muted but the region had not enjoyed the boom of the late 1980s. Employment expanded during the late 1990s but the expansion has been uneven. Unemployment levels were very low in 2000 and a small bump up in the workforce in 2001 has eased markets slightly. One interesting common feature of all the Ontario markets is that unemployment has fallen to very low or record low levels. This implies a mobility of labour that equalizes market conditions. Clearly unemployment would have been even lower in the strong Central Ontario and GTA market in 2000 if workers had not moved into the area from the north. There is similar evidence of adjustments among provincial markets over the same period.

Implications drawn from these findings include:

- demographic features of the construction workforce are similar to other sectors;
- age distribution of the workforce is not associated with labour or skill shortages;
- short-term adjustments in the workforce dominant factors like age distribution;
- the large number of Baby Boomers who will retire from 2005 to 2025 is an important issue and plans are needed to replace them;
- a general target of increasing the number of certified construction workers adds to recruiting and training pressures;
- recruiting and promotion activities could be expanded to include young adults and returning workers;
- the age profile for union construction workers is much older than non-union and this presents and immediate challenge to this sector;
- there is evidence of extensive early retirement during the late 1990s and if this trend continues it could seriously reduce the supply of skilled workers;
- immigration will become an important source of recruits in the future and new federal policies will limit the number of potential immigrants by giving priority to entrants with higher education;

- immigration must be balanced with policies that encourage inter-provincial mobility so that Canadians have the first opportunity to fill jobs in construction;
- older trades have a large stake in the immigration, inter-provincial mobility and expanded apprenticeship issues; and
- younger trades need to focus on pre-apprenticeship programs and ways to attract and retain recruits.

The findings and implications reported above are sensitive to market conditions and will vary by trade. It is important for the industry to monitor changes in these background conditions and to respond with any needed changes. In particular, history suggests that there will be another recession in construction. When it comes it will dramatically alter attitudes and priorities about training, recruiting and other priorities. It will be important for the industry's leadership to anticipate this change and balance short-term realities with longer-term priorities. It is equally important to recognize that market conditions and training needs will vary by trade and region and that local groups must be provided with analysis that fits their circumstances.

It is therefore recommended that the Ontario Construction Secretariat (OCS) extend the results of this paper in two directions. First the OCS should update this analysis on a regular basis to determine whether the findings and implications need to change. Where possible, the OCS should forecast market conditions as an "early warning" system for approaching change. Secondly, the OCS should encourage individual trades and union locals to review information on age profiles, recruiting and training priorities. The methodologies and approaches used in this research can be applied consistently in each of these areas.

1. Introduction

A close review of recent commentaries on the construction workforce in Canada reveals confusion over issues like skill shortages and demographic change. It is common to hear reports of skill shortages but also possible to read contradictory views that workers are available. It is also common to hear concerns about the pending retirement of entire groups of construction workers who are now in their fifties. But the average age of construction workers in Ontario is just 39.5 – the same as other industries! This report reviews the available data and opinions and separates "myth from reality" in these areas.

These issues and the associated confusion are a concern in other industries. Managers argue that the expansion of information technology in Canada is limited by skill shortages. Manufacturers of advanced machinery, tools, molds and equipment have identified skill shortages among trades, technicians and technologists for many years. Hospital and other medical services are limited by shortages of nurses, doctors and technicians.

In truth, each participant sees a different "reality". People interpret the signals they see and often act on the basis of this partial knowledge. But their "reality" is a "myth" to others who see things differently. Like the blind men touching the elephant, the best solution is to share observations and develop a broader, common vision.

1.1 Statement of the Problem

The report starts with a series of target questions:

- Is the current age distribution of Ontario's overall workforce contributing to labour or skill shortages?
- Is the age structure of the construction workforce different from the general workforce? Will any differences have an impact of labour or skill shortages in construction?
- How has the construction labour force changed during business cycles in general and through the 1990s in particular? What impact does demographics have on these changes?
- Are there particular trades, groups or regions that have distinctive age profiles, demographic trends or other supply characteristics that signal greater or lesser risks of shortages?
- What are the implications of the answers to the above questions for supply side activities for construction trades? In particular:
  - apprenticeship and certification;
  - upgrade training;
  - immigration;
  - inter- and intra-provincial mobility;
  - patterns of compensation and taxation; and
  - union and non-union workers and employers.

1.2 Mandate for the Project

Peartree Solutions Inc. and Prism Economics and Analysis were selected by the Ontario Construction Secretariat to prepare a report on the "Aging Construction Workforce and Skills Shortages – Myth or Reality". The report, presented here, evaluates the role of demographics in the evolution of the construction labour force across the 1990s. It separates the impact of demographics from other supply side factors to reveal the distinct role each plays and to better understand the overall dynamics of the market.

This study continues the OCS's work building a common vision of construction labour markets for organized contractors and workers in Ontario's Industrial, Commercial and Institutional (ICI) sector. The report is a natural extension of earlier work on the underground economy and self-employment in construction and it complements the OCS's efforts promoting the organized construction industry and attracting young workers into the trades.

1.3 Highlights of the Findings

The observations and experiences of contractors, workers, union leaders, trainers and government officials will always be different and "one person's reality will be another's myth". The report highlights crucial differences in workforce characteristics and market conditions among trades, regions, sectors and between union and non-union groups. There will always be exceptions to general comments for "the construction industry". But all these groups share many characteristics and some general comments are possible. The report distinguishes long-term factors, of which demographics are among the more important, from short-term factors. It is very clear that construction labour markets are volatile and short-term adjustments (up to three or four years) accommodate very large shifts in demand. Demographic factors explain less than half of the short-term change. Assertions that demographics are a dominant factor for understanding construction economics are misleading.

Construction shares the same age profile as most other industries and this is dominated by the Baby Boomer generation aged 35 to 53 in 2000. This dominant group will begin retiring around 2005 and their departure will be a major social and economic reality for the following 20 years. Construction, like all other industries, must plan now for these changes. Many of the actions prompted by the cyclical recovery in the late 1990s are an appropriate starting point. Research presented here suggests other needed long-term adjustments while pointing out that distinctive conditions in each trade and sector require separate attention.

1.4 Outline of the Report

This report is divided into two parts. The first concentrates on demographics and the second considers short-term adjustment factors. Part I is divided into two sections that profile demographics for the industry and individual trades and a third section that reviews the dynamics of entry and exit. Part II is divided into two sections with the first reviewing the dynamics of the construction labour market from 1987 to 2001 and evaluating the role of demographics and other factors. The second section describes implications for the industry and individual trades for recruiting, apprenticeship, skill upgrading and other labour market strategies.

Part I – Demographics

2. Demographic Profiles – Construction and Other Industries

2.1 Introduction

This section of the report focuses on demographics or the study of the characteristics of the population including age distribution, rates of birth, death, immigration and changes in all these factors. Distinctive demographic features of the workforce in construction, specific trades and in other industries are highlighted.

Data on demographic features are available from two principle sources – the Census and the Labour Force Survey. Both are produced by Statistics Canada. The Census is a major survey of every household in Canada that is conducted every five years. The Census is the most comprehensive data set available. The Labour Force Survey is a monthly survey of Canadian households that covers about 53,000 units, including approximately 15,500 households in Ontario. Limits in sampling are partially compensated by timely data.

Each survey asks respondents to identify their age, work status, occupation and industry of employment and this is the basic information needed for this report. Ideally, statistics required for this report dig to the very core of each source as we seek out single age data for detailed occupations (e.g., how many Carpenters in the Greater Toronto Area are thirty years old?) The two sources have important weaknesses when pressed to this level of detail.

The Census has much of the detail but data is old even when first released (2001 Census data on labour force activity will not be available until the spring of 2003, making the data two years old when published). In addition people are very imprecise at identifying their occupations. For example many workers identify themselves as Carpenters but have no formal training in the trade. The sample size for the Labour Force Survey is small so that results for individual trades and regions are not statistically reliable. Much of the data is suppressed and published results are often unreliable.

Strengths and weaknesses in the data sources will have a big impact on results reported here.

The discussion of demographics begins with the description of the current age structure of the population and workforce. Results are compared for trades and industries.

2.2 The Population and Participation

Perhaps the most common reference point for demographic analysis is average ages by occupation. The best sources of these measures is the Census. Exhibit 1 sets out average averages for the entire economy, construction and detailed trades. The 1996 Census provides the most detailed results. Trades are grouped into "older", "average" and "younger" categories and this distinction is carried forward in the remainder of the report. In many ways the findings and implications are different for each group.

Exhibit 1: Ontario – Average Age by Industry and Trade (1996 Census)

	Ontario Labour Force – Construction Industry Average Age 1996	Ontario Labour Force – All Industries Average Age 1996
All Occupations	38.3	37.6
Crane Operators	45.0	43.0
Contractors and Supervisors, Trades and Related Workers	41.3	41.8
Elevator Constructors and Mechanics	41.0	40.5
Welders and Soldering Machine Operators	40.9	39.3
Bricklayers	40.4	40.6
Heavy Equipment Operators (except Crane)	40.2	40.4
Tilesetters	40.1	39.8
Truck Drivers	40.1	40.4
Heavy-Duty Equipment Mechanics	39.7	39.3
Steamfitters, Pipefitters and Sprinkler System Installers	39.6	41.3
Cement Finishers	39.2	39.9
Construction Millwrights and Industrial Mechanics (except Textile)	39.2	41.9
Ironworkers	38.8	38.7
Carpenters	38.7	39.2
Cabinetmakers	38.4	38.4
Plasterers, Drywall Installers and Finishers and Lathers	38.2	38.1
Insulators	38.0	38.5
Painters and Decorators	37.7	37.8
Electricians (except Industrial and Power System)	37.4	38.5
Plumbers	37.4	38.2
Floor Covering Installers	37.2	36.9
Drillers & Blasters - Surface Mining, Quarrying & Construction	37.2	35.0
Sheet Metal Workers	37.1	38.9
Boilermakers	36.8	40.7
Public Works Maintenance Equipment Operators	36.7	40.4
Glaziers	36.4	36.7
Refrigeration and Air Conditioning Mechanics	36.4	37.4
Water Well Drillers	36.2	36.0
Gas Fitters	35.8	36.9
Residential and Commercial Installers and Servicers	35.8	34.9
Structural Metal and Platework Fabricators and Fitters	34.8	40.5
Construction Trades Helpers and Labourers	34.4	34.6
Roofers and Shinglers	33.4	33.7
Other Trades Helpers and Labourers	31.3	30.6

The analysis will refer occasionally to the average age as a broad measure, but the more common reference point will age distribution by ten-year groups. Exhibit 2 describes the distribution of Ontario's population in 2000 in five age groups: 15 to 24, 25 to 34, 35 to 44, 45 to 54 and 55 and over. These same age groups will be used through the report. The population 15 to 64 is referred to as the "source" population as it is the pool from which the workforce is drawn.

Exhibit 2

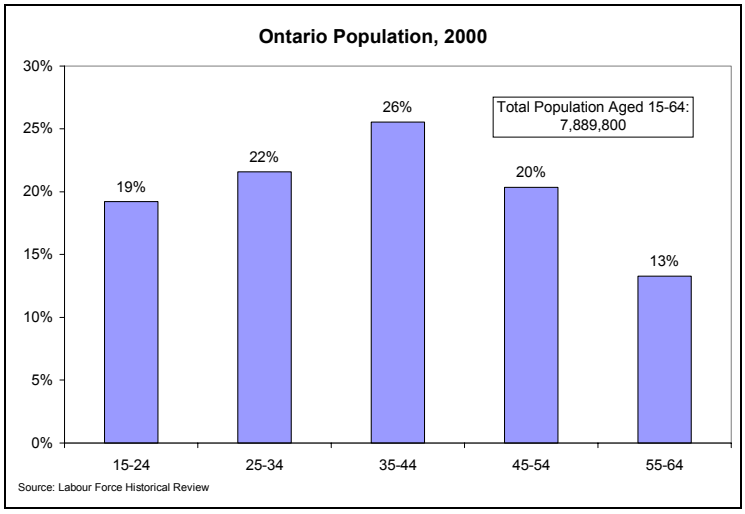


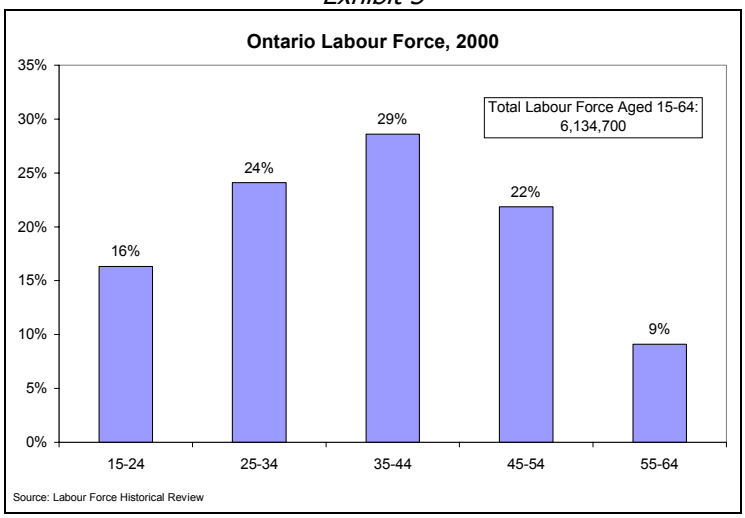
Exhibit 2 updates the information in Exhibit 1 by moving to 2000 and using the Labour Force Survey as a source. The overall age profile has shifted slightly with the average rising by around one year. The Baby Boomers – born between 1947 and 1965 – form the most prominent feature in the age profiles of all industries and occupations. Boomers range in age from 35 to 53 in 2000. This large group is now dominating the workforce and its values and habits define much of Canada's economics. The smaller 15 to 24 and 25 to 34 groups are the "Baby Bust" generation born from 1965 to 1980. This group also contains the children of the older Boomers who were just starting to enter the labour force in the late 1990s.

The older 55+ group represents the last group, raised during the Depression and World War II – a group with very distinct skills, views and work habits. These older groups are heavily influenced by European values and training as many – especially in construction – came to Canada in an immigration boom during the 1950s.

The proportion of the source population employed or looking for work is called the "participation rate". Participation is naturally lower among the younger groups who are often still in training and among the older group who may begin to limit their work or take early retirement.

Changes in the rate of participation are related to the economy. The weak markets in the 1990s, for example, encouraged many young people to stay in school and older workers to take early retirement. These changes in participation alter the age distribution of the workforce relative to the source population. During the early1990s the effect was to reduce the two younger and the oldest group. During the recovery from 1996 to 2001, participation in these groups began to recover.
Exhibit 3 shows the age distribution of the workforce – the proportion of the population who are employed or seeking work. The distribution is very similar to the entire population. But the distribution is lower at each end due to lower participation. This distribution reflects the entire labour force – all industries.

Exhibit 3



Construction and Other Industries

Exhibits 4, 5 and 6 break out separate industries – manufacturing, services and construction – from the total shown in Exhibit 3. It might be expected that these industries would have distinctive age profiles that reflect the changing career preferences of workers. In fact, the profiles are very similar. Manufacturing seems to have a distinct bulge in the 25 to 34 year group, but otherwise there is little to distinguish one from the other. Indeed, the variations shown are not large enough to be significant.

Exhibit 4

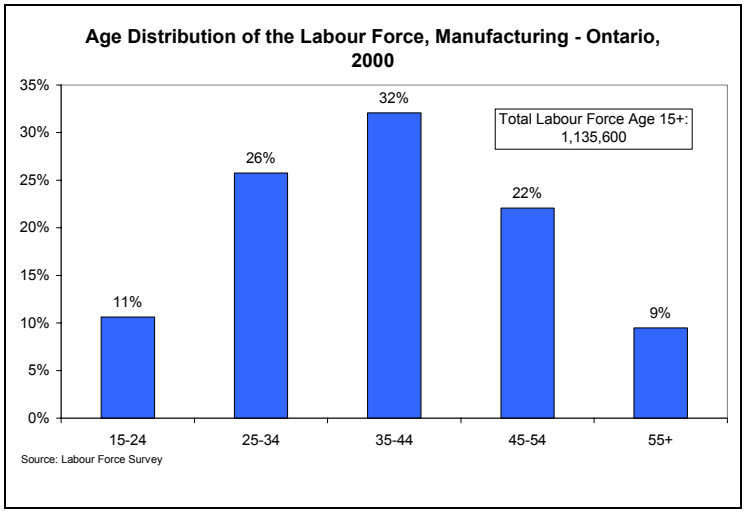


Exhibit 5

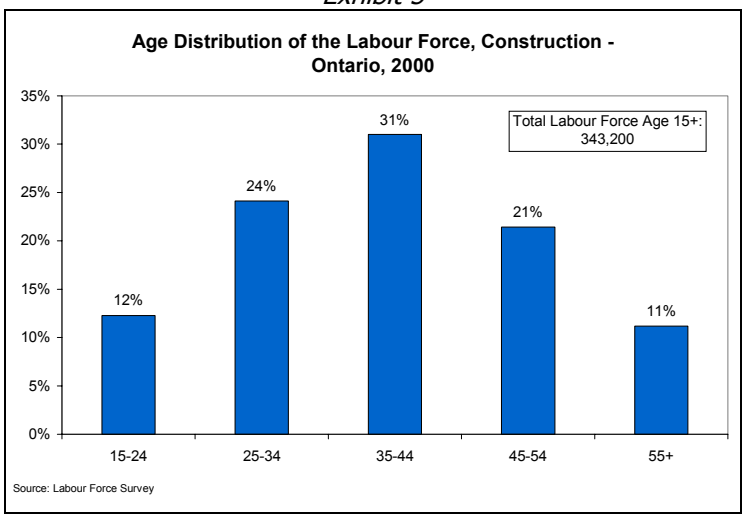
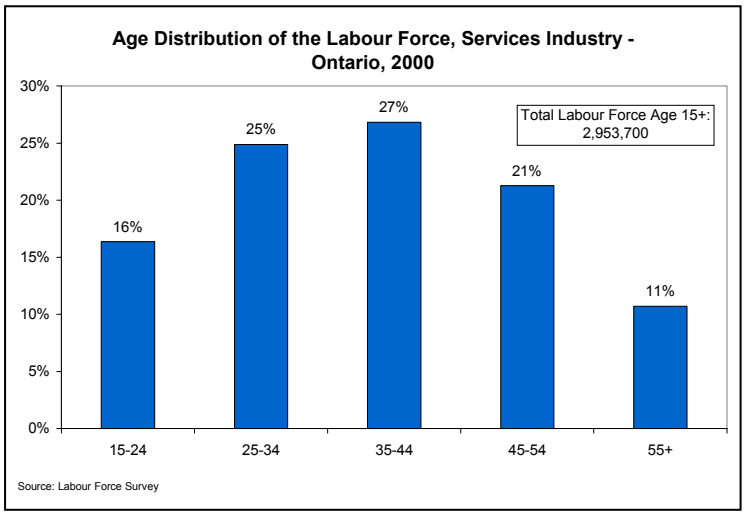


Exhibit 6



The basic demographic features for the entire population are repeated in all the major industry groups. Differences only begin to appear at finer levels of detail. In other words there is no evidence that the age distribution in construction is any different than other industries – stated otherwise the average age is just six months older. Important differences begin to appear as we move to individual trades.

