



Stature and life-time labor market outcomes: Accounting for unobserved differences



Petri Böckerman^{a,b,c,1}, Jari Vainiomäki^{d,*}

^a Labour Institute for Economic Research, Finland

^b IZA, Bonn, Germany

^c Pitkäsillanranta 3A, FI-00530 Helsinki, Finland

^d School of Management, University of Tampere, FI-33014, Finland

HIGHLIGHTS

- Twin data removes unobserved cognitive and non-cognitive ability differences.
- Identical twins obtain significant height–wage premium for women but not for men.
- Cognitive ability explains height–wage premium for men, discrimination for women.

ARTICLE INFO

Article history:

Received 2 January 2013

Received in revised form 28 May 2013

Accepted 22 June 2013

Available online 28 June 2013

JEL classification:

I10

J23

J31

Keywords:

Height

Weight

BMI

Height premium

Earnings

Employment

ABSTRACT

We use twin data matched to register-based individual information on earnings and employment to examine the effect of height on life-time labor market outcomes. The use of twin data allows us to remove otherwise unobserved ability and other differences. The twin pair difference estimates from instrumental variable estimation for genetically identical twins reveal a significant height–wage premium for women but not for men. This result implies that cognitive ability explains the effect of height on life-time earnings for men. Additional findings using capital income as the outcome variable suggest that discrimination against short persons may play a role for women.

© 2013 Elsevier B.V. All rights reserved.

1. Introduction

Non-economic attributes, such as beauty and height, are widely rewarded in the labor market (Hamermesh and Biddle, 1994; Berggren et al., 2010; Guéguen, 2012). Several empirical studies document that taller individuals both receive higher wages and have better employment prospects (e.g., Sargent and Blanchflower, 1994; Judge and Cable, 2004; Persico et al.,

2004; Case and Paxson, 2008; Hübler, 2009; Lundborg et al., 2013).² Previous studies have used cross-sectional information on earnings, but they have not been able to account for unobserved ability effects in the height premium, which we can accomplish in this paper using twin data.

There are many potential explanations for the existence of the height premium. Some authors argue that the effect arises because height is associated with non-cognitive skills, such as social skills

* Corresponding author.

E-mail addresses: petri.boeckerman@labour.fi (P. Böckerman), jari.vainiomaki@uta.fi (J. Vainiomäki).

¹ Tel.: +358 9 25357330.

² In this literature, earnings are more commonly used than employment as a measure of labor market success. In this paper, the term 'height premium' refers to both earnings and employment outcomes.

(Persico et al., 2004).³ Others maintain that cognitive skills are more important contributors to the height–wage premium (Case and Paxson, 2008).⁴ In particular, Case and Paxson (2008) argue that 30–50% of the height premium can be attributed to cognitive ability measured in childhood and youth. Thus, taller persons receive higher wages because they have better cognitive ability, which is rewarded in the labor market. Lundborg et al. (2013) claim that the positive effect of height on earnings can be explained by the positive association between height and a person's physical capacity.⁵ They demonstrate that physical capacity explains 80% of the observed height premium for men. Furthermore, the height premium has also been explained by a correlation between height and authority (Lindqvist, 2012) or by the existence of discrimination against short persons in the labor market (e.g., Cinnirella and Winter, 2009).

We contribute to the debate on two frontiers by examining the effects of height on both earnings and employment using twin data. Using data on non-identical twins is effectively the same as controlling for sibling effects (the shared family environment).⁶ Additionally, monozygotic twins have the same genes, implying largely similar cognitive abilities⁷ and usually the same early life experiences and largely the same social contacts (non-cognitive skills).⁸ With data on genetically identical twins, we can remove the otherwise unobserved ability differences that constitute the most prominent explanation for the height premium according to Case and Paxson (2008). Furthermore, all other unobserved factors that closely correlate with genetics (shared family environment and shared interactions of genes and family) are removed for identical twins. Therefore, our contribution is to use twin data to control for differences between individuals in cognitive and non-cognitive skills in the height premium estimation. Previous research has used various test score results and other indicators to control for these factors. However, such tests are incomplete measures of the underlying traits that they measure. We argue that with the use of twin data we can more completely control for these unobserved traits.

Secondly, to examine the cumulative effects of height, we match the twin data to register-based data on life-time labor market outcomes. This matching is important because previous studies on the height premium have almost exclusively used cross-sectional self-reported information on labor market outcomes. Short-term, cross-sectional measures of income, such as yearly earnings and hourly wages, contain idiosyncratic components that diminish the precision of the estimates (cf. Dahl et al., 2011). Register-based life-time earnings have much less measurement error than short-term measures. This accuracy increases the efficiency of the estimates, which is particularly important for relatively small samples, as in the twin pair differences. In our data, height is self-reported, but twin pair differences can be instrumented with measurements from

another time point to alleviate the attenuation bias caused by the potential measurement error in self-reported height.

