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### Returns to Apprenticeship in Canada

*Daniel Boothby*  
Industry Canada

*Torben Drewes*  
Trent University

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# Returns to Apprenticeship in Canada

Daniel Boothby  
*Industry Canada*

Torben Drewes  
*Trent University*

## Abstract

The paper exploits the newly available Census data on the earnings of individuals in the apprenticeable trades to examine the returns to apprenticeship training. Only a small minority of males work in these trades, concentrated in the construction, production and mechanical trades where their weekly earnings premia over completed high school range from 9 to 14 percent. An even smaller minority of women report working in apprenticeable trades and it appears that many of them mistakenly report having apprenticed. In the largest single trade for women, personal services and culinary arts, the earnings premium is actually negative, although weekly earnings compare more favourably against the earnings of women without completed high school. Given reasonably large returns for men, late entry into apprenticeships is a puzzling phenomenon requiring further investigation.

*JEL Classification: J24, J31*

*Keywords: Human Capital, Wage Differentials, Canada*

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## Executive Summary

- While only a small proportion of the Canadian labour force has trained in the apprenticeship system, the system is critical for the supply of labour to certain sectors, such as construction. Prior to the 2006 Census, data required to estimate the returns to apprenticeship as a form of post-secondary education were simply not available in Canada. The paper intends to begin the process of establishing those returns using the new apprenticeship classifications in the latest Census.
- There is little evidence on the returns to training certification in Canada. The 2000 Census suggests that the earnings premium over completed high school for this certification (apprenticed and non-apprenticed) was in the order of 11.5 percent for men and 3.6 percent for women. In Great Britain, the premium to apprenticeable training have been estimated to be 5 – 7 percent for men and nil for women.
- According to the 2006 Census, approximately 7 percent of males and 2 percent of females reported themselves as having certification in an apprenticeable trade. Using the Classification of Instructional Programs to identify specific trades, we find that about 80 percent of males are in the construction, production and mechanical trades while one third of females are in the personal services and culinary arts trades. Over 40 percent of females report apprenticeship training in business management and support or health services trades. These individuals are most likely confusing apprenticeship training with less formal programs of study, which leads to some concern about using Census data to estimate returns to true apprenticeship programs.
- According to the 2007 National Apprenticeship Survey, the mean age at the start of apprenticeship programs was around 25 years for males for most of the trades but was over 30 years for women in some trades. Median program lengths ranged from 2 to 5 years, suggesting a significant human capital investment by apprentices.
- A human capital earnings function approach is used to estimate the proportional increase over high school earnings associated with different apprenticeship types. Among men, the construction and engineering technology trades produced the largest estimated premia at 13.8 percent and 13.5 percent, respectively. The earnings gap was 12.0 and 8.6 percent, respectively, in the production and mechanical trades. For the small number of males entering the personal services/culinary arts trades, the earnings gap was actually negative with mean earnings in these trades estimated to be over 17 percent below the average high school graduate's earnings.
- For the small number of women in the male-dominated apprenticeable trades, the earnings premia were substantial, at over 27 percent. However, in the single largest trade destination for women, personal services and culinary arts, the earnings premium is estimated to be negative.

- Data on the earnings of apprentices during training are not available in the Census and those data cannot be used to develop estimates of the internal rate of return to apprenticeship training. Attempts to use the 2007 NAS to fill in the missing data resulted in estimates that were overly sensitive to small changes in the assumptions made. The “confidence interval” around any of our estimates was simply too large to allow reporting of a point estimate of the rate of return. Given that apprentices normally receive compensation during training and do not incur tuition costs, we conjecture that the difference in the rates of return between three post-secondary education choices (university, college, and apprenticeable trades) are likely to be smaller than the estimated weekly earnings gaps.