2.3 Demographics in Construction: Profiles by Trade and Region (2000)

The construction workforce can be divided into three broad occupational groups: the trades, supervisors and contractors and administrative support groups like engineers, designers, estimators and other support staff. Exhibit 7 on the next page shows the distribution of these groups in 2000. Exhibit 6 above shows the age distribution of the entire group.

Exhibit 7

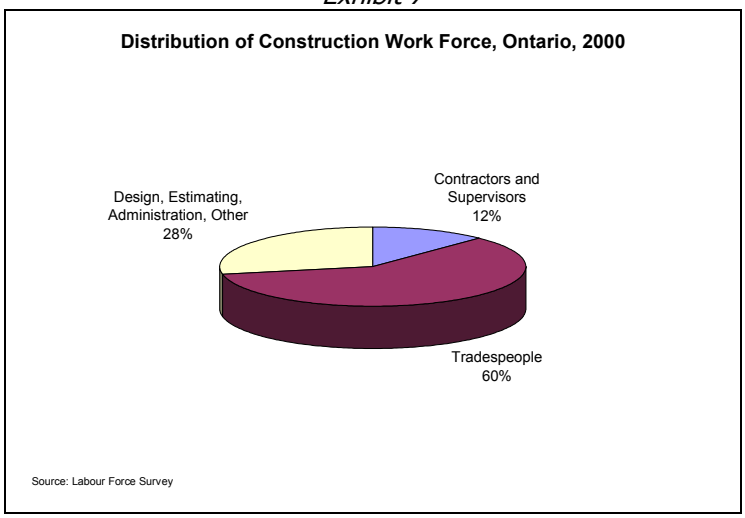


Exhibit 8 tracks the age distribution of all the trades (i.e., including all site workers) and indicates, again, that there is no significant difference for all trades from the overall industry. Exhibit 9 tracks the age distribution for supervisors and contractors and reveals a natural distinction with this group being older than the overall workforce. It is interesting to note that the 25 to 34 age group is well represented among the supervisors and contractors. This suggests that there is an important group of younger managers active in the industry.

Exhibit 8

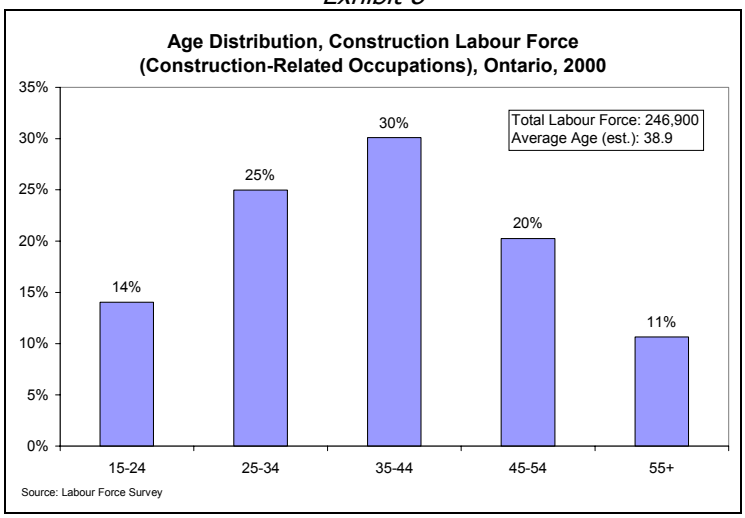
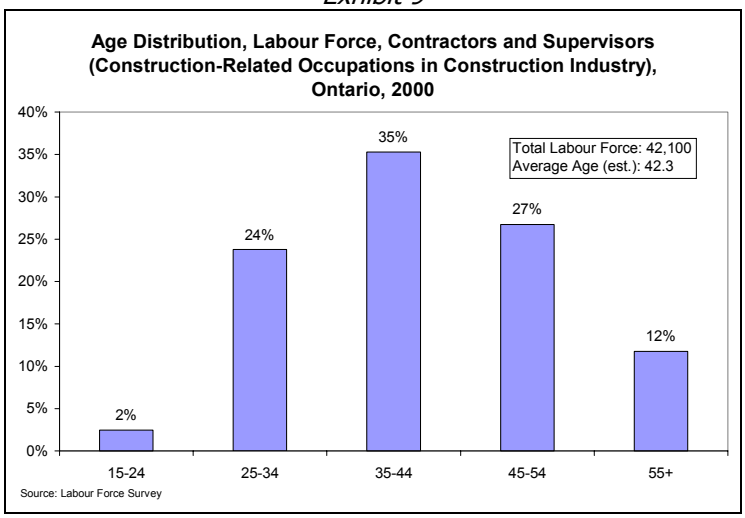


Exhibit 9



Between 1996 and 2000 the average age of the overall workforce had increased by one year but by slightly less in construction.

The Older Trades

Reliable data is available for the age distribution for 13 trade groups in Ontario from the Labour Force Survey in 2000. In some cases, further insight can be gained by referring to the 1996 Census and national data where the sample is larger and age distributions are available for more detailed groups. In these cases it is possible to identify more distinct age profiles in Ontario from these national results.

Of these trades, there are four with notably older age distributions – Heavy Equipment Operators, Bricklayers, Painter/Decorators and Pipefitters/Steamfitters. These are highlighted in Exhibits 10, 11, 12 and 13. Perhaps the most important feature in each trade is the relatively small proportion of workers age 15 to 24. This feature is crucial because it indicates these trades must rebuild their numbers while competing for recruits from the very small source population of young people.

Exhibit 10

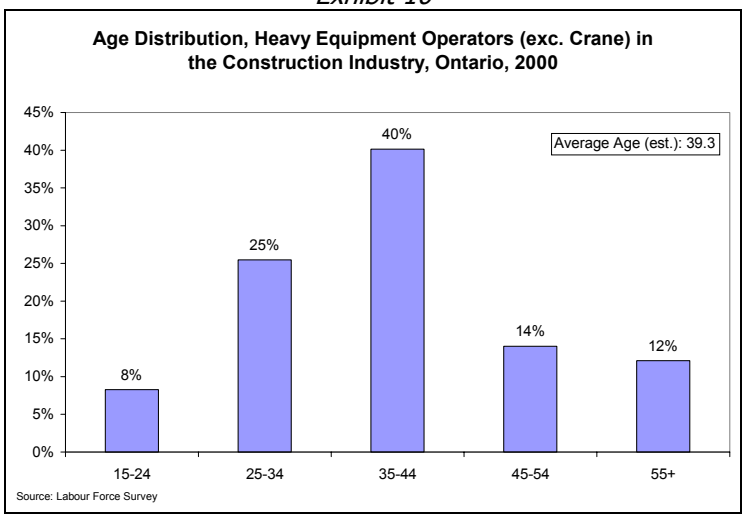


Exhibit 11

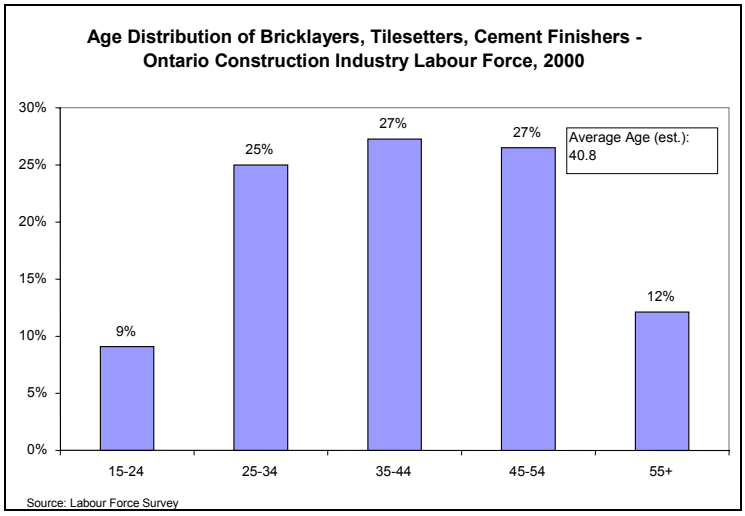


Exhibit 12

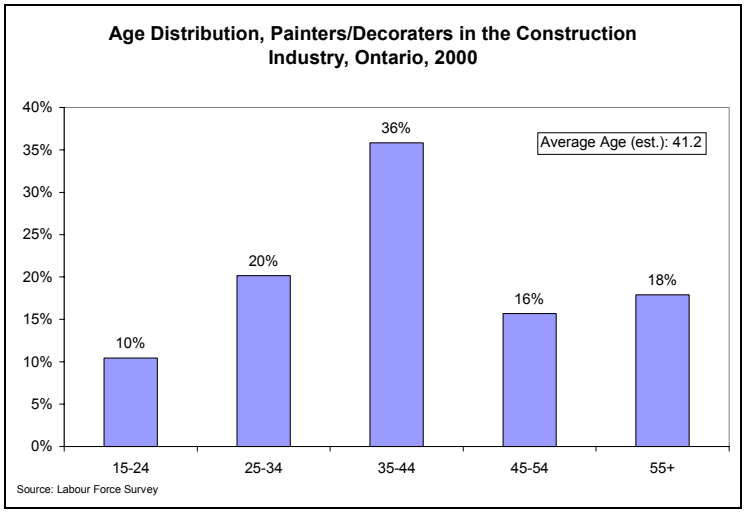
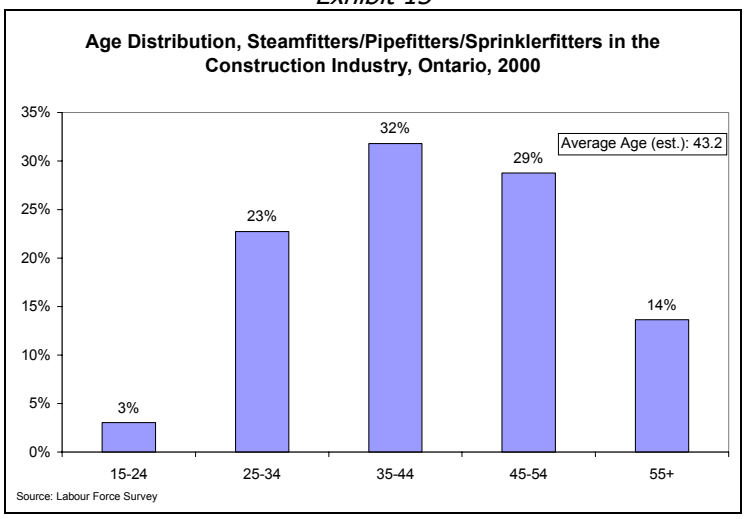


Exhibit 13



More detailed national data for the second group reveals that the older workers are concentrated among the Bricklayers – the largest individual trade in that group. The steamfitter/pipefitter group stands out among the older trades, but many of the mechanical trades qualify. For example, welders in construction are among the oldest occupations. By contrast, the profile for Plumbers is close to the average for all trades. There is also strong evidence from several sources that crane operators are among the oldest trades.

The Younger Trades

There are a further three trade groups with a notably younger age profile including Residential and Commercial Installers, Labourers and Helpers and a broad group of "other trades". This group is dominated by trades with tough physical demands or groups with a large number of helpers and new entrants.

Exhibit 14

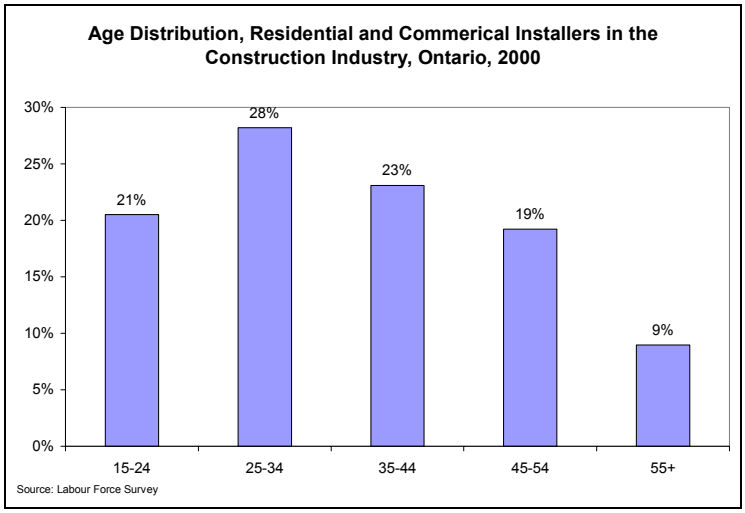


Exhibit 15

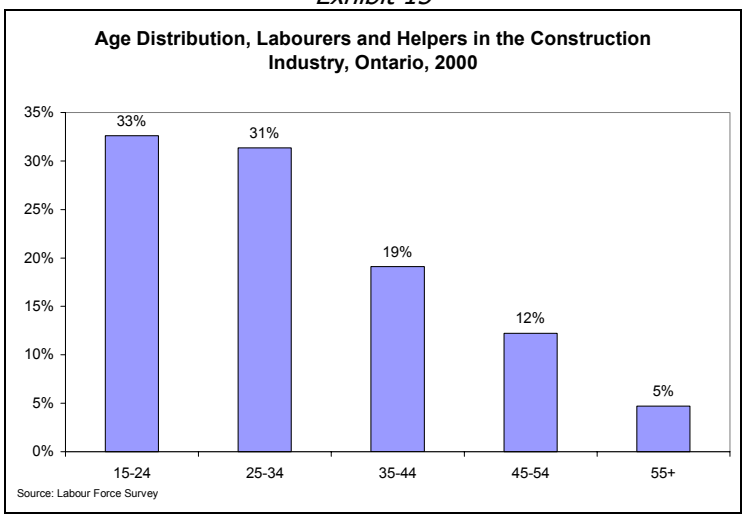
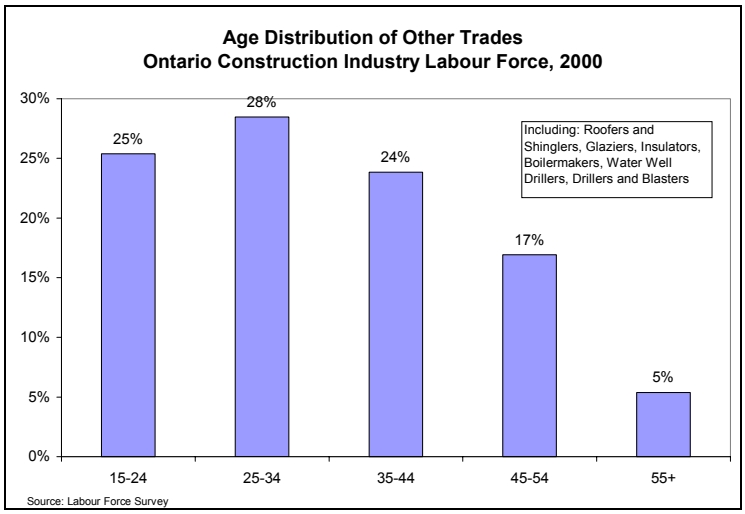


Exhibit 16



More detailed national data identifies Floor Covering Installers as a major contributor to the young profile of the first group. The second group is a large and varied collection of unspecified new entrants and many are likely to move into specific trades as they gain construction experience. Similarly, the final "other" category is broad – but it is clear that steep slope roofers and shinglers form a major group of younger people in this area.

Average Groups

A long list of trades have age profiles that are very similar to all trades combined. The age distribution of four of the largest trades – Carpenters, Electricians, Plumbers and Plasterers and Drywall Installers – are tracked in Exhibits 17 through 20. It should be emphasized that these results cover the entire workforce in the trade across Ontario. Age distributions in certain specialties or locals may well be different.

Exhibit 17

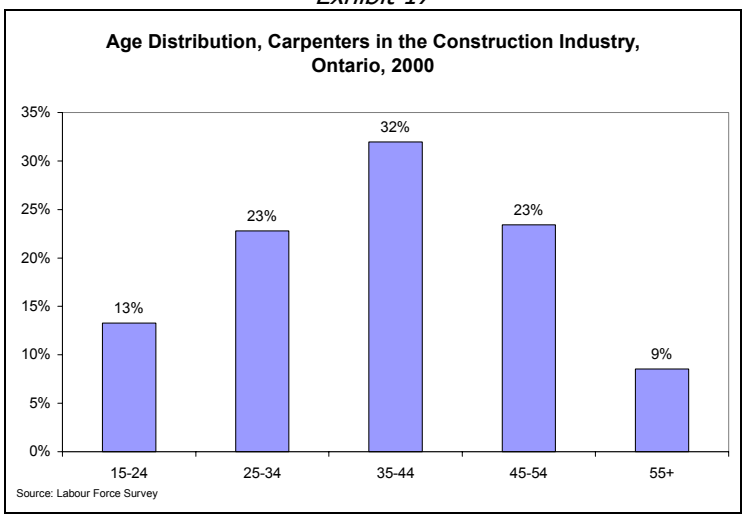


Exhibit 18

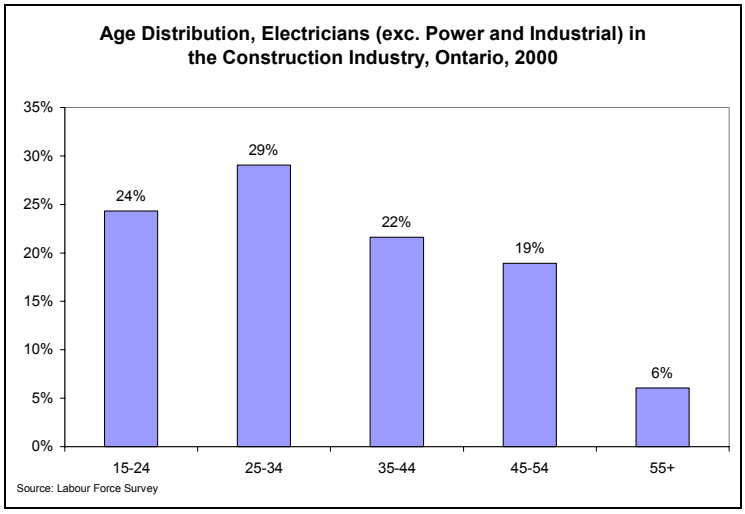


Exhibit 19

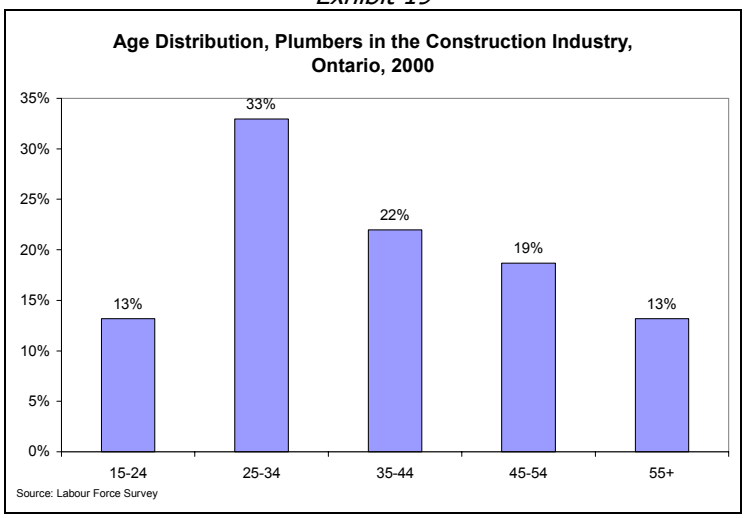
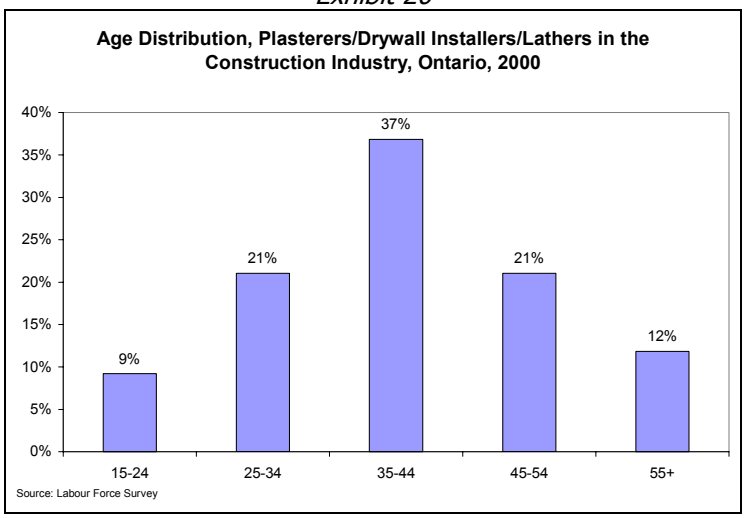
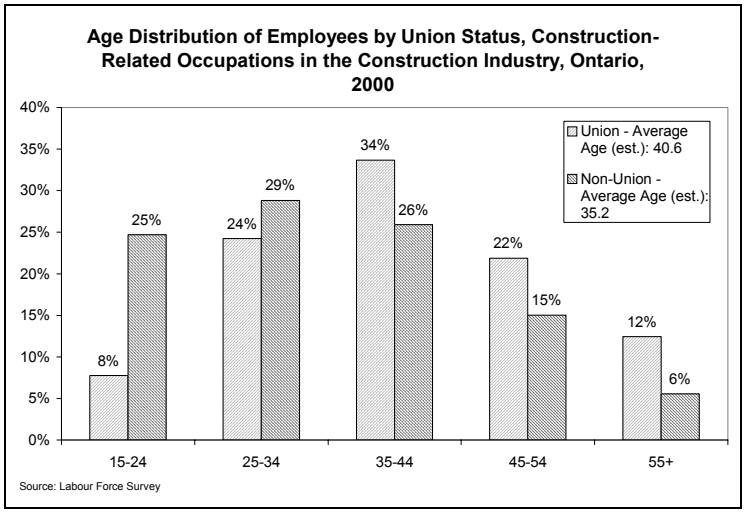


Exhibit 20



There are also important differences in the age profiles of several other construction groups. One prominent case is the unionized sector. The Labour Force Survey identifies unionized employees and Exhibit 21 tracks the age distribution of each. Unionized employees are about five years older than non-union workers – a significant difference. It is particularly important to note the much lower proportion of the youngest group in the unions. Over half of the non-union workforce is under 35 while two-thirds of the union workers are over 35.

Exhibit 21

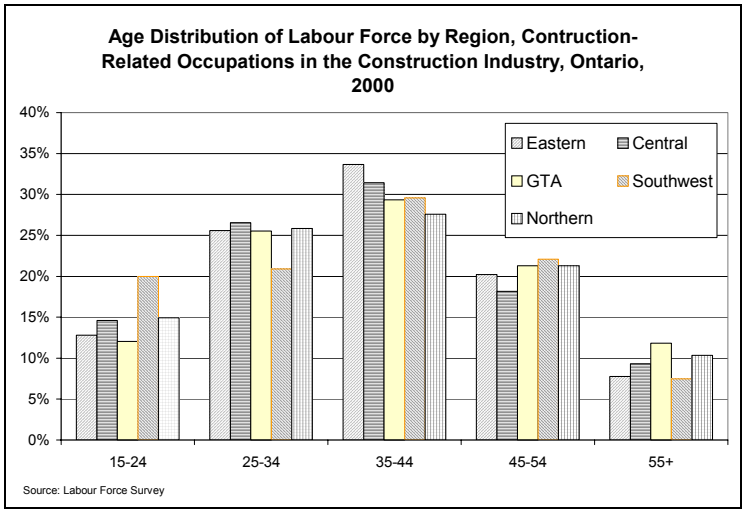


Another interesting distinction is between Self-employed and Paid Workers. Exhibit 22 measures the age distribution for each and highlights the older age of the self-employed.

Exhibit 22

The age distribution of construction workers in regions across the province are very similar. There is perhaps a tendency for the workforce to be older in the GTA and younger in Southwestern Ontario. The differences are not large enough to be significant or to signal distinct problems.

Exhibit 23



Where age distributions are distinctly different (e.g., among unionized workers, for specific trades) the findings reported in this section do highlight likely problems. If demand for these trades tracks the overall trend in construction, there will be chronic shortages as the older groups begin to retire in 2005 and beyond. This does not appear to be a large general problem for the construction industry as a whole, but it could be very important for specific union locals and employers.

3. Tracking Changes in the Workforce (1996 – 2001)

Results reported in the section above were confined to a snapshot from 2000. It is equally important to review how the workforce is changing through time. This section will trace the shifts in the age distribution of the workforce across the 1990s and identify the key aspects of entry and exit. The interplay of these effects helps to describe the relationship between shortages and demographics.

3.1 Entry

There are two broad categories of entrants – new and re-entrants. These movements are motivated by the natural career progressions of workers as well as business cycles. One traditional source is the pool of young people moving out of school and into the labour force. Exhibits 24 and 25 report the gradual decline and recovery of Ontario's workforce aged 15 to 24 across the 1990s. The severe decline from 1990 to 1997 was due to the overall demographic feature of the very small Baby Bust generation arriving in the workforce for the first time, combined with the discouraging effects of the weak economy on participation. By the late 1990s these factors began to reverse as the economy improved and children of the Boomers began to look for work.

Exhibit 24

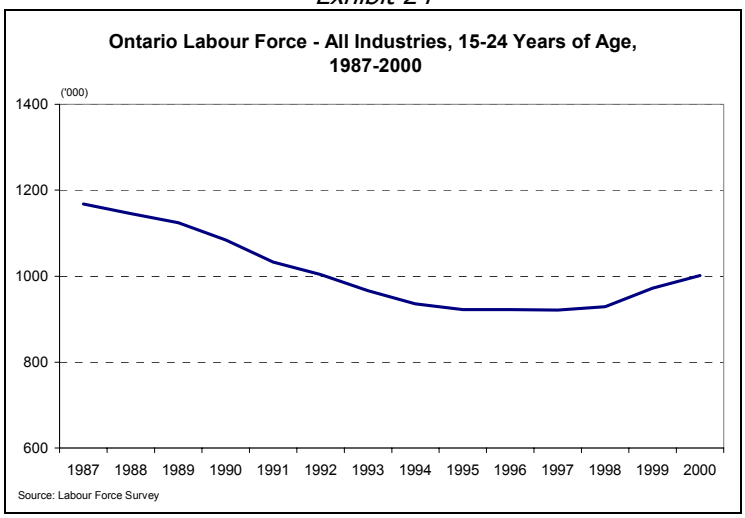
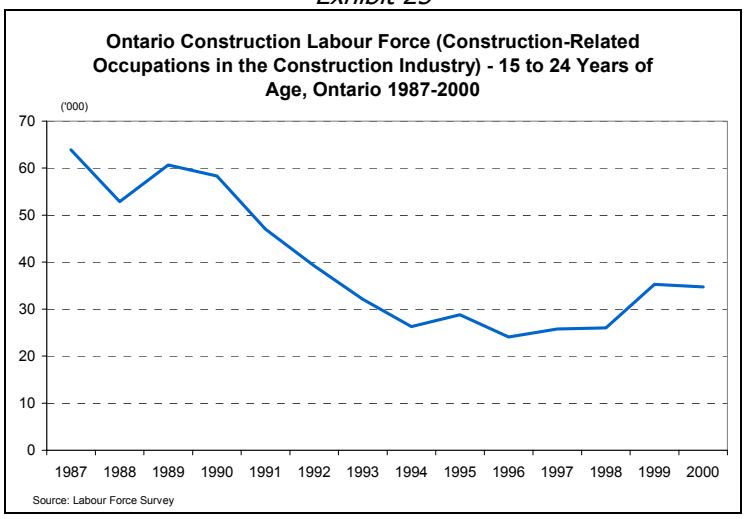


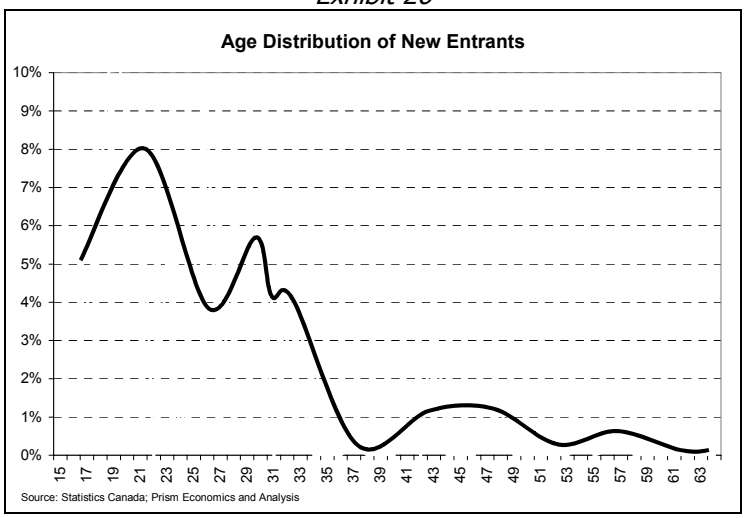
Exhibit 25



The younger workforce in construction was particularly hard hit by the recession and the recovery has been weaker than in other sectors. Construction groups have risen to the challenge of attracting back young people. Many programs, including the efforts of the Ontario Construction Secretariat, have been launched targeting the schools and graduating students and these can be expected to rebuild the ranks of the young.

Clearly the new ranks of young people are just one source of construction worker. Exhibit 26 below shows the age distribution of workers entering construction each year. These entry profiles capture a key feature – that most workers enter construction once they are well into their 20s. This is particularly true of entering apprentices, new union members and the self-employed. This evidence suggests that construction is a second career choice for many who spend their initial working years in other occupations.

Exhibit 26



One implication of this finding is that attracting more first time entrants is not equivalent to raising the proportion of the workforce at the youngest age group – 15 to 24. It will also be important to fill in the ranks of the 25 to 34 year olds.

Immigration

Immigration is another traditional source of new construction workers. This source was dominant from the 1950s to the 1970s but has diminished since that time. A slight revival is

apparent in the early stages of the recovery in 1996. Several groups across Canada have begun new initiatives to bring in construction workers from other countries, but these efforts are controversial. Critics argue that efforts must be made first to fill available jobs with Canadian workers. Indeed, inter-provincial migration is a natural alternative. Efforts to improve this mobility through national training standards are advancing on many fronts.

Exhibit 27

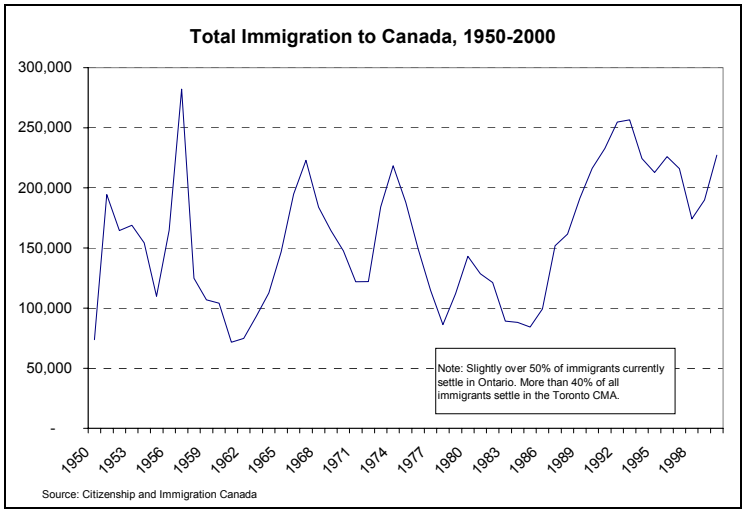
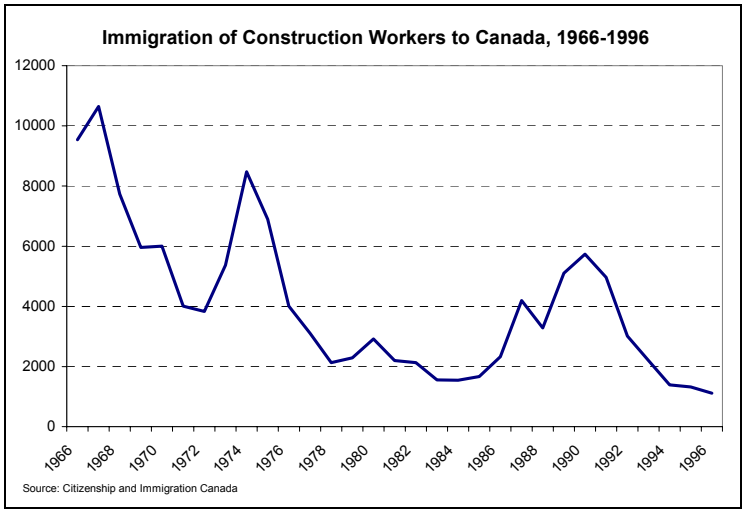


Exhibit 28



A priority for managing the construction workforce will be balancing the addition of immigrant based entrants with opportunities for trades from other provinces. This effort is a natural companion of plans for national training standards and other methods to encourage inter-provincial migration.

Apprenticeship

Apprenticeship or pre-apprenticeship is often the preferred entry path for construction trades. Indeed, for the compulsory trades (e.g., Electricians, Plumbers, Pipe and Gasfitters, Sheet Metal Workers) virtually all workers must start with apprenticeship. But for the majority of trades, apprenticeship is voluntary and the majority of workers enter directly to employment and on-the-job training.

Qualifications required for work in construction have been rising in much the same manner as other industries and occupations. Thus the proportion of the construction labour force with

post-secondary training has been rising over the long-term. This trend, while it was interrupted in the 1990s, points to a needed emphasis on apprenticeship to build the workforce.

Exhibit 29

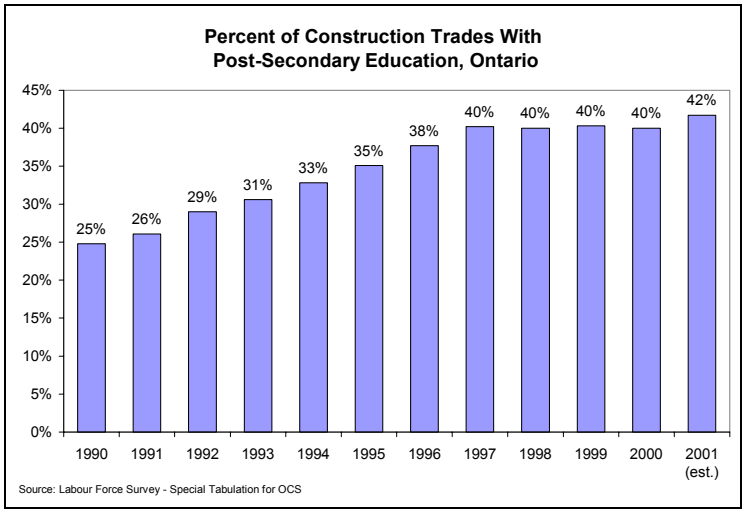
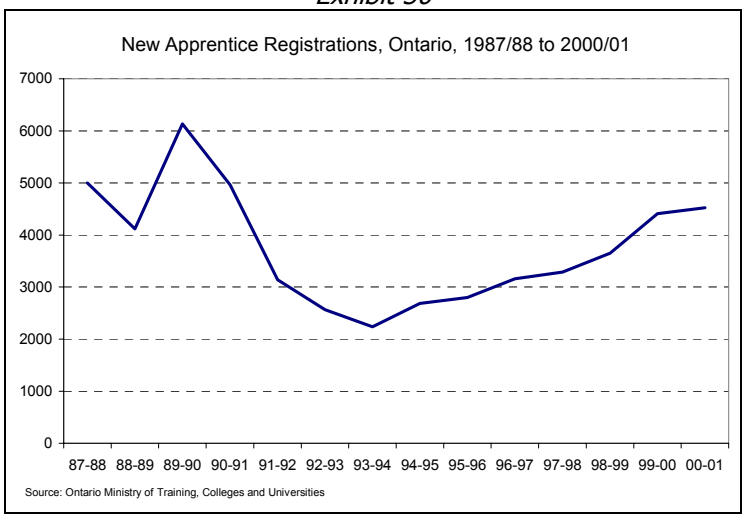


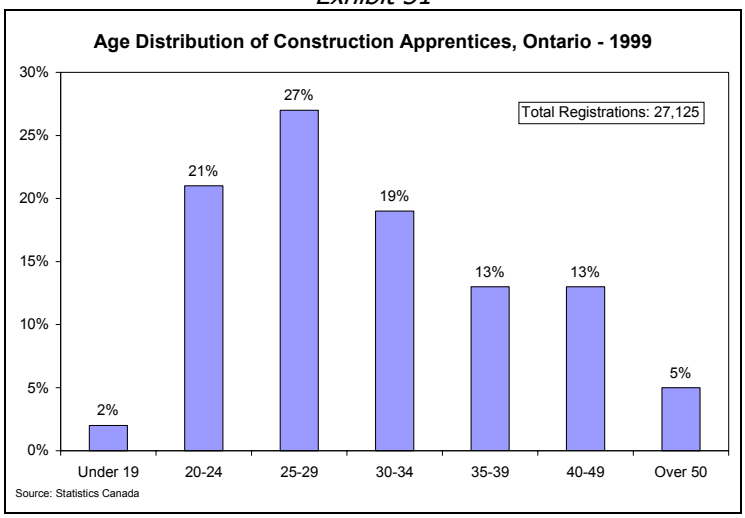
Exhibit 30 tracks the registration of construction apprentices in Ontario from 1987-1988 to 2000-2001. The impact of the recession is clear with registrations dropping to a minimum in 1996. Improvements since that time are impressive, but levels have not yet been restored to past peaks. Further increases are needed to build the system and prepare the workers needed to replace the retiring Boomers in 2005 and beyond.

