



The effectiveness of apprenticeship training: A within-track comparison of workplace-based and school-based vocational training in Hungary



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ABSTRACT

Although apprenticeship training has been praised for its effectiveness in easing the transition of non-college-bound students from school to work, most studies rely on cross-country or cross-track comparisons. This study compares apprenticeship training students with non-apprentices within educational track in a relatively uncoordinated and decentralized institutional setting. Using a rich database and a unique set of observable individual-level characteristics as well as local labor market fixed effects to control for the potential selection bias, the results show that there are no significant differences in employment opportunities between apprentices and non-apprentices within just a year after graduation. This might be due to the failure of the Hungarian firms to enhance the skills of apprentices and thus increase their chances of entering the labor market compared to their school-trained peers. However, some immediate positive effect of apprenticeship training within sub-populations is apparent, which are likely to be the result of screening.

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1. Introduction

Measuring the effects of workplace-based vocational (apprenticeship) training relative to school-based vocational training on labor market outcomes has been a challenge. The problem “arises from the fact that the two vocational routes are rarely available to young people as direct alternatives in the first place. Vocational preparation at sectoral or occupational level typically depends within any one country exclusively on either apprenticeship or full-time schooling” (Ryan, 1998:309). Hungary is an exception.

Many have tried to address this selection bias using selection equations (Bertschy et al., 2009; Bonnal et al., 2002; Meer, 2007), or pieces of information from different sources of exogenous variance (Alet and Bonnal, 2011; difference-in-difference method: Hanushek et al., 2011; Noelke and Horn, 2014; instrumental variable method: Parey, 2009). This paper addresses the question of the effect of apprenticeship training on youth employment in a more straightforward manner using the unique Hungarian institutional setting. It compares workplace-based vocational training with school-based vocational training *within* educational track and local labor market using a rich and unique set of observable individual level characteristics to control for the potential selection bias.¹

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¹ Uncommon abbreviations in the text: Hungarian Life Course Survey (HLCS), National Assessment of Basic Competencies (NABC), vocational education and training (VET), special education needs (SEN).

In Hungary, apprenticeship and non-apprenticeship students can be compared within the vocational training track within each industry. Students within this track receive the same general education, practical training, and qualification after successfully finishing school and taking the occupation-specific exams. They only differ in their place of practical training: some gain experience while working for a firm as an apprentice, while others gain knowledge in the same field within the school (school workshops or within the class).

This study aims to test the assumed positive effects of apprenticeship training on employment opportunities and to discuss the potential mechanism. Contrary to expectations, the results highlight that apprenticeship training is not as influential in a decentralized, uncoordinated system as it is claimed to be in the established dual systems in Europe. There are no differences in employment opportunities between apprentices and non-apprentices during the year after graduation. This might be due to the failure of the Hungarian firms to increase the skills of apprentices and thus increase their chances of entering the labor market compared with their school-trained peers. However, screening has an immediate effect on apprentice training within subpopulations.

2. Previous literature

2.1. Effectiveness of apprenticeship training

Workplace-based training has been widely praised for its potential in preparing non-college-bound youth for the labor market, even at the supranational level (OECD, 2010a). The “dual” vocational education and training systems at the secondary level, combining school-based vocational education with employer-provided, workplace-based training have sustained a positive track record in easing the transition from school to work, lowering the unemployment rate, and increasing the quality of work in cross-national comparisons (Breen, 2005; Müller and Shavit, 1998; Piopiunik and Ryan, 2012; Rosenbaum et al., 1990; Ryan, 2001; Shavit and Müller, 2000; Wolbers, 2007).

Several authors have directly compared apprenticeship training with full-time vocational training within country with similar results. van der Velden and Lodder (1995) and Plug and Groot (1998) focus on the Dutch, while Winkelmann (1996) study the German education system and compared apprentices with similar students from alternative tracks. Both the Dutch and the German apprentices have a quicker transition to employment than their peers, but Plug and Groot (1998) hardly find any difference between the two tracks in terms of employment opportunities, earnings, and earnings growth. Winkelmann (1996) also notes that once a student is employed, the stability of further employment is independent of her/his previous track.

Although these conclusions are appealing, the potential selection bias in the estimates cannot be denied even in the within-country comparisons. In most countries, educational tracks are highly selective, and mostly on such individual characteristics that affect employment opportunities as well. Therefore, recent studies are increasingly addressing the selection bias in these cross-track comparisons. Bonnal, Mendes, and Sofer (2002) and Bertschy et al. (2009) attempt to model the selection into apprenticeship using French and Swiss data, respectively. Bonnal, Mendes, and Sofer (2002) show that apprentices have a better possibility of finding a job immediately after graduation; this effect is mainly driven by the “stayers,” that is, those who stay at the firm that provided the training. Bertschy, Cattaneo, and Wolter (2009) observe that a significant initial difference in employment in “adequate jobs,” which matches the graduate's qualifications, between these groups disappears after they take selection into tracks into account.

Besides modeling selection directly, other papers tried to address the selection bias using an exogenous variation. Noelle and Horn (2014) use the rapid change in apprenticeship training places in Hungary after the transition. Drawing from the variation in decrease in training places in the 20 different counties, they estimate a difference-in-difference model. They conclude that male vocational graduates in counties with a larger share of apprenticeship training are less likely to be unemployed right after they enter the labor market, but this effect diminishes sometime after entry into the labor market. The authors find no difference in the quality of job acquired in the labor market.

Parey (2009) also uses variation in the supply of apprenticeship places in local German labor markets as an exogenous predictor for individuals' choice between firm-based apprenticeship training and a fully school-based vocational program to identify the returns to apprenticeship training. He shows that apprenticeship training leads to substantially lower unemployment rates, which decline over time.

Similar to the studies mentioned earlier, Alet and Bonnal (2011) use variation in local apprenticeship share to instrument the probability of track choice. They argue that selection bias must be corrected as the naïve estimates point toward less favorable educational outcomes for the apprentices, while the instrumented equations level out (or even reverse) the advantages.

In short, while most of the non-causal, cross-country comparative studies argue that apprenticeship training is superior to school-based vocational training in easing the transition from school to work, studies attempting to correct for selection bias hold a more moderate view on the positive effects.

2.2. Potential mechanisms

While the positive or nonnegative effect of apprenticeship training on individual outcomes is rarely questioned, the mechanisms that cause these effects are less obvious. The two distinct mechanisms according to Ryan (1998) are the “superior skill learning” of apprentices and the “associated institutional links” between the sides.

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