Labour Economics 000 (2018) 1–22

Contents lists available at ScienceDirect

Labour Economics

journal homepage: www.elsevier.com/locate/labeco

Bad start, bad match? The early career effects of graduating in a recession for vocational and academic graduates☆

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ARTICLE INFO

JEL classification:
J23
J31
I26

Keywords:
Recent graduates
Wages
Job mobility
Mismatch

ABSTRACT

I estimate the effect of graduating in a recession on the early careers of high-educated vocational and academic graduates in the Netherlands between 1996 and 2012. Exploiting field-specific differences in economic conditions at graduation, I find that academic graduates suffer a 10% lower wage per percentage point decline in field-specific employment at graduation. The wage loss fades out six years after graduation. For vocational graduates I find substantially smaller effects at 6% initially, but they remain persistent at 1% after 8 years on the labor market. Employment effects are small. Poor entry conditions are associated with an increased probability of mismatch and employment at lower paying employers. The primary mechanism through which graduates catch up is mobility across jobs and sectors to better paying employers. Job mobility resolves the mismatch for academic graduates after 4 years on the labor market, while vocational graduates remain persistently more likely to be mismatched.

1. Introduction

Youth unemployment is a cause for concern in many countries. Especially during the Great Recession, when youth unemployment rates rose quickly in many OECD countries, there have been widespread worries about unemployment disrupting young people's lives and giving them a false start on the labor market. While short-term negative effects of entering the labor market in a recession are to be expected, some worry that young people will suffer long-lasting negative effects. If true, this type of hysteresis could lead to a lost generation of young workers who will be stuck in mismatches and low-paying jobs.

In this paper I consider the effects of labor market conditions at the moment of graduation on the early careers of tertiary educated graduates in the Netherlands.[1] Throughout the paper I examine the effects separately for graduates from universities, who take an academic track, and graduates from universities of applied science, who take a more vocationally oriented track. In terms of flexibility, the Dutch labor market is somewhere in between the very flexible labor markets in the US and the UK and the stringent labor markets of many other European countries. I use administrative matched employer-employee data on graduates from 1996 to 2012. My data allow me to follow graduates on the labor market for up to eight years after graduation. I employ a measure of field-specific employment conditions at graduation. This best approximates the labor market conditions that high-educated graduates face.[2]

The paper addresses two questions. First, does graduating in a recession affect graduates from the academic and vocational tracks in higher education differently? I consider effects on wages, but also on employment, self-employment and whether graduates are dependent on benefits. Second, how do vocational and academic graduates catch up to their peers who started in good times? I look at the quality of firms workers start at and consider how they recover through job mobility by looking at whether workers climb the job ladder and estimating the wage returns to job mobility.

With respect to the first question I find that academic graduates suffer strong initial wage effects of 10% for each percentage point decline (around half of a standard deviation) in field-specific employment at graduation. The wage losses gradually decline until they fade out after about five years on the labor market. The initial wage losses for vocational graduates are significantly smaller at close to 6% for each percentage point decline in field-specific employment at graduation. They

☆ I am grateful to Arne Brouwers for his work on the data and constructive discussions. I thank Didier Fouarge, Marloes de Graaf-Zijl, Robert Mahlstedt, Jan van Ours, Daniel van Vuuren, seminar and conference participants at EALE in St. Gallen (2017), ESPE in Glasgow (2017), SMYE in Halle (2017), Maastricht (2017), CPB (2016), the IZA Workshop on the Economics of Higher Education (2016) in Bonn, the editor and two anonymous referees for their helpful comments and discussion. Any remaining errors are my own.

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1 I examine graduates with degrees in ISCED categories 6 and 7. See Section 2.3 for more detail.

2 This measure is similar to Beiler (2017). It uses the employment conditions in the sectors that students with a given field of study usually end up in as the measure of labor market conditions at graduation.

https://doi.org/10.1016/j.labeco.2018.05.011
Received 1 November 2017; Received in revised form 13 May 2018; Accepted 14 May 2018
Available online xxx
0927-5371/

remain significantly smaller than for university graduates in the first four years. However, wage losses for vocational graduates remain persistent at about −1% up to at least 8 years after graduation. Employment probabilities for both academic and vocational graduates are negatively affected in the first three to four years on the labor market. While self-employment is not affected for vocational graduates, for academic graduates I find evidence of graduates substituting regular employment for self-employment in the first years after graduation. This is not persistent though, as for later years I find evidence for a reverse substitution of self-employment with regular employment. Finally, I find virtually no effects on benefit take-up.

On the second question I find that job mobility plays a critical role in recovering from initial wage losses for both academic and vocational graduates who start in a recession. They are both more likely to switch firms and sectors, and when they do switch, they gain more than their counterparts who started in a boom. Graduates are more likely to start in firms that pay lower wages in a recession and gradually move to higher paying firms. Both are also more likely to be mismatched in their early career. Interestingly, while switching sectors solves the initial mismatch for academic graduates, vocational graduates remain in sectors that are not typical for their field of study. This could at least partly explain the persistent wage losses for vocational graduates.