Exhibit 30



The age distribution of apprentices, reported in Exhibit 31 is particularly revealing. The average age is near 30 and evidence clearly signals that most new apprentices do not enter from high school but after other work experience – perhaps a period of work as a construction helper.

Exhibit 31



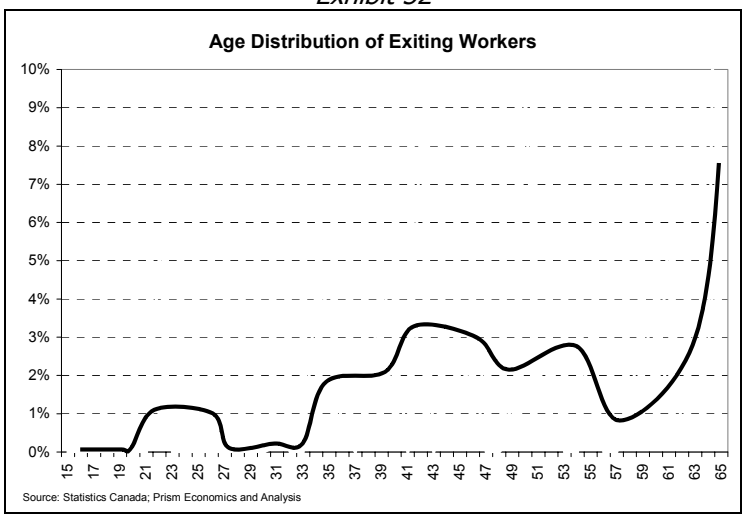
Reviewing the evidence for these three basic points of entry into construction – new workers, immigration and apprentices, it is clear that several different strategies are possible and may be complementary. Thus current efforts to attract high school students into pre-apprenticeship and apprenticeship programs can be expanded to attract young adults into apprenticeship from other occupations and from underemployment. Similarly new immigrants entering construction can be balanced by more inter-provincial migration. Indeed each of these strategies must be trade specific. Immigration is a more natural route for certain trades and regions that have traditionally been associated with particular ethnic groups. Other trades have drawn more from Canadian sources. Each of these approaches can be linked to the design and extension of apprenticeship.

3.2 Exit

The exit equivalents to entry discussed above are retirement, emigration and temporary or permanent exit to other work or unemployment. Exhibit 32 tracks the age distribution of workers leaving construction. These departures follow a natural pattern of rising as the workers grow older. There are interesting bulges in the graph around the early 20's and 40's that may correspond to workers reaching a stage in their careers when construction is abandoned for other work.

The overall level of the graph will rise and fall with the cycle such that a larger proportion of all workers will leave during a downturn and fewer depart during a boom. Permanent departures are more apparent at the older ages. In fact, the evidence presented here and confirmed in other sources shows that workers exit in their late 50's and early 60's.

Exhibit 32



Retirement

Patterns of formal retirement are hard to measure for most of the construction work. The most convincing signal of retirement is when workers accept pension benefits. Relatively few construction workers have formal pension plans and some of those with plans have the option of returning for limited amounts of work.

Workers exiting from the construction trades in the late 50's are unlikely, however, to return. Some anecdotes of returning workers during the late 1990s and 2000 seem to confirm their reluctance to take on full workloads. Indeed, evidence presented below suggests that the opposite – early retirement – is more likely.

More attention will soon be focused on the work patterns and interests of construction workers approaching their late 50's. This growing group will be seen as a valued pool of experience to help with temporary needs and to train and mentor new workers.

Temporary Exit

The most immediate short-term adjustments take place as workers move in and out of unemployment and into other areas of work. This flow is far larger than any of the earlier methods of entry.

The ebb and flow of workers is the natural "shock absorber" that helps the labour market to adjust. Evidence suggests that these major movements of workers are almost entirely driven by the cyclical availability of work and are largely independent of demographics and other long-term factors. The appearance and resolution of shortages is largely related to these changes in specific trades and regions. Essentially, the long-term factors described above are the background that shape the general climate for the short-term change. When market conditions become volatile, the background conditions will be swamped by the more immediate shift in workers. Section 5 focuses on these larger and more immediate changes in the market.

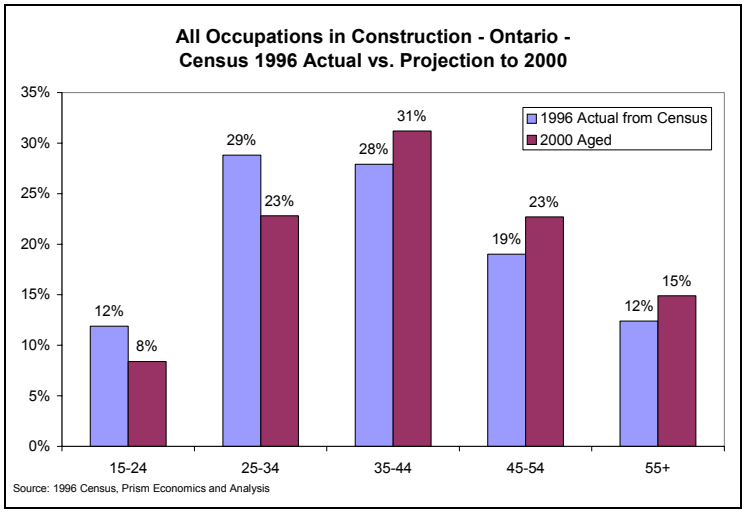
3.3 Implications for "Pure Demographics"

This section considers the impact of the entry and exit patterns described above on the demographic profiles described in Section 2. The intention is to compare the actual evolution of the age structure of the workforce with the effects of "pure demographics". The latter effect is simply aging the workforce year by year.

The comparison is made over the last half of the 1990s – beginning with the 1996 age distribution of the workforce by trade and then simulating changes through to 2000. These dates are chosen to start with the information contained in the 1996 census and to capture the effects of the economic recovery through to 2000.

Exhibit 33 provides that broadest measure of the effect of "pure demographics". The age distribution of all construction trades is shown in 1996 and again in 2000. The distribution in 2000 has been simulated by simply aging the overall workforce year by year and allowing enough young workers to enter to offset retirements. The distribution in 2000 then indicates the impact of pure aging without taking account of all the other entry and exit factors.

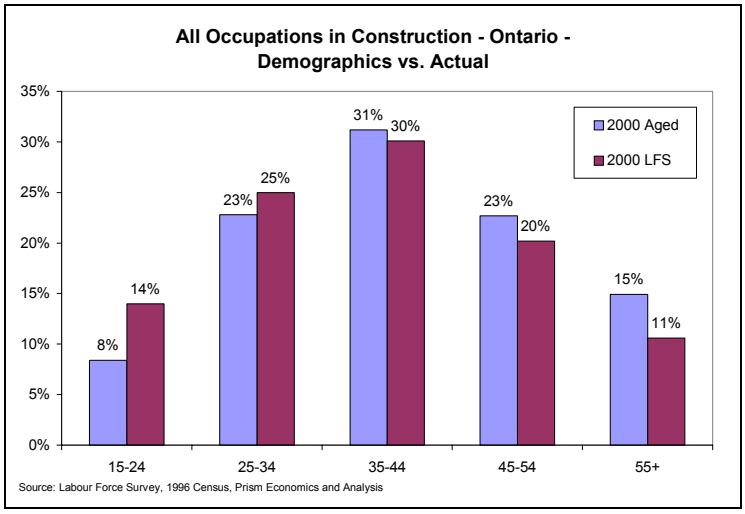
Exhibit 33



The "aging" of the workforce is readily apparent as the proportion of the older groups rises and the younger groups decline. This natural progression is the simplest interpretation of concerns about demographics and, if continued into the next ten years would signal a large decline in the workforce.

The "pure demographics" image in Exhibit 33, however, is only part of the dynamics in the late 1990s. Exhibit 34 compares the actual age distribution of the same group in 2000 with the predicted age profile using pure demographics.

Exhibit 34



It can be seen that forces other than demographics have intervened to offset the pure demographics. The industry has been able to fill in the ranks of the younger groups and the overall workforce actually increased by 40,000. This result is consistent with the general finding that the average age of construction workers has not risen dramatically over the 1990s and is not significantly above other industries.

Analysis of this type reveals some interesting implications. For example, notice in Exhibit 33 that the labour force aged 55 and over is actually lower than the pure demographics prediction. This result is repeated for most trades and suggests that more, older workers left the trades than predicted by simple aging! This loss seems most likely due to early retirement. Indeed various incentives were apparent in the late 1990s to encourage this, including strong performance by pension funds and associated benefits.

Clearly, the emerging age structure of the workforce threatens to erode the numbers of skilled workers through retirement and this pattern of early retirement, if it continues, will greatly aggravate the problem. It is proposed that this simulation analysis of pure demographics can be extended into the future, trade by trade, to reveal more of this sort of implication.

Exhibits 35, 36 and 37 review the "pure demographics" for the older trades identified in Section 2. Changes in the age distribution for Heavy Equipment Operators are shown in Exhibit 35. Recruiting younger people into the trade clearly sustained the two youngest groups at 1996 levels. There is also a suggestion of a serious "early retirement" problem. Results for Bricklayers and related trades, in Exhibit 36, show a similar pattern with even more success at attracting young adults aged 25 to 34. The third trade, Steam/Pipefitters in Exhibit 37, show less success attracting young people and a serious early retirement problem that implies a significant rise in the average age.

Exhibit 35

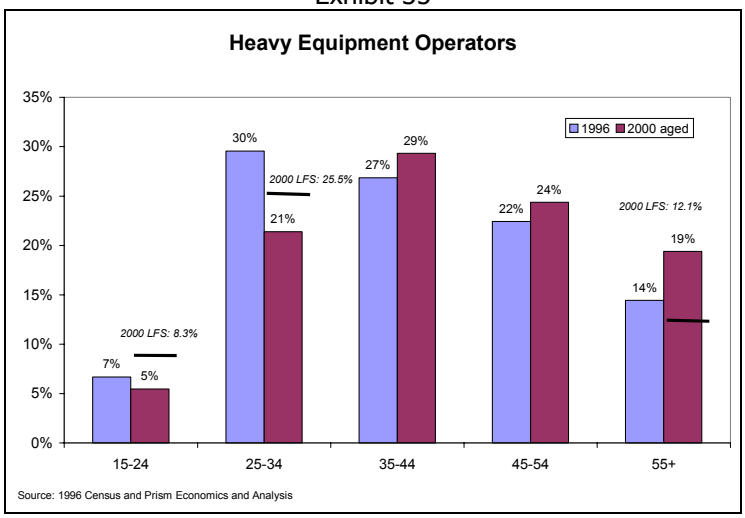


Exhibit 36

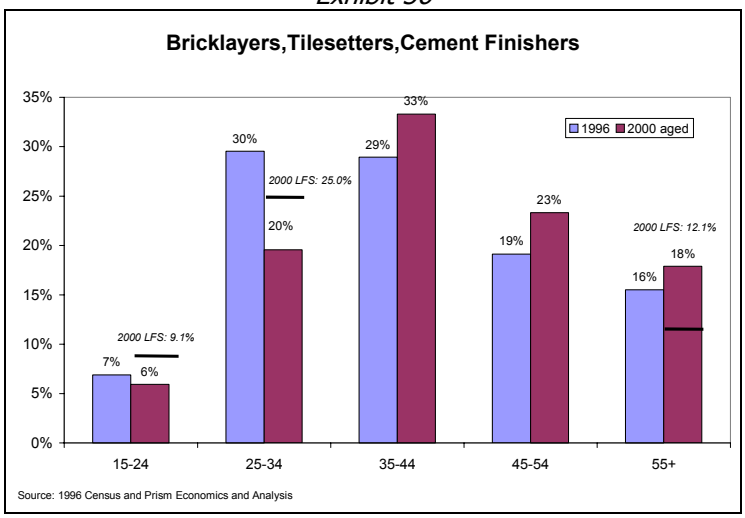
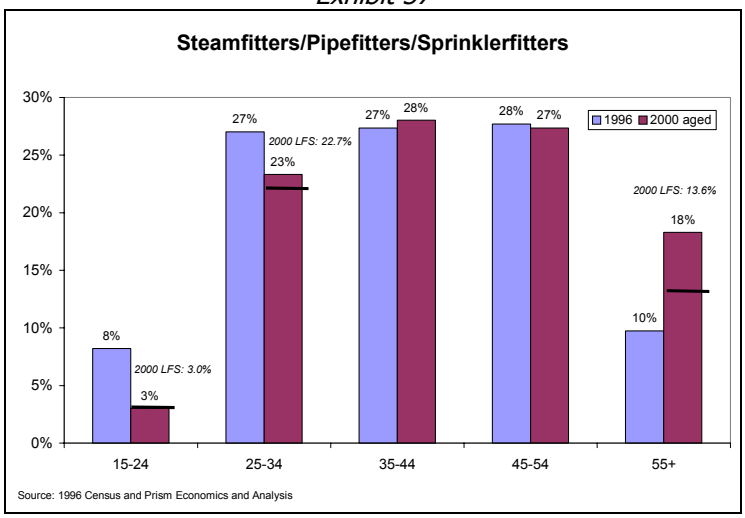


Exhibit 37



Exhibits 38 and 39 report equivalent results for two of the younger trades. Floor Covering Installers in Exhibit 38, managed a significant gain in younger members while experiencing many early retirements. The same pattern is apparent for Labourers and Helpers in Exhibit 39. Overall the impression is that these trades were coping well with recruiting young people in the late 1990s.

Exhibit 38

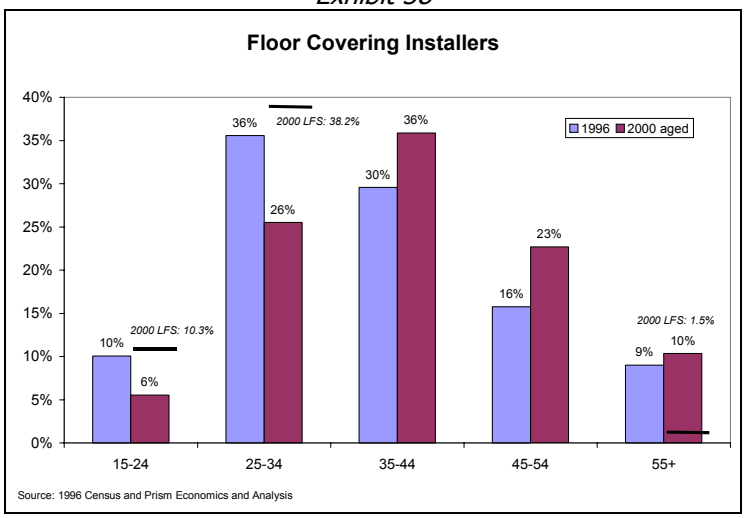
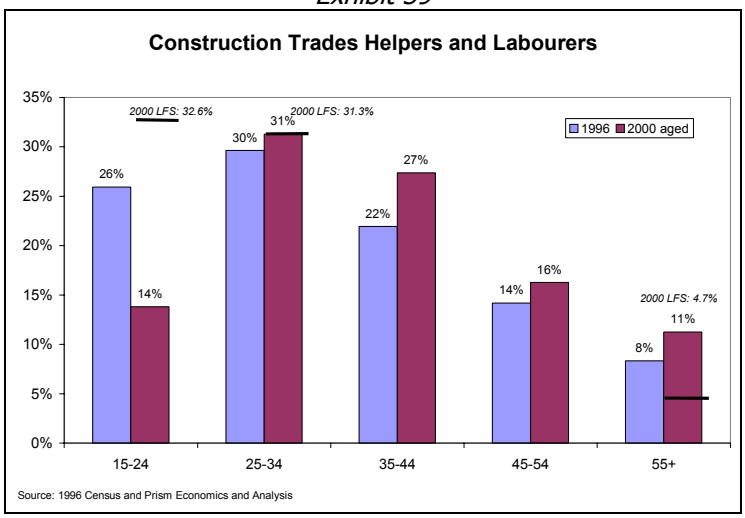


Exhibit 39



Finally, Exhibits 40, 41 and 42 review the same patterns for three large trades with age distributions close to the industry average. The results for Plumbers, shown in Exhibit 40, is similar to others except that there is little evidence of the early retirement problem. Plasterers, Drywall and Lathers, shown in Exhibit 41 and Carpenters shown in Exhibit 42, show the same pattern as the overall industry.

Exhibit 40

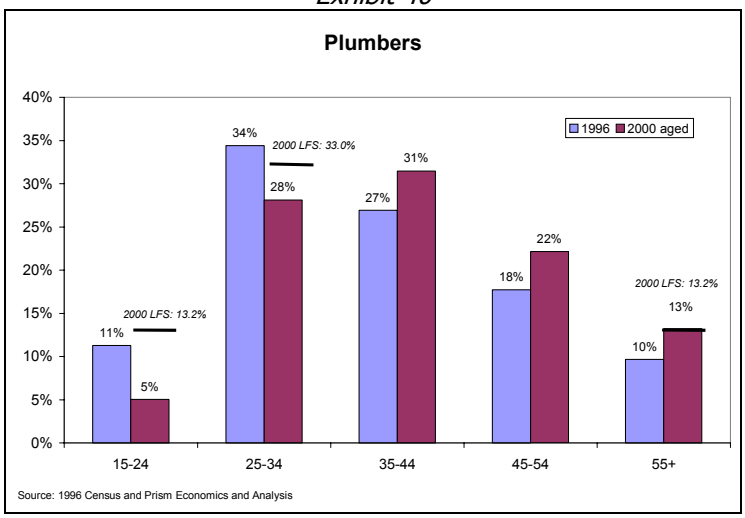


Exhibit 41

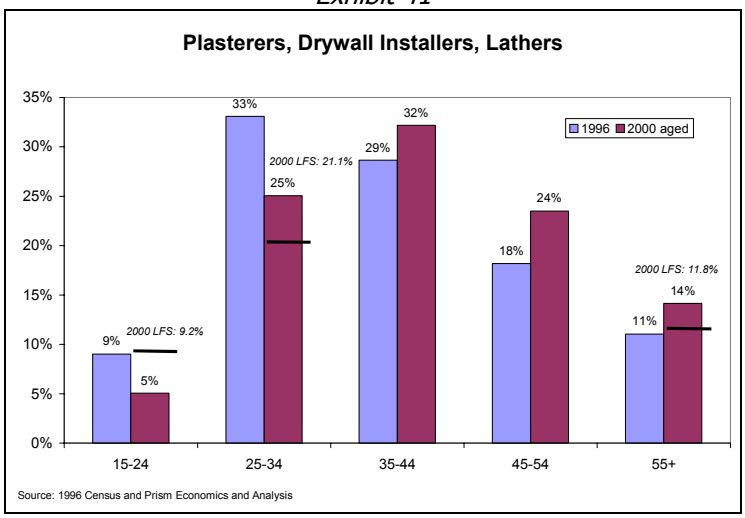
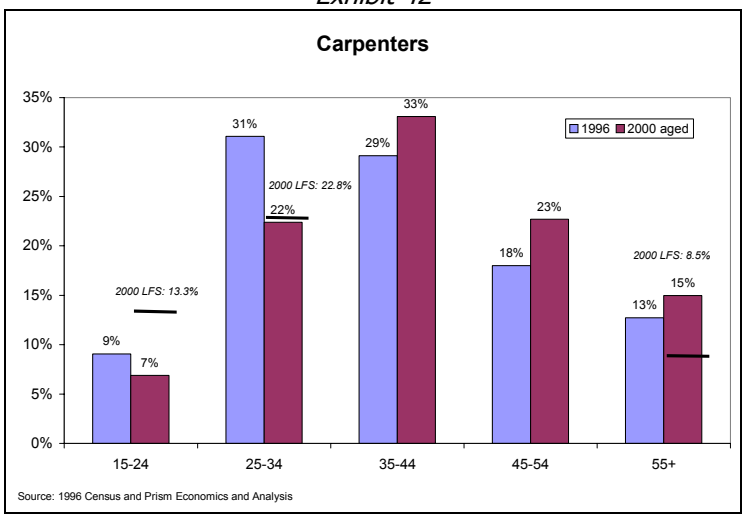


Exhibit 42



It should be emphasized that results for individual trades are vulnerable to serious measurement problems and detailed implications by age groups are not very reliable. Where the broad conclusions fit with anecdotal views and separate data sources, it seems appropriate to plan accordingly.