We also examine explicitly the role of social skills in the height premium. This is important because Persico et al. (2004) argue that social skills explain the height premium. Furthermore, the literature has used only earnings as the outcome variable. We extend the literature by estimating separate effects on capital income that may provide additional insights about the underpinnings of the height premium. In addition, we evaluate the effect of height during different business cycle conditions, an effect that has been overlooked previously.

To the best of our knowledge, only one earlier study has used twin data to examine the height premium (Behrman and Rosenzweig, 2001). Their sample is restricted to female twins based on the Minnesota Twin Registry, and the estimates are obtained for cross-sectional, self-reported earnings. Using twin pair differences, Behrman and Rosenzweig (2001) find evidence for the existence of the height premium but no evidence for a wage penalty associated with obesity.⁹ Complementing the findings in Behrman and Rosenzweig (2001), we explore both male and female same-sex twins and thereby examine the possibility that outward attributes are treated differently in the labor market for men and women.

The remainder of the paper is structured as follows. Section 2 introduces the data. Section 3 outlines our empirical specifications. Section 4 reports descriptive evidence and the baseline estimation results. Section 5 discusses several additional specifications for assessing the robustness of the baseline results. Section 6 concludes.

2. Data

The twin data used in this study are based on the Older Finnish Twin Cohort Study of the Department of Public Health at the University of Helsinki. The initial twin data gathered in 1974 contain almost all same-sex DZ (dizygotic) and MZ (monozygotic) twins in the Finnish population born before 1958 (see Kaprio et al., 1979; Kaprio and Koskenvuo, 2002; Hyytinen et al., 2013; Maczulskij, 2013).¹⁰ The identification of twins was initially based on the comprehensive population register. Later, blood markers were tested for a small subsample of initially identified twins to confirm the identification of DZs and MZs. Height and weight are self-reported in the survey waves conducted in 1975, 1981 and 1990.¹¹ The twin sample also contains retrospective, self-reported information on weight differences between twins at the ages of 10, 20 and 30 years reported in 1990.

We link the twin sample to the FLEED (Finnish Longitudinal Employer–Employee Data) maintained by Statistics Finland using personal ID codes owned by every person residing in Finland. This matching is exact, and there are no misreported ID codes. We therefore avoid problems associated with errors in record linkages (e.g., Ridder and Moffitt, 2007). The FLEED sample is constructed from a number of different registers of individuals and firms maintained by Statistics Finland. We use FLEED to measure earnings and exact labor market status as an average of the annual values over the period 1990–2004.¹² In particular, FLEED contains information from Employment Statistics that records the number of employment months during the year originating from the state-run pension registers that cover all legal employment

³ Persico et al. (2004) use the National Longitudinal Survey of Youth (NLSY) from 1979 and focus on white men. Their baseline specifications explain wages with height measured at the ages of 7, 11, 16 and 33. Persico et al. (2004, p. 1033) find that, among all recorded heights, only height at age 16 has an economically large and statistically significant effect on adult wages. Their additional specifications take advantage of information on participation in high school social activities.

⁴ The study by Case and Paxson (2008) is partly based on the same data as the one by Persico et al. (2004) but Case and Paxson (2008) also use additional information on childhood cognitive ability.

⁵ Lundborg et al. (2013) use data from the Swedish military enlistment register over the period 1984–1997 and income data for 2003. They estimate wage regressions for 2003 with height, cognitive and non-cognitive skills, and physical strength as explanatory variables.

⁶ The one difference between using data on non-identical twins and siblings is that with non-identical twins there is no need to control for age differences. Björklund and Jäntti (2012) stress the importance of the family environment on various labor market outcomes using Swedish sibling data.

⁷ The twin correlation for general cognitive ability and verbal ability is in the range of 0.7–0.8 for identical twins and about half that amount for non-identical twins (see McClearn et al., 1997, p. 1562; Plomin and DeFries, 1998, p. 66).

⁸ There is a growing literature on the effects of early life experiences on subsequent labor market outcomes in economics (e.g., Case et al., 2005). Early life experiences may additionally shape personality (e.g., McCrae et al., 2000).

⁹ Behrman and Rosenzweig (2001) report that each additional inch of height is associated with a 3.5–5.5% increase in wages for female identical twins.

¹⁰ Dizygotic or 'fraternal' twins share, on average, 50% of their genes. There are some exceptions to the rule that MZ twins are genetically identical (Van Dongen et al., 2012, p. 11).

¹¹ Earlier studies have used the height information in the Finnish twin data (e.g., Silventoinen et al., 2000, 2001, 2004). However, none of these studies has examined the effect of height on labor market outcomes.

¹² We calculate the average earnings over the period 1990–2004 first by taking a logarithmic transformation of yearly earnings and then calculating the average. The idea is to normalize the earnings data and suppress the effect of outliers caused by the depression of the early 1990s and other transitional earnings effects.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات