ESRI
RESEARCH
BULLETIN
JANUARY 2019

MORE EDUCATION, LESS VOLATILITY? THE EFFECT OF EDUCATION ON EARNINGS VOLATILITY OVER THE LIFE CYCLE

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More education, less volatility? The effect of education on earnings volatility over the life cycle[1]

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OVERVIEW

Earnings volatility is a feature of modern labour markets as individual workers are subject to wage and hours variation. In the absence of full insurance against labour market adversities, volatility can have large effects on the welfare of individuals. Little is known about whether investments in education provide shelter against these economic uncertainties.

There are many reasons to expect that earnings volatility may be influenced by education level. When searching for jobs, more educated workers may be more effective and may achieve better job matches with lower subsequent earnings volatility. More educated workers are likely to be more mobile geographically and hence able to move region in order to reduce the effects of local shocks. Finally, more educated workers may be quicker to adapt to technological advances and/or have skills that are complementary to technology, and so may have less variable earnings in times of structural change within the economy. While these factors tend to imply lower earnings volatility for more educated workers, other factors suggest the opposite. More education typically comes with the likelihood of greater specialisation that may make the worker more exposed to specific shocks. The minimum wage may also lead to less volatility for those with lower education since it provides a lower bound on wages.

We look at male workers in the UK and use three different measures of earnings volatility – earnings variability (the individual-level standard deviation of earnings within 5-year periods), the degree of earnings cyclicality (how sensitive earnings

[1] This Bulletin summaries the findings from: Delaney, J. and Devereux, P., "More education, less volatility? The effect of education on earnings volatility over the life cycle", *Journal of Labour Economics*, Available online: https://doi.org/10.1086/698897

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are to economic booms and busts), and the probability of experiencing a pay cut over a 5-year period.

We use the New Earnings Survey Panel Dataset (NESPD), a UK administrative dataset that follows a random sample of 1% of the British population. We use data from 1983 to 2013 including the recession of the early 1990s and the recent Great Recession.

METHOD

Persons with more education may have higher ability and differ in other unobserved ways that lead them to have less or more earnings volatility independent of their educational attainment. Therefore comparing earnings volatility of those with various education levels may lead to incorrect estimates. To overcome this issue, we estimate a regression discontinuity design based on the 1972 change in compulsory schooling in the UK that increased the minimum school leaving age from 15 to 16.

We compare individuals who are born prior to 1957 with those born just after to overcome the issue of selection. Since the law affected only those born on or after September 1st 1957, individuals born after this date will be randomly given an extra year of education and thus we can get at the causal effect of education on earnings volatility.

POLICY IMPLICATIONS

We look at the effects of education on earnings volatility via the effects on earnings variability, earnings cyclicality, and frequency of real pay cuts of employed men in the UK. Across all three mechanisms, the results point towards benefits from education through sheltering men from the adverse effects of earnings shocks.

We find that more education leads to lower earnings variability at younger ages but with no discernible benefits for persons aged over 40. One reason may be because more education helps people find better and more stable job matches in their early career, but the effect becomes unimportant at older ages, when most individuals have found suitable job matches. We also find that more educated men have earnings which are less sensitive to the business cycle and are less likely to experience real pay cuts.

Our results identify another, and largely unexplored, avenue through which education may lead to positive rewards in the labour market. This is particularly important nowadays with the rise of the gig-economy and ever increasing precarious employment contracts. It also suggests that an increase in school leaving age may lead to positive benefits for the individual via lower earnings uncertainty.

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