In conclusion, the construction workforce adjusted well across the late 1990s to the impacts of the aging of the Baby Boomers. Young workers entered the trades in sufficient numbers to fill in the ranks and keep the average age down. This was accomplished in the face of a dwindling population of young people overall and the strong attraction of alternative occupations like information technology. There is, however, evidence that the loss of older and more skilled workers was actually accelerated by early retirements. This pattern was repeated across most trades even when there were large differences in age distributions at the start of the period.

This analysis then tells us that the natural and very large movement of workers in and out of construction has the capacity to cushion the industry to demographic trends. Demographics is not a dominant force in the short term.

This result, however, does not relieve the industry of responsibility for planning for the future. The major impact of the retirement of the Baby Boomers is still in the future and will test the ability of the industry to adjust when it peaks about ten years from now.

Part II - Labour Force Dynamics

4. Market Conditions and Shortages (2001)

This section moves away from demographics and considers the full variability and dynamics of construction labour markets. This broader view combines demand and supply conditions and considers how these forces interact. Movement of workers across employers, sectors, industries, regions and provinces and work conditions all signal market adjustments. These shifts are the essential adjustment process and they determine surpluses, shortages, compensation and other market outcomes.

Many of these outcomes – in particular shortages and compensation – are almost impossible to observe and measure. Employers and workers often conceal these outcomes and their interpretations for competitive reasons. This places a burden on the analysis to interpret available measures with caution.

The following sections review current conditions and search for signals of labour or skill shortages.

Labour shortages refers to a limited availability of able-bodied persons seeking work. These conditions are rare in construction where much of the work can be done by low skilled workers with on-the-job supervision. Labour shortages emerge when the unemployment rate for the overall economy is very low. There were labour shortages in U.S. and some Canadian markets in 2000. Skill shortages refers to the limited availability of skilled and trained workers needed for very specific tasks. These are more common, especially in the compulsory trades where less skilled workers can't do the job. Skill shortages are usually associated with bottlenecks or limits to training.

There were skill shortages in 2000 in quite specific areas like pressure welding with particular types of tickets, gasfitting, and crane and grader operations. Even when projects were being delayed because of these shortages in some areas, some leaders argued that there was no shortage in the pipe trades or among equipment operators.

Labour markets were tight and shortages were emerging in late 1999 – but only the closest review of the market would have revealed this. Broadly based and consistent measures to signal skill shortages in construction are not available. Our most important monitor – the Statistics Canada Labour Force Survey – does not provide sufficient coverage in many cases.

4.1 Labour Market Dynamics

Shortages appear in two situations. Demand-driven shortages occur where there are record levels of jobs and hours in specific trades and where the available labour force cannot meet the demand. Pressure welding and crane operation would be an example of this situation. In a demand-driven shortage, the problem is that the growth of demand has outstripped the growth of supply. Supply-driven shortages occur when workers leave the trade and won't return, creating a limited supply even when jobs and hours are below past peak levels. Bricklaying is an example of this situation. Both situations leave a minimal pool of workers available during peak seasons. Supply-driven shortages can arise even when demand is sluggish, but the supply of skilled labour has contracted relative to the level of demand.

Demand-driven shortages are more severe, as the only real solution is recruiting and training the needed workers.

Here are some of the measures that signal shortages:

- very low unemployment rates for specific trades in several local markets simultaneously;
- workers moving to higher-paying sectors and projects, leaving delays in lower paying areas like residential renovation;
- large projects that require specialized labour;
- increases in compensation – especially overtime, travel allowances and bonuses; and
- limited growth or contraction in self-employment and the underground economy.

The next two sections briefly review Ontario's construction labour market looking at both the demand and supply side. Selected indicators signal different conditions for some trades. In the last section these more short-term results are compared to the demographics and longer-term considerations in Part I.

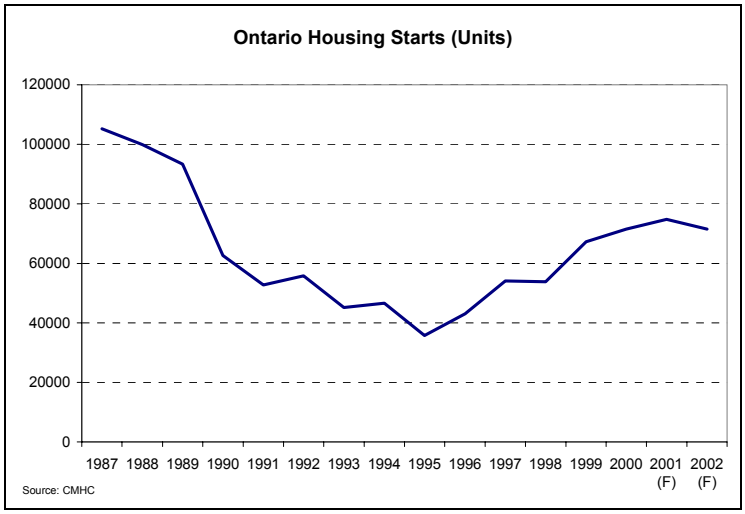
4.2 Labour Demand by Sector

Ontario's construction market remained strong in the fall of 2001. Recession in other parts of the economy had not yet spread into the industry, but the recession has had an impact on the labour markets.

Housing markets in Ontario are strong. Prices of existing housing are rising and resales are strong. Renovation activity is continuing to grow and this represents more than half of the work for the construction industry. Low interest rates, low vacancy rates, high immigration, a strong resale market and rising incomes are all supporting the market. New housing starts continue at very high rates, just slightly below the peak levels set in 1987. Total residential construction activity is now at record levels.

A recent forecast by CMHC projects some modest slowing of activity in 2002, but activity will remain near current high levels. Exhibit 43 reports housing starts across the 1990s and includes this latest CMHC projection.

Exhibit 43



Non-residential construction is also strong. Institutional and commercial activity have sustained their strength and continue the improvement that began in 1996. Commercial building has slipped in importance relative to other types of construction largely because of limited development in large downtown office towers. Industrial building has weakened and this is the only real evidence of the recession in the rest of the economy.

Engineering construction has been growing across the entire past decade and current expectations are that it will continue to at least sustain these levels. Exhibit 44 contains recent statistics from CanaData tracking trends in non-residential building in Ontario.

Exhibit 44

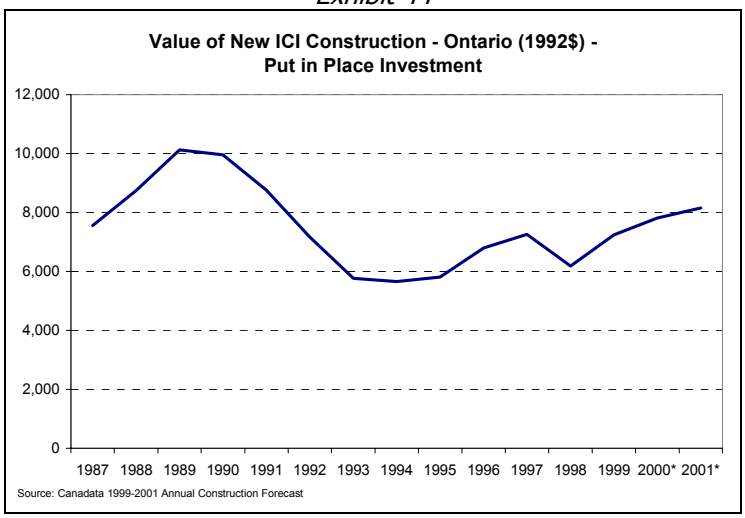
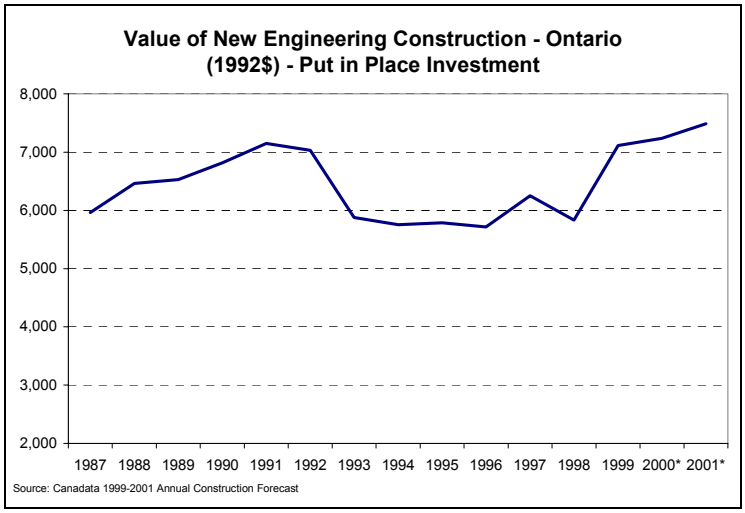


Exhibit 45



4.3 Workforce Changes and Unemployment

Strength in the demand side, reflected in the previous section, translates into jobs for construction workers. This section reports on employment for the industry and the trades and relates that to the available workforce. Evidence of shortages are reviewed and linked to the demographic trends reported in Part I.

Exhibit 46 reflects the evolution of the construction labour market in Ontario across the 1990s and includes estimates for 2001. Employment has now passed the 1990 peak. The recovery in the labour force was delayed and more limited than employment and this led to record low unemployment rates in 2000. The situation has improved slightly in 2001 as the labour force has increased – largely due to tradespeople returning to construction from manufacturing jobs. The modest increase in unemployment probably relieved some areas of shortage, but unemployment rates at the summer peak in activity were near the very low levels of last year.

Exhibit 46

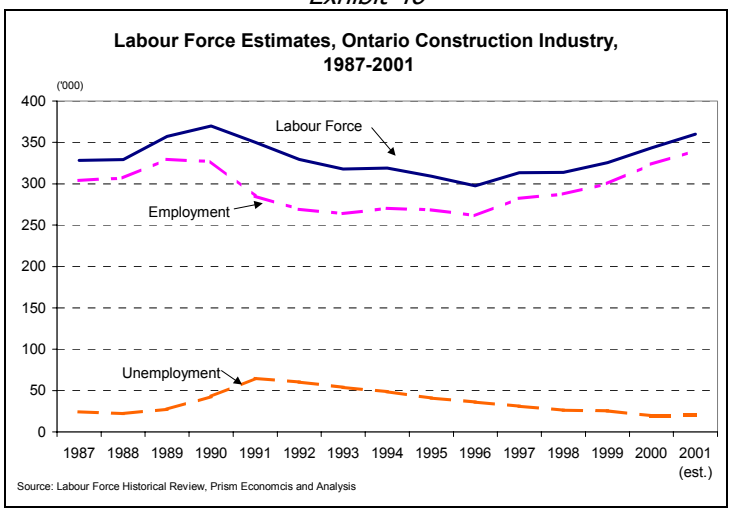
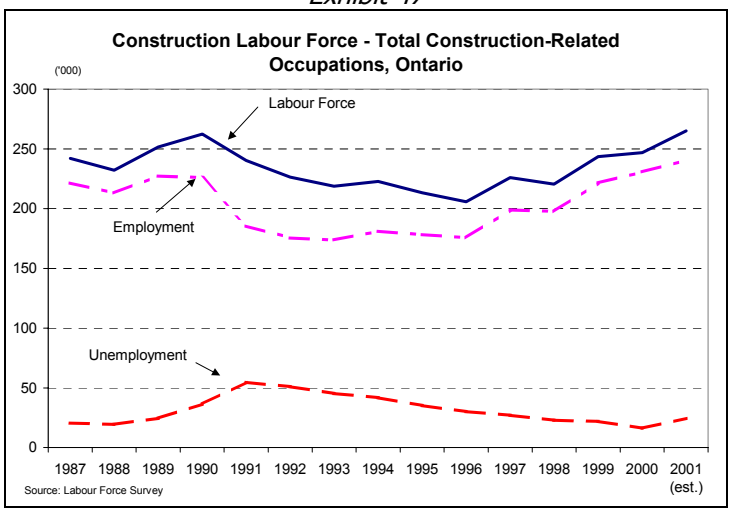


Exhibit 47



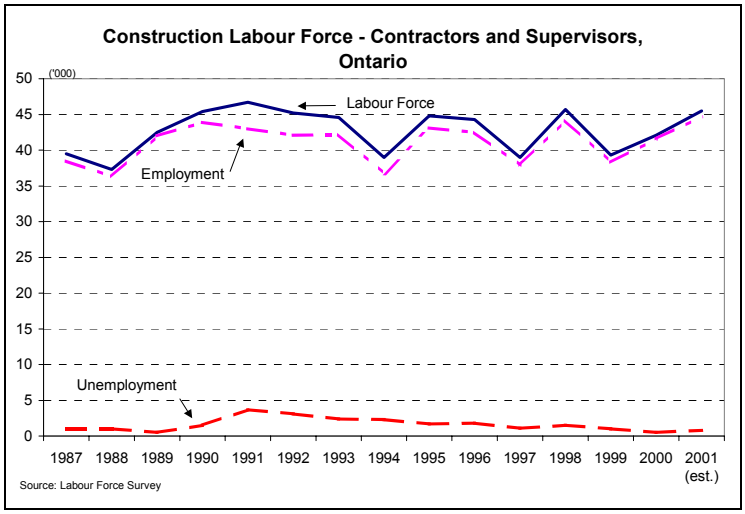
Posted rates of compensation – such as average hourly earnings and wages reported in collective agreements – rose in 2000 and 2001, but not at accelerated rates and not significantly faster than other sectors of the economy. More indirect measures of compensation signaled more significant changes. For example, the proportion of self-employed in construction declined and this suggests that many workers left on their own account or for piece work arrangements for paid employment. This was probably associated with improved benefits. Certainly, reports from employers suggest that labour costs increased in the past two years.

Results reported in Exhibits 46 and 47 likely reflect a cyclical peak. The labour market is now demand constrained and the level of new building has largely exhausted the pool of experienced tradespeople and is drawing on new workers. The growing pool of registered apprentices will help to meet the demand, but the system is clearly stretched to near capacity.

These general conclusions are now extended to individual trades. A more detailed review of some of the smaller trades is possible here because the data requirements are limited to the total labour force rather than specific age groups. Trades are grouped into the "older", "younger" and "average" categories to link these demographic characteristics to the labour market situation.

Exhibit 48 covers the same concepts for supervisors and contractors. Employment is notably less volatile and unemployment levels are extremely low. These patterns reflect labour hoarding during the weak markets and seasonal lulls. More experienced and senior workers are kept on the payroll to conserve needed skills. Contractors report a chronic shortage of supervisors due to few workers with an aptitude for this work and a reluctance of some trades to take on new risks, responsibilities and liabilities.

Exhibit 48



Retirement – specifically early retirement – is a larger risk with this group. Pressure on compensation is likely in the near future. Management concerns like succession planning and profit sharing will likely become more important in the coming years and these are difficult issues for small businesses.

Labour market conditions are reviewed first for the trades identified earlier as "older": Pipe/Steamfitters, Plasterers and Drywall, Painters and Decorators and Bricklayers.