This study relates to two strands of literature. First, it relates to the literature on the effects of bad starting conditions at graduation on long-term labor market outcomes. Several papers have found that people who enter the labor market during a recession indeed suffer lower wages up to ten years or longer (Brunner and Kuhn, 2014; Kahn, 2010; Oreopoulos et al., 2012). This suggests that hysteresis might be a real problem, although more recent papers, covering both Europe and the US, find smaller losses for university educated graduates that disappear after three to five years on the labor market (Altonji et al., 2016; Cockx and Ghirelli, 2016; Hershbein, 2012; Liu et al., 2016; Speer, 2016). While most papers on the US only find lower wages for labor market entrants who started in a recession, papers looking at less flexible labor markets such as Belgium, Spain or Japan also find higher probabilities of non-employment (Cockx and Ghirelli, 2016; Fernández-Kranz and Rodríguez-Planas, 2018; Genda et al., 2010). The literature also finds that high-educated workers generally suffer more in terms of wages, while low-educated workers suffer more in terms of employment probabilities (Cockx and Ghirelli, 2016; Genda et al., 2010; Speer, 2016).[3]

The paper improves on this literature primarily by considering the effects separately for academic and vocational graduates. While some papers have explored differences between high and low educated workers (e.g. Cockx and Ghirelli, 2016; Genda et al., 2010; Oyer, 2006; 2008; Speer, 2016) there is as far as I'm aware no study that examines the differential effects for academic (general) and vocational graduates.[4]

The paper also adds to this literature by considering in detail how job mobility contributes to catching up. Other papers also consider the mechanisms of catching up. Motivated by a model of task-specific human capital (as in Gibbons and Waldman, 2004) most papers consider the role of the first firm in explaining the initial and persistent losses (Brunner and Kuhn, 2014; Liu et al., 2016; Oreopoulos et al., 2012). They generally find that the first employer plays an important role in explaining the losses. Recent papers also highlight the role of mismatch. They find that workers who start in a recession are more likely to work in sectors that are not typical for their field of study (Altonji et al., 2016; Liu et al., 2016). Oreopoulos et al. (2012) also consider the role of job mobility for Canadian college graduates. They find that job mobility increases in the first five years on the labor market. Primarily graduates at the top end of the skill distribution are more likely to switch firms, while those at the bottom remain stuck at lower quality firms. After the first five years, the remaining catching up is within the firm. In addition to considering job mobility and firm quality, this paper is the first to consider how young workers recover through climbing the job ladder. There is recent evidence that during recessions the quality of vacancies is lower and that the probability of moving up the job ladder declines (Haltiwanger et al., 2017; Moscarini and Postel-Vinay, 2016). This paper confirms for the Netherlands that workers are indeed more likely to start at lower rungs of the job ladder in a recession. While most workers recover through job mobility, I do find some evidence that up to 8 years after graduation workers are more likely to remain lower on the job ladder.

Finally, my data allow me to take into account selection bias much more thoroughly than most other papers. A causal effect of the unemployment rate at graduation on later outcomes is only identified if students do not adjust their timing of graduation to labor market conditions. I find evidence that students do seem to adjust their timing. They are more likely to obtain an additional degree if economic conditions at graduation are bad, and the composition of the graduation cohort is different in bad economic conditions. I employ an IV strategy that requires detailed data on when students enter higher education and their expected duration to deal with this problem. Other studies often do not observe the date of entry or graduation, and impute the year of school leaving using date of birth and expected school duration.[5]

Second, the paper relates to the literature on the benefits of vocational versus general education. Most of this literature has focused on whether vocational education eases the transition from education to the labor market.[6] The findings are mixed. Some studies indeed find that students with vocational education have better employment outcomes in their early career (Hanushek et al., 2017) but others find no differences (Fersterer et al., 2008). Studies focusing on the long-run outcomes generally find no differences between general and vocational tracks (Hall, 2016; Malamud and Pop-Eleches, 2010; Oosterbeek and Webbink, 2007). I primarily add to this literature by considering the effects of bad starting conditions on the transition from education to the labor market for vocational and general educated workers.[7] If vocational education eases the transition from education to work, one might expect that it also helps with finding a job in a recession. On the other hand, if there

[3] There is also a small Dutch literature on this topic. Van Ours (2009) and Fouarge (2009) show that there are no long-term differences in unemployment rates between cohorts entering the labor market in the recession of the 1980s and cohorts who entered just before. Erpelinck and Van Sonsbeek (2012) look at multiple cohorts and find that primarily tertiary educated graduates from the early 90s suffer long-term negative effects on their wages. Wolbers (2014) uses repeated cross-sections covering 1993–2011 and finds only short-term negative effects of entering the labor market during a recession on employment and job level. Limitations of this literature are that they use cross-section data, that they do not know the actual moment of labor market entry and that they do not take into account possible selection bias due to people adjusting their moment of labor market entry to the labor market conditions.

[4] A somewhat related study by Humburg et al. (2017) does examine the effect of the unemployment rate at graduation and self-reported "field-specific" skills on the probability of being unemployed or over-educated. They use a survey on European graduates for 17 countries. They find that graduates with high field-specific skills are less likely to be unemployed 5 years after graduation, but they find no interaction between field-specific skills and the unemployment rate at graduation. However, they also don't distinguish between vocational and academic tertiary educated workers.

[5] Exceptions are Oreopoulos et al. (2012), who present some estimates using the same IV strategy as I do, but finds no differences, and Kondo (2015), who predicts age of entry by the highest degree attained, rather than using the actual date of entry into education.

[6] See Ryan (2001) and Wolter and Ryan (2011) for surveys on this literature.

[7] Hall (2016) is the only paper who considers the effect of the unemployment rate at graduation in a robustness analysis and she only examines it for workers who already have at least 10 years of working experience. She finds no differences between those with more general and those with more vocational education.