Exhibit 49

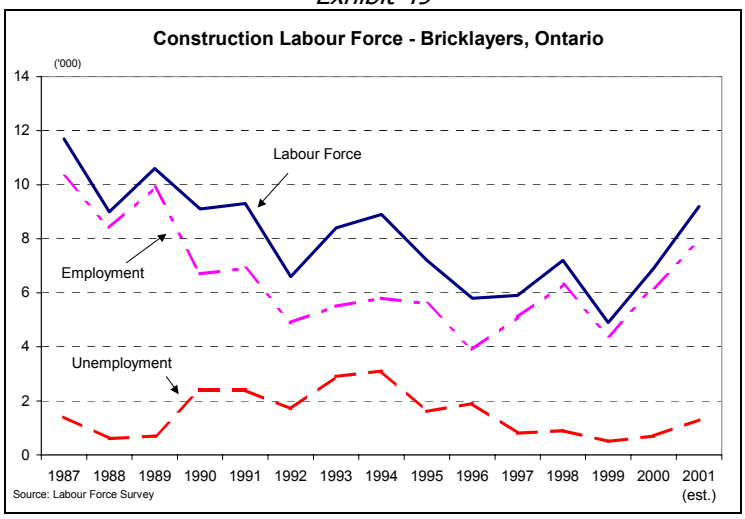


Exhibit 50

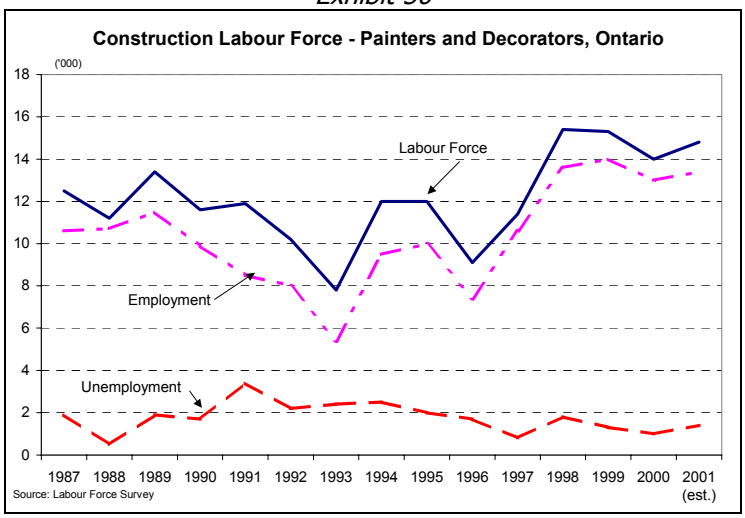


Exhibit 51

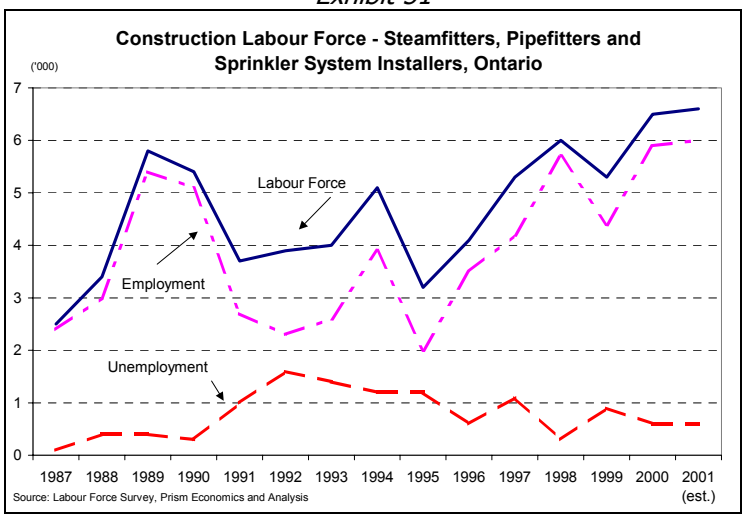
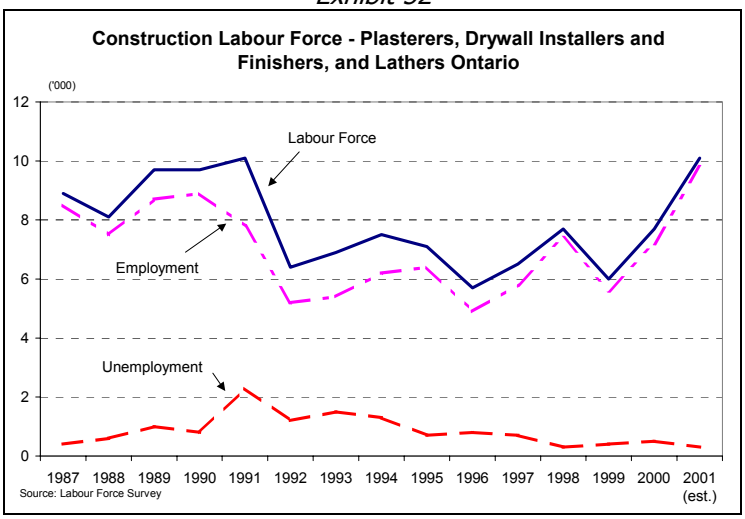


Exhibit 52



Of these trades, only Bricklayers find employment levels below past peaks and the evidence suggests that the trade is still supply constrained. It seems that a big increase in the labour force in 2001 may be related to returning workers, but large changes in the data at this level of detail are not always reliable. Options for attracting Bricklayers back to construction may still be a viable approach. Concern about retirement and targeted training needs may be particularly acute in specialties like refractory and restoration work – especially in the unionized sector.

The remaining trades are at peak levels of employment and very low or record low levels of unemployment. In each case the situation signals the need for a major push to attract new and young workers. All the trades are designated and apprenticeship is a natural focus for building the workforce. Investments are planned or underway for each trade and the data presented here on the age distribution and market situation could be used to refine business strategies. Sheet Metal Workers and the Steamfitters and Pipefitters are compulsory trades where new technologies are important and this creates an even higher priority for investment in new facilities and equipment that embody new technologies.

The next group of trades were identified as younger in Part II above. These include: Roofers and Shinglers, Floor Covering Installers, Labourers and Helpers and Residential and Commercial Installation and Service.

Exhibit 53

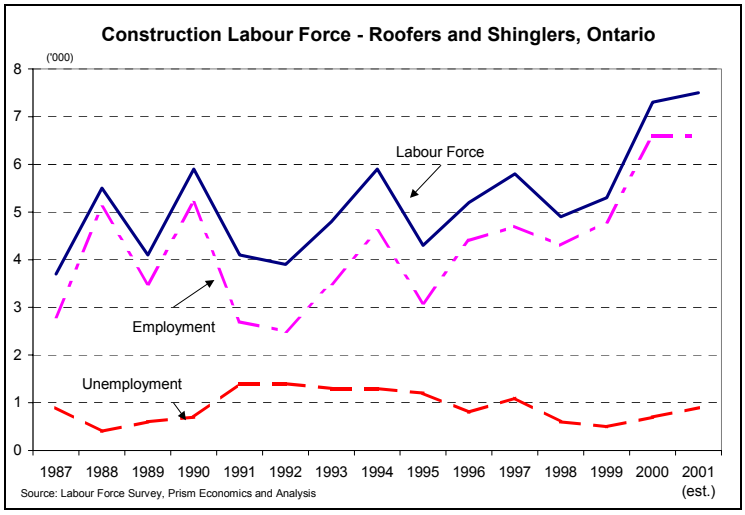


Exhibit 54

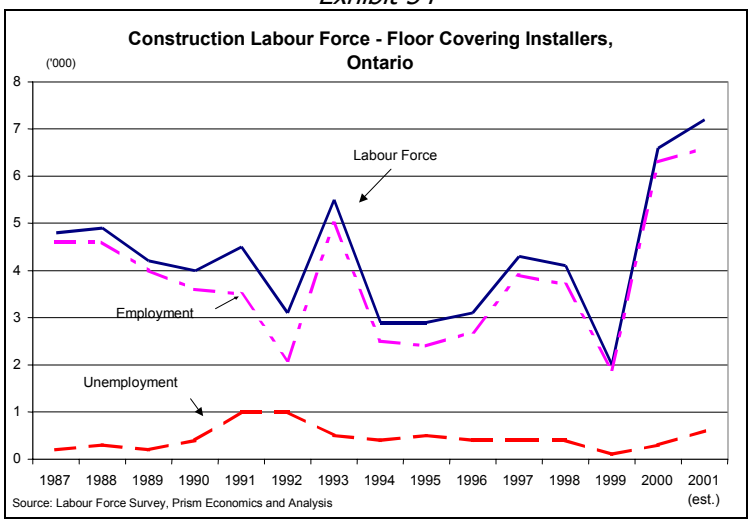


Exhibit 55

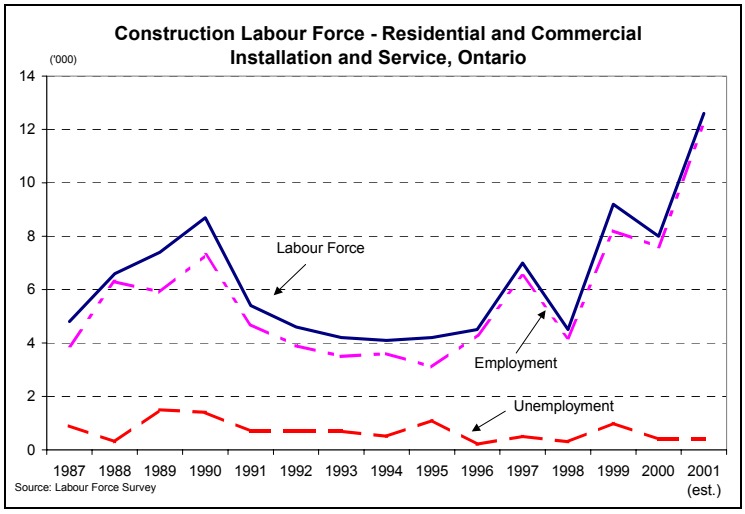
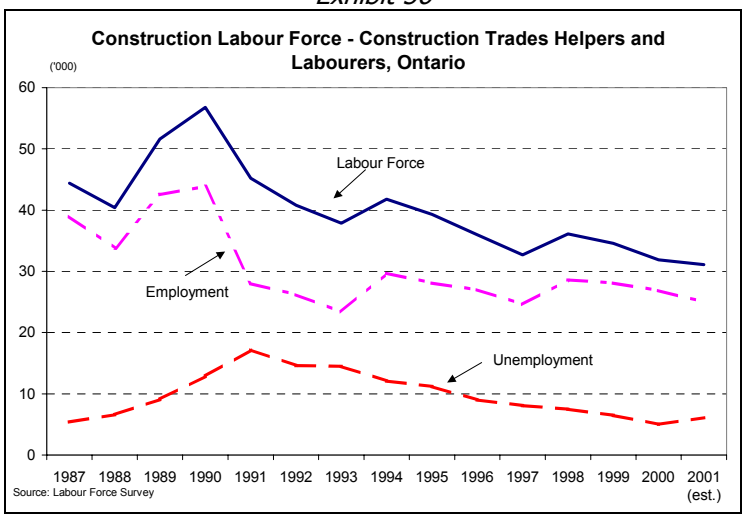


Exhibit 56



Of these four trades, only the Labourers and Helpers category is below past employment peaks. This is a particularly unreliable group of workers to analyze. It is likely a kind of "not otherwise classified" group who were not able to identify a trade. This group is not closely linked to the members of the Labourers International Union of North America (LIUNA) as their members are often identified with trades. The declining trend in employment here is likely a signal that fewer construction workers are designated to this residual category and most learn trades. This is also consistent with the general trend to a rising incidence of post secondary training among construction workers.

It is significant, however, that there is a group of younger construction workers identified in this category. Their experience and age make them natural candidates for recruitment into apprenticeship programs for specific trades. Union membership is low in this group.

The three remaining "younger" trades are at or near record low unemployment. Formal training is not the norm for this group and employers here face serious challenges as they recruit the next round of Roofers, Floor Covering Installers and related workers. New entrants will have no construction experience and represent safety risks. Productivity and work quality are also challenged at this point in the cycle. Initiatives are underway in these groups to improve training and certification levels and these findings highlight the potential benefits. Following established practices, however, would bring in a stream of young workers who would be given minimal training and are likely to leave for other work as soon as the economy picks up in other sectors. Demographics are not a big issue here.

Finally we turn to a group of "average" trades in terms of their age distribution and consider the current labour market conditions. Four large trades – Carpenters, Heavy Equipment Operators, Electricians and Plumbers are representative of circumstances in the industry as a whole. Exhibits 57, 58, 59 and 60 track labour markets through the 1990s.

The two largest compulsory trades – Plumbers and Electricians show a less cyclical employment over the 1990s and are now well above past peak employment. This reflects their extensive roles in repair and renovation work and opportunities for more regular employment across the seasons. Furthermore, the compulsory nature of the trades requires a more regular and sustained intake of apprentices. The result is a more systematic approach to balancing supply and demand. Even so unemployment hit very near record low levels in 2000. Both trades have seen large increases in the labour force in 2001 and this is likely attributable to qualified workers returning from other sectors to take relatively secure and high paying jobs in large institutional and heavy engineering projects.[1]

[1] The erratic saw tooth pattern of employment of Electricians has been a feature of the Labour Force Survey for the last several years. This does not seem to coincide with other data sources and may reflect errors in sampling. Attempts to understand this pattern are still underway.

Exhibit 57

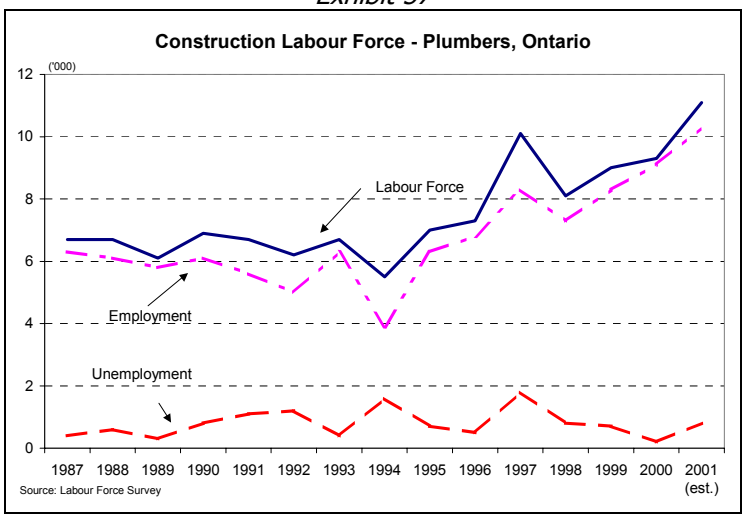
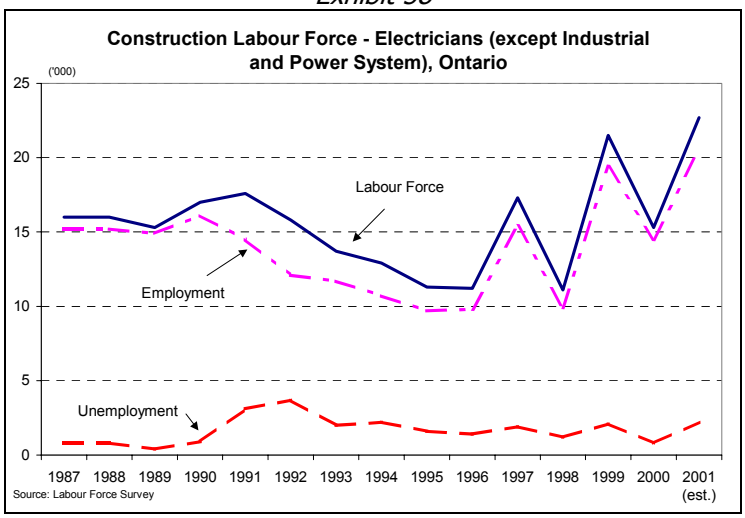


Exhibit 58



The final two large trades – Carpenters and Heavy Equipment Operators – are typical of the structural trades. These groups are more heavily dependent on new construction and are more vulnerable to the cycles. Both trades experienced a severe and extended recession from 1990 to 1996 with job losses of 30 to 40% that lasted five to seven years. Employment levels are only now returning to past peaks and unemployment remains at or near record lows. In both these trades the majority of new entrants receive little or no formal training. Apprenticeship is an option for Carpenters and efforts are now in place to attract and train many more certified Carpenters.

Exhibit 59

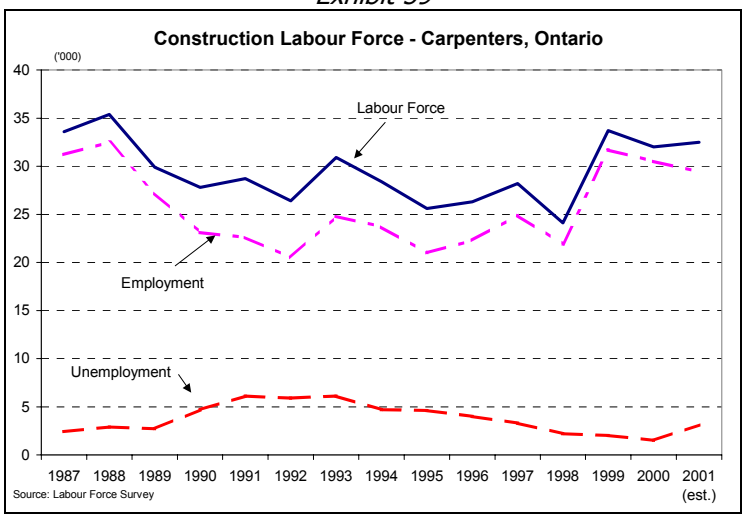
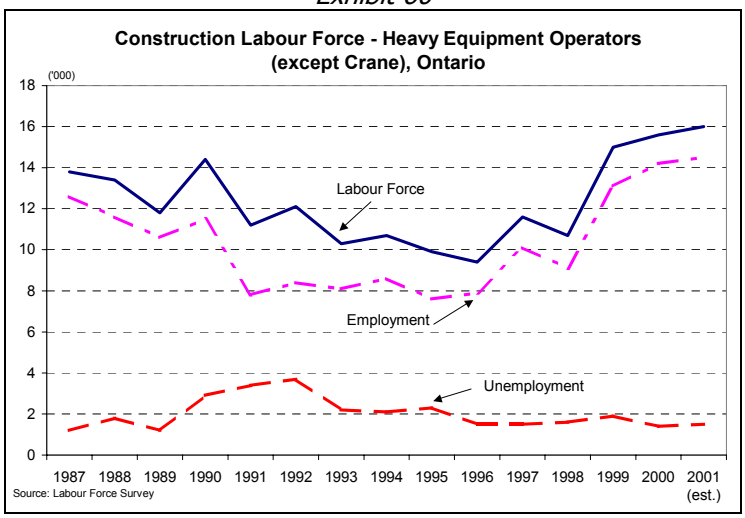


Exhibit 60



Similarly, new apprenticeship programs are planned for Heavy Equipment Operators. This initiative seems to be well timed as it should allow a new generation of operators with much superior skills to replace the retiring boomers.

Market Conditions – by Regions

While the demographics patterns of the construction trades in Ontario's regions are very similar, the labour market cycles have been very different. Exhibits 61 through 65 cover labour market conditions across the 1990s.

Exhibit 61

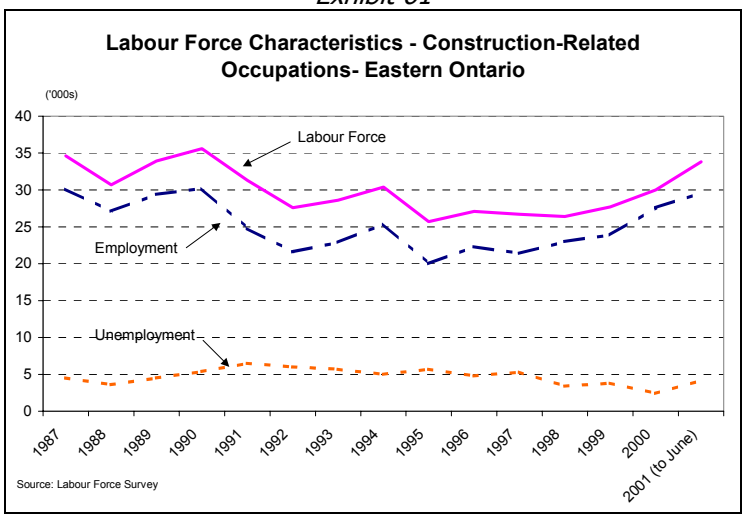


Exhibit 62

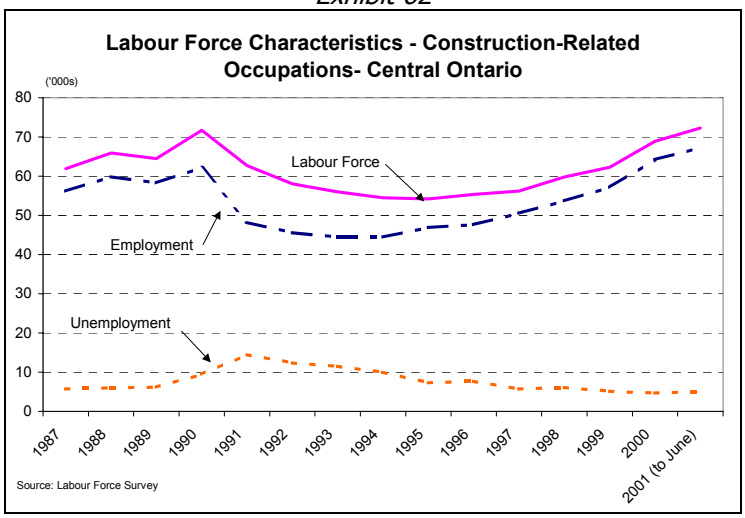
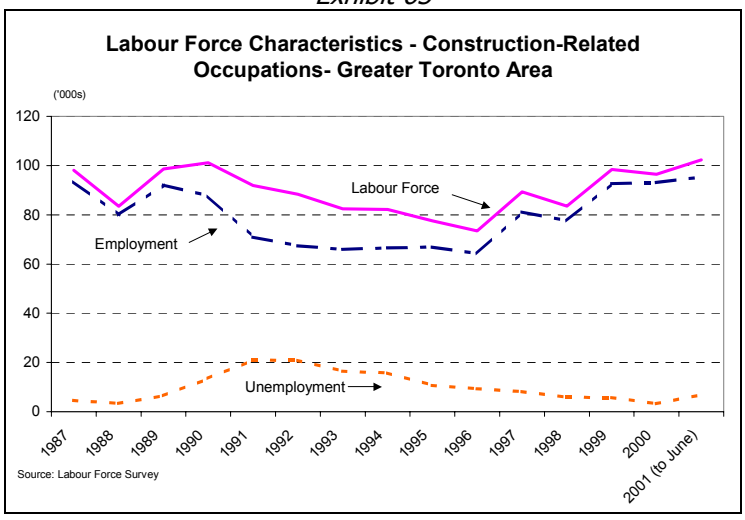


Exhibit 63



Eastern and Central Ontario shared the boom-bust cycle that is common to most trades. Employment peaked in 1989-1990 and bottomed out in 1995-1996. Growth in the GTA and Central region has been strong in the recovery and levels are 10% or more above the peak. The recession was severe and extended in Eastern Ontario, but gained momentum in 1999 and 2000. Early results for 2001 show as leveling off.

Construction employment in Northern Ontario has been less cyclical, but there are no signs of recovery in the 1996-2001 period. A trend decline in the workforce may indicate a gradual migration of workers to jobs in the south.

Exhibit 64

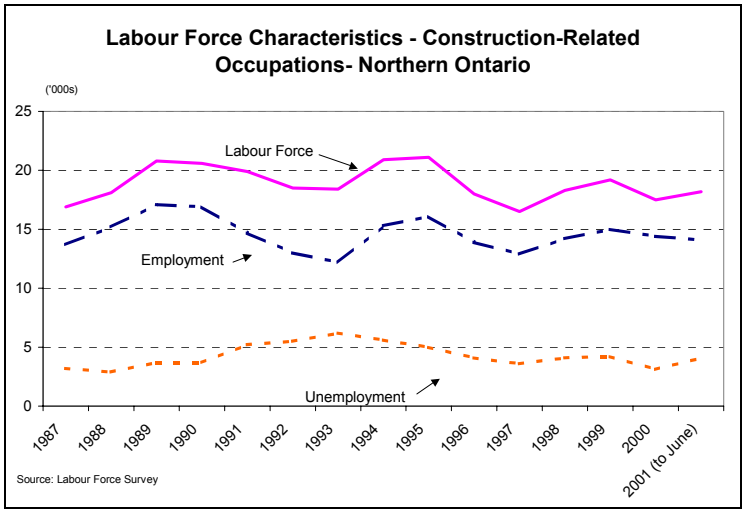
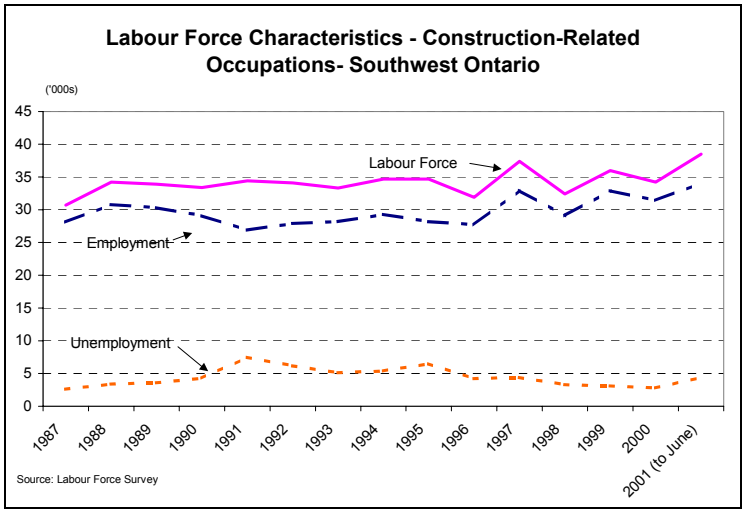


Exhibit 65



Southwestern Ontario shows a distinctively different pattern again. The recession was very muted, but the region had not enjoyed the boom of the late 1980s. Employment expanded during the late 1990s, but the expansion has been uneven. Unemployment levels were very low in 2000 and a small bump up in the workforce in 2001 has eased markets slightly.

One interesting common feature of all the Ontario markets is that unemployment has fallen to very low or record low levels. This implies a mobility of labour that equalizes market conditions. Clearly unemployment would have been even lower in the strong Central Ontario and GTA market in 2000 if workers had not moved into the area from the north. There is similar evidence of adjustments among provincial markets over the same period.

Better measures of this sort of market adjustment are very important. In particular, governments are understandably reluctant to approve immigration when there are suspicions that unemployed and qualified workers are available for work in other regions.

5. Implications for Labour and Skill Shortages

The basic conclusion of the research presented here is that short-term changes in the size and mix of the construction workforce are very large and accommodate shifts in demand usually avoiding shortages. Strong market conditions in the late 1990s created some shortages in 2000 and 2001. This adjustment process has been largely unrelated to the demographic features of the population. Over the long term, the shifting age structure and patterns of entry and exit have altered the construction labour market. The immigration wave of the 1950s and 1960s is an important example.

The dominant Baby Boomer group is having an impact on the size and mix of the workforce. The first impact was the decline in the population aged 15 to 24 in the early 1990s, as this limited the pool from which many new entrants are recruited. Much larger impacts can be expected as the Boomers begin to retire between 2005 and 2025. This last impact is truly a long-term issue. When these demographic features coincide with market strength, the risk of shortages will be increased.

The demographic issue described above is best seen in the context of other long-term changes in the construction workforce. One of the most important of these is the rising proportion of the workforce that has a Certificate of Qualification or other formal training. This change is reinforced by research that indicates rising skill requirements for most of the trades. Most industry participants see the merit of continuing to increase the proportion of workforce with formal training and certification while also raising skill levels in the existing group. When this finding is combined with the potential retirement of the Boomers, the industry clearly faces a major challenge. Training programs and certification must be increased to new, higher levels of activity. Planning and paying for this new investment is a priority matter. The remainder of this section of the report reviews the implications of the analysis for meeting this challenge for the industry in general and for individual trades.

One key challenge is the limited number of young people in the source population and competition from other industries to recruit them. Increased immigration is a possible government policy response to this situation. If government opens this opportunity, the construction industry will need to take best advantage. For some trades this may mean recruiting in other countries. It will be important to co-ordinate these plans with the general objective of raising the number of certified construction workers in the labour force. One component of this process is "Prior Learning Assessment and Recognition (PLAR)". This process is getting new attention among educators in Canada and construction groups will need to become more involved in this effort.

The recent federal government paper on immigration seems to have placed a major new obstacle for immigrants targeting construction trades. This seems to be a policy error. Evidence presented here suggests that at least some of the trades will need to recruit from other countries given the distribution and aptitudes of the Canadian population. The Federal government needs to recognize this reality and adjust the points system for immigrants so that more qualified tradespeople will be able to immigrate.

Many trades are reluctant to pursue the immigration option until proper measures are in place to fill jobs with Canadians. This shifts the emphasis to the mobility of the construction workforce among regions and provinces. There are several initiatives that target this goal. In particular,

several trades are working towards national standards and core curriculum to make training more consistent and to encourage employers to hire from other provinces. PLAR is also part of this process. One ultimate objective here would be to increase the number of construction workers holding a Red Seal.

Issues of immigration and mobility have a high priority for the "older" trades with supply-constrained shortages. This would include Crane Operators, Bricklayers and in regions like Northern Ontario. Large investments in recruiting and new training programs can be made more efficient if contractors have ready access to trained workers in other jurisdictions.

The "younger" trades – Roofers, Floor Covering Installers, Labourers and Helpers often start work in construction with little or no training. This group is vulnerable to accidents and there is a high rate of turnover in the first season. Recruiting will be more difficult given the limited population of young people. Raising the proportion of certified workers in these trades may well start with orientation and pre-apprenticeship programs. These programs would be structured to encourage new entrants to remain in the trade.

The construction industry competes with other industries for many of the trades. In some cases, like Heavy Equipment Operators, more skilled workers are employed outside construction. Competition for the best qualified workers is intense and employers have significant investments in the workers that they have nurtured through apprenticeship. Tracking workers lost to other sectors during recessions and attracting them back during booms may be a cost effective strategy – especially if Employment Insurance benefits continue to decline and limit the incentive for workers to wait for work in construction.

Findings reported here imply a greater sense of urgency for the unionized sector. Non-union firms have gained the competitive advantage of gathering the younger workforce and building a reserve of workers who can fill the shoes of the departing Boomers. The immediate challenge for non-union employers is increasing training and raising the number of certified workers. Union employers face the larger problem of recruiting top quality new entrants in the coming years as competition intensifies for the limited younger population.

Entry patterns reviewed here suggest that the union sector could diversify the current recruiting initiatives. In particular, young adults between 20 and 30 years old, who are unemployed or underemployed – especially those who know construction workers – are natural candidates. Further, the current population of helpers and other unskilled workers are strong candidates for apprenticeship programs. A particular challenge is identifying new workers with the aptitude and work ethic for construction. High hourly wages in the industry will assure a strong response when recruiters advertise for candidates. The vast majority of respondents are not suited to the trades, however, and the unionized industry will be investing heavily in selecting and retaining the best candidates.

It should also be noted that other research done for building trades locals in Ontario reveals important differences across trades and locals. The unionized sector needs to respond to the challenge reported here both as a group and as individual trades. Distinct age profiles and concentrations of older workers in certain areas signal more immediate and specific reactions. The methodology used here is easily adapted to data on the age distributions of local memberships.

Analysis of "pure demographics", or simply aging the population from an initial distribution, highlights the large number of departing workers aged 55 and over. This loss of the older and most experienced groups in the workforce merits closer considerations. In particular, there is

some analytical and some anecdotal evidence of growing early retirement where trades are taking advantage of excellent pension benefits. This behaviour would impact many crucial human resource issues for the trades. For example, the older age distribution of managers and supervisors raises concerns that shortages in this group would be aggravated by early retirement. There are related implications for apprenticeship and other in-house training as older workers with valuable experience are lost as mentors for new entrants. Seen in this way, it appears that an industry strategy designed to retain older workers is a natural complement to current efforts to recruit the young.

Ideas developed above would all contribute to reducing the risk of shortages in the coming decades. However, current evidence suggests that labour markets are tight in 2001 and concerns about skill shortages are more immediate. If the current recession spreads into construction, these risks would likely be replaced with new problems of unemployment and financial risks for contractors. A recession may also delay or cancel current investments in recruiting and building new apprenticeship facilities and programs.

Cycles in construction are notoriously difficult to predict. There is a good possibility that construction will be spared the recession in the early 2000s and that any diversion from the current investments to build the workforce would be a major error in timing.

The onus falls on the industry to monitor these developments closely and advise government, trainers, contractors and others on the current state of the market. Vigilance and a bit of luck with forecasting would be rewarded as the cost of cutting back supply too soon (or overinvesting in the short run) may be avoided.

6. Conclusion and Next Steps

The findings and implications discussed above can be summed up with the following conclusions and recommendations:

- Demographic features of the construction workforce do not have an immediate impact on major short-term cyclical adjustments in the workforce.
- The current age structure creates a limited supply of younger workers and potential recruits and raises the likelihood that large numbers of Baby Boomers will begin retiring in 2005 and this will continue as an important trend until 2025.
- Rebuilding and expanding training and recruiting programs is a priority for construction because of the losses sustained in the last recession and the future retirement of Boomers.
- Patterns of entry and exit point to opportunities to recruit more broadly and to the need to limit or better manage early retirements.
- Immigration will become a much larger source of new workers and this must be balanced by improved inter-provincial mobility of workers.
- Construction groups need to join the movement to wider use of Prior Learning Assessment and Recognition (PLAR) as a means to promoting more efficient use of skills.
- National standards for training and common curriculum are a priority and will improve the efficiency of the labour market.
- Orientation and Pre-apprenticeship programs for trades with a younger profile are a priority for improved safety and greater retention of needed workers.
- Recruiting and training strategies are a priority for many union trades as their pool of younger workers is seriously depleted. Strategies here can focus on several groups and take advantage of patterns of entry and exit.
- The industry must assume responsibility for tracking the cycles and the movements of workers to guide recruiting initiatives and to manage training and certification. Credible tracking systems will be valuable to government planners.

6.4 Next Steps

The findings and implications reported above are sensitive to market conditions and will vary by trade. It is important for the industry to monitor changes in these background conditions and to respond with any needed changes. In particular, history suggests that there will be another recession in construction. When it comes it will dramatically alter attitudes and priorities about training, recruiting and other priorities. It will be important for the industry's leadership to anticipate this change and balance short-term realities with longer-term priorities. It is equally important to recognize that market conditions and training needs will vary by trade and region and that local groups must be provided with analysis that fits their circumstances.

It is therefore recommended that the Ontario Construction Secretariat (OCS) extend the results of this paper in two directions. First, the OCS should update this analysis on a regular basis to determine whether the findings and implications need to change. Where possible, the OCS should forecast market conditions as an "early warning" system for approaching change. Second, the OCS should encourage individual trades and union locals to review information on age profiles and recruiting and training priorities. The methodologies and approaches used in this research can be applied consistently in each of these areas.

Appendix

Appendix: Age Distributions, Trades in the Construction Industry

Exhibit A-1

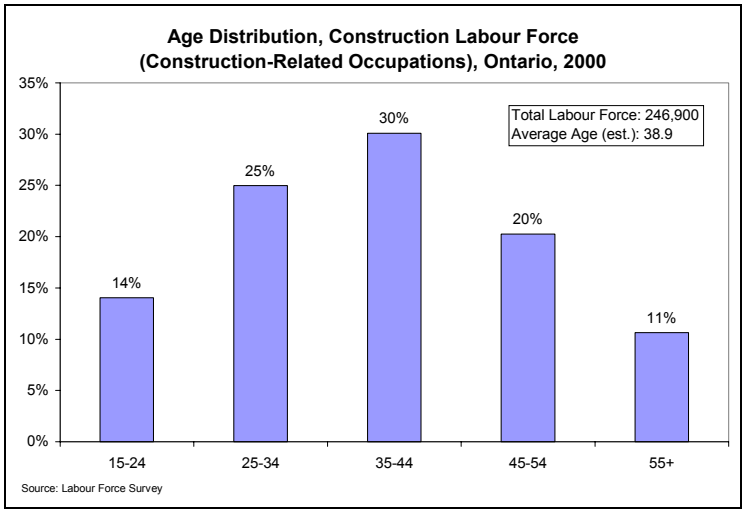


Exhibit A-2

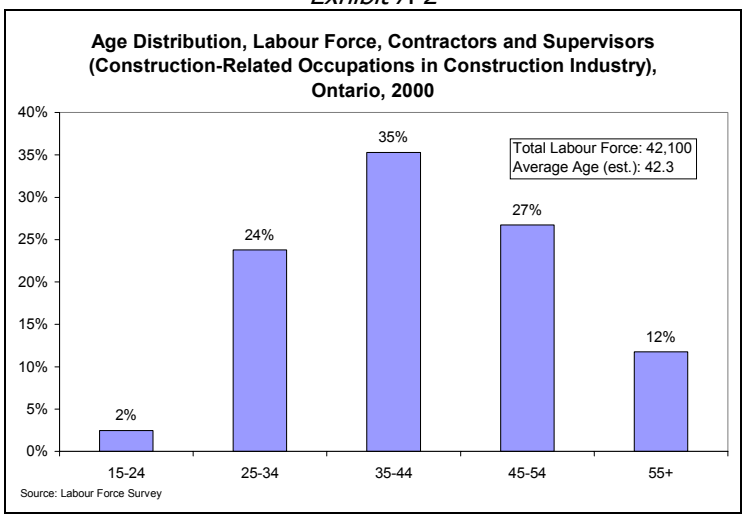


Exhibit A-3

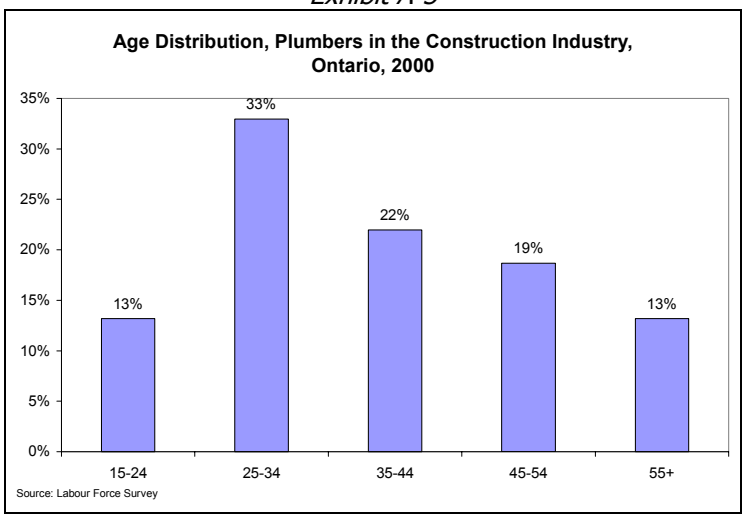
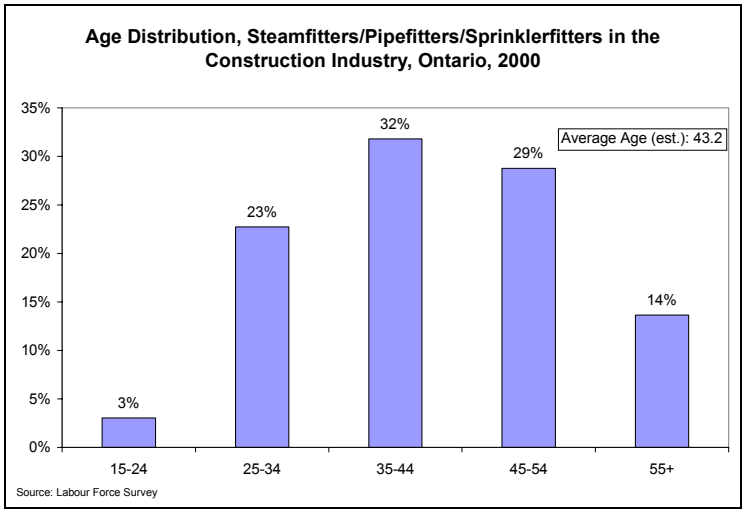


Exhibit A-4



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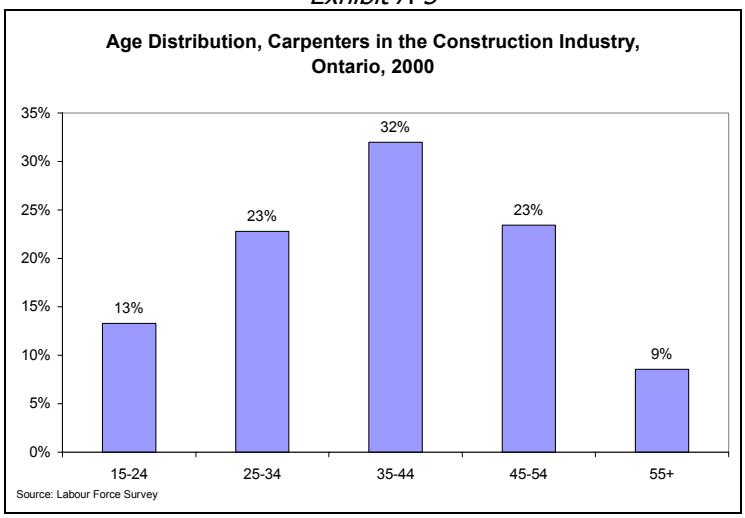

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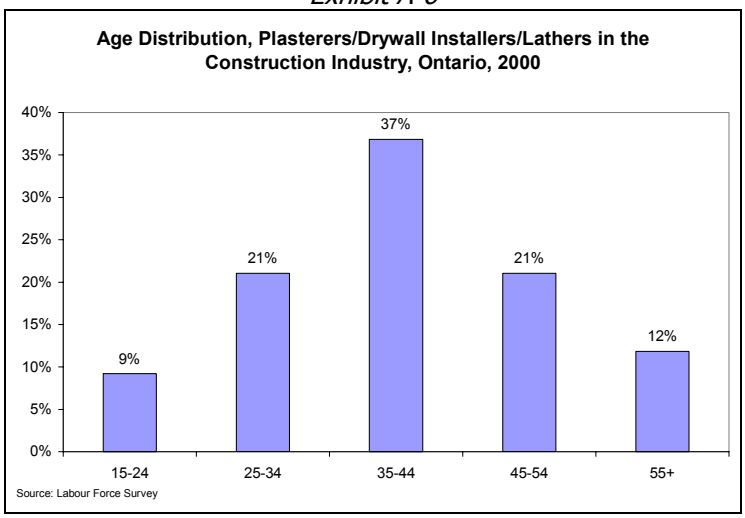

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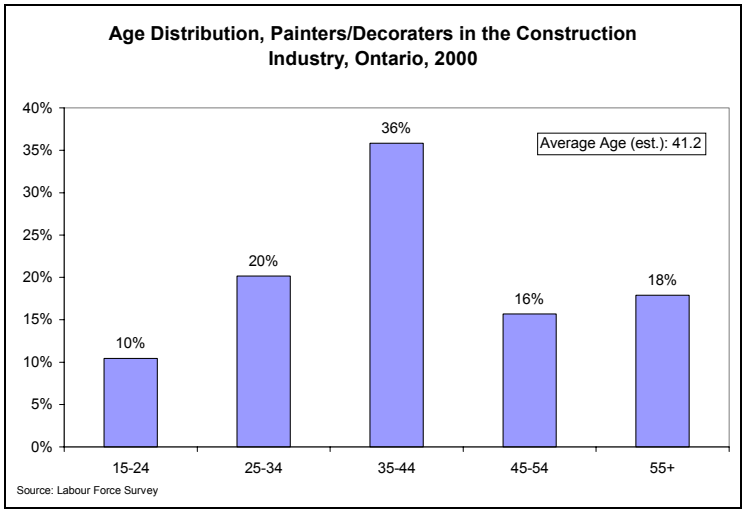

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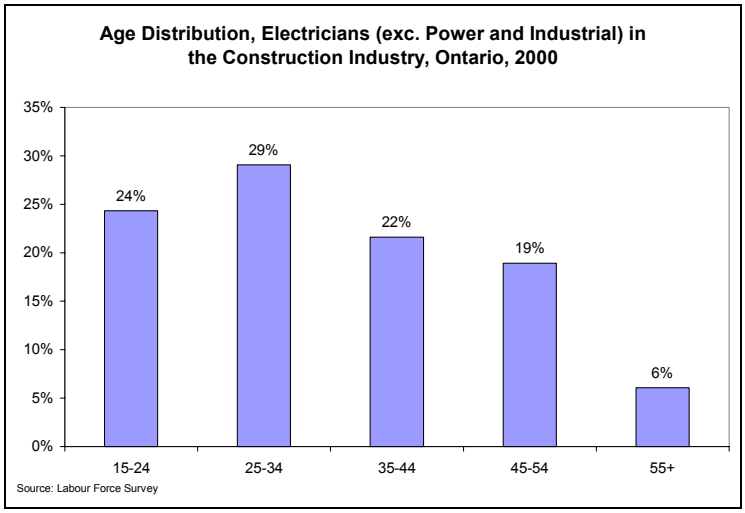

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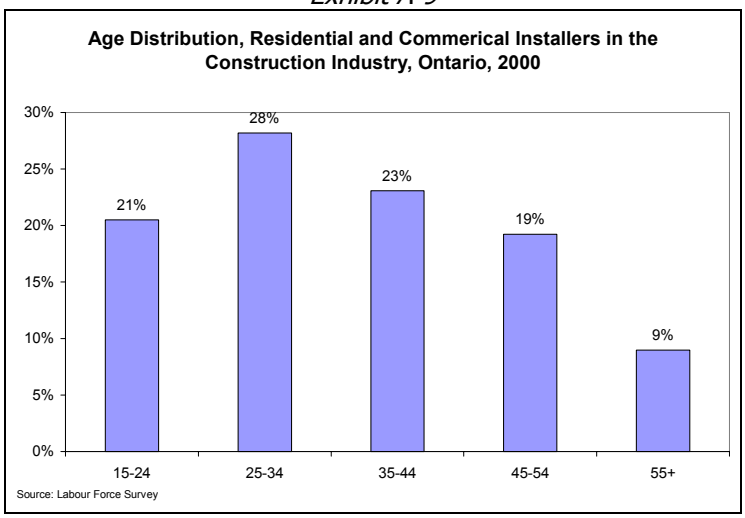

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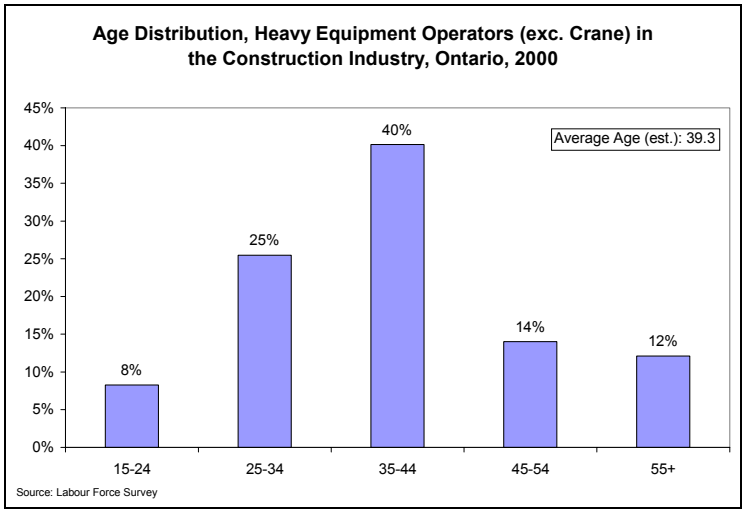

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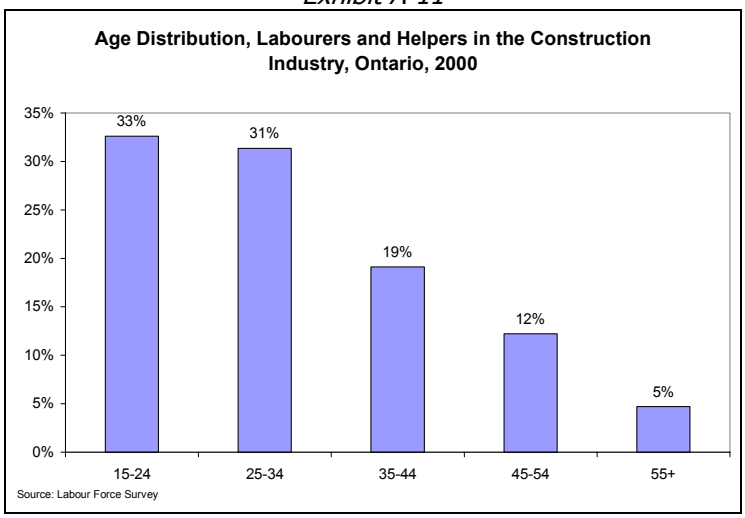

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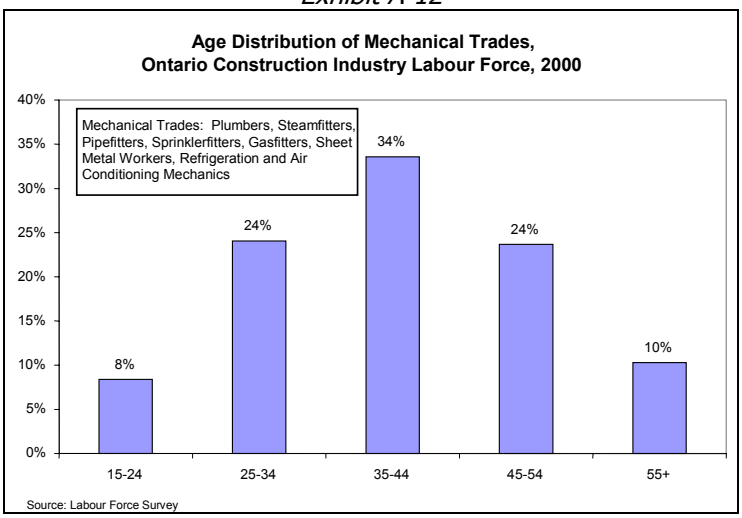

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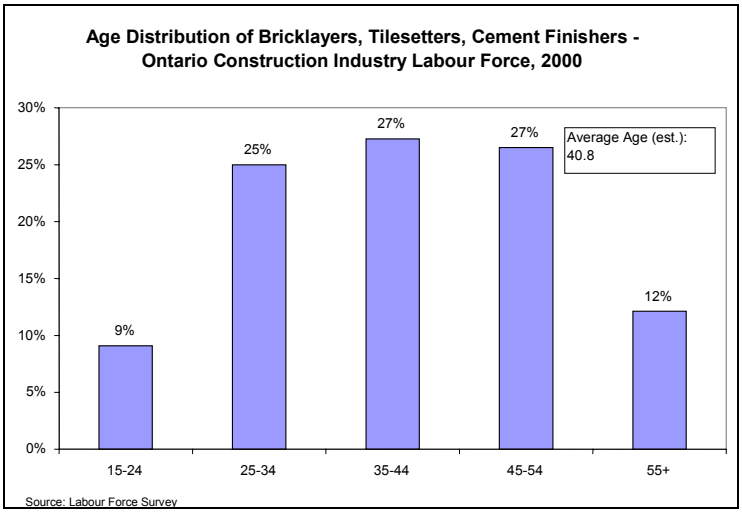

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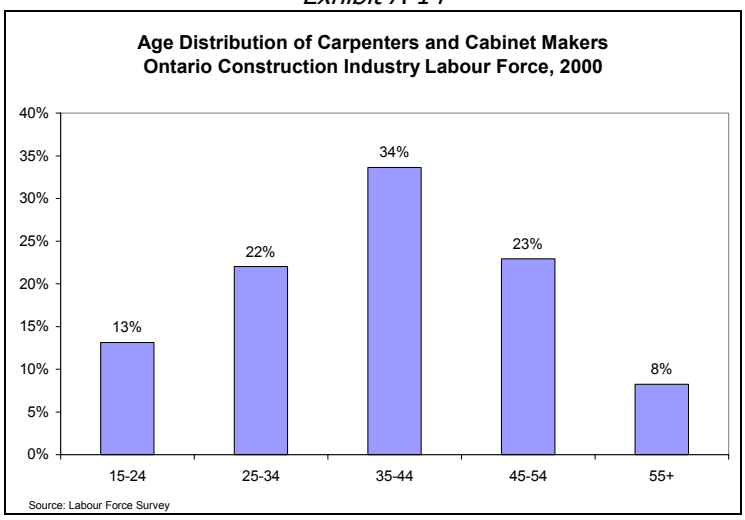


Exhibit A-15

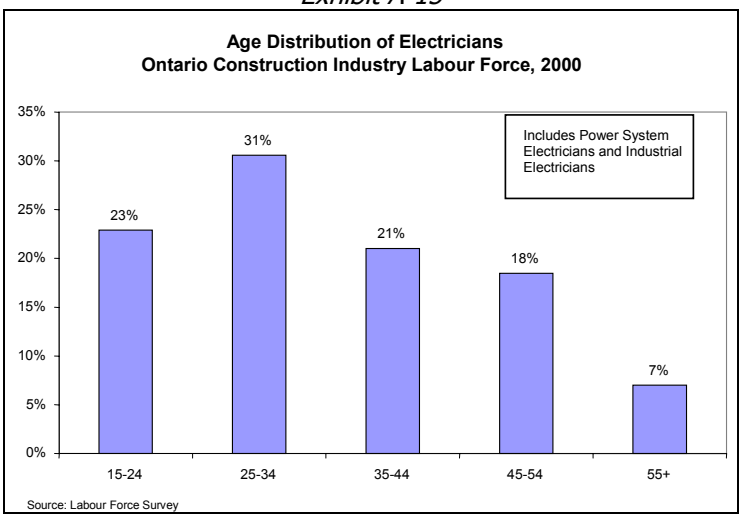
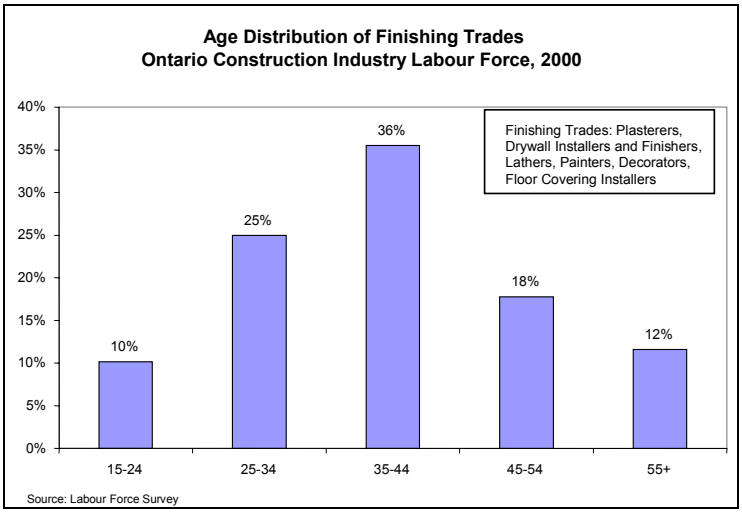


Exhibit A-16



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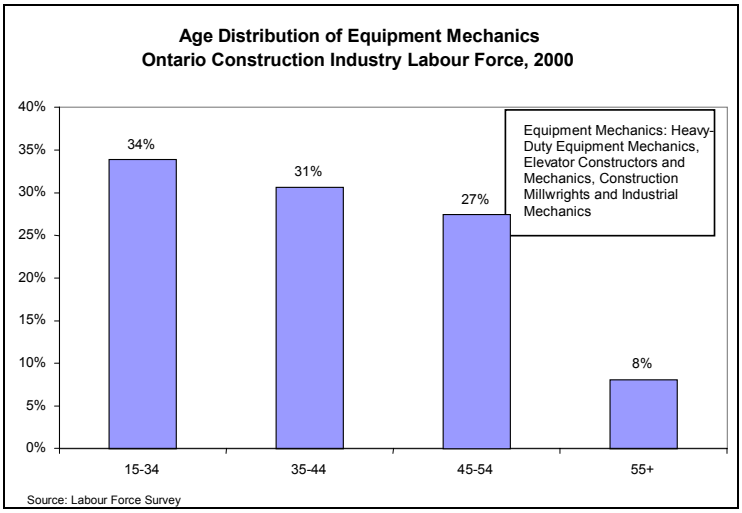

Exhibit A-18

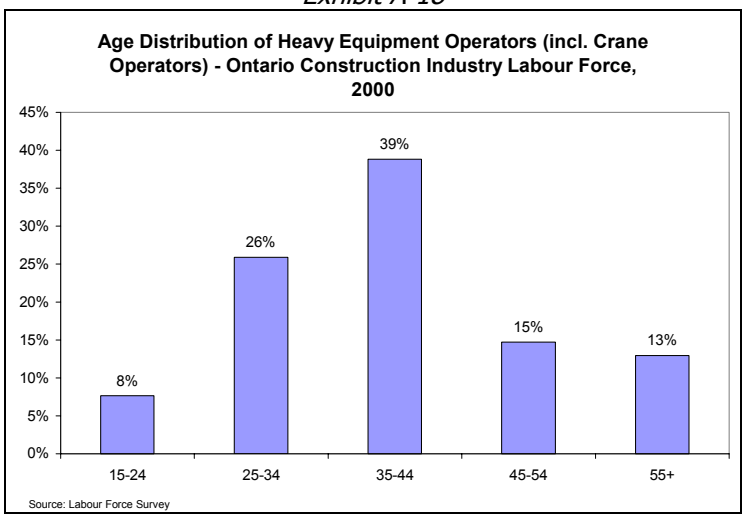

Exhibit A-19