



## Who chooses teaching under different labor market conditions? Evidence from West Germany, 1980–2009



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### HIGHLIGHTS

- I examine changes in teacher labor market conditions over three decades.
- I examine who self-selects into teaching under different labor market conditions.
- Earnings have not declined over time, likewise, academic aptitude has not declined.
- Employment prospects have fluctuated greatly, influencing who is motivated to choose teaching.

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### ABSTRACT

To shed light on this question, this paper analyzes trends in labor market conditions and trends in teacher graduates' characteristics over three decades. Based on representative data from West Germany, it shows that teacher earnings have not declined over time. Likewise, there is no decline in academic aptitude among teacher graduates. Unemployment risks, on the other hand, have fluctuated greatly. In times of high unemployment risks, the likelihood to enter teaching was low, especially for persons with pronounced extrinsic job-security motivations. This changed markedly in recent years, when employment prospects became auspicious.

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### 1. Introduction

Teacher labor markets in many countries have experienced major changes over the past decades. Several countries report that teacher pay has not kept up with earnings in other occupations (U.S.: Flyer & Rosen, 1997; Hanushek & Rivkin, 2007) (AUS: Leigh & Ryan, 2008) (U.K.: Dolton, 2005; Nickell & Quintini, 2002). What is more, many countries face cyclical waves of teacher shortages followed by surpluses (Watt et al., 2012, p. 791). This has left different cohorts of new teachers with strikingly different career prospects. This paper assesses whether such fluctuations influence self-selection processes into teaching. Do labor market conditions influence who enters the profession? This question is timely in light of current debates on teacher quality and pressing teacher shortages in many countries, where a major challenge is to optimize the

pool of individuals from which teacher candidates are drawn (OECD, 2005; Schleicher, 2011; UNESCO, 2013). To inform teacher education systems about qualitative characteristics of the applicant pool of teacher candidates under different labor market conditions, this study analyzes the teacher labor market in West Germany over the past three decades. It then traces changes in academic aptitude and selected career choice motivations of student teacher graduates over the same time-period.

So far, little is known on the interplay between labor markets and self-selection into teaching. Findings from the current study will help to fill this knowledge gap. First, it contributes to the literature by describing – for the first time – trends in earnings and unemployment risks of teachers relative to other tertiary-educated workers in West Germany. Second, while some studies analyze pre-training characteristics of student teachers relative to other university students (Gold & Giesen, 1993; Klusmann, Trautwein, Lüdtke, Kunter, & Baumert, 2009; Neugebauer, 2013), this study is the first to describe trends in such characteristics over several cohorts. It focuses on a limited set of characteristics – academic

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aptitude, as well as intrinsic (subject-interest) and extrinsic (job security) career choice motivations. These characteristics are chosen, because they are available in different cohorts, are correlated with the study success of student teachers (see below), and can arguably be influenced by labor market conditions. On a more general take, the paper shows how expected labor market returns may influence career choices.

### 1.1. Academic aptitude and motivation among teacher candidates

The recruitment of talented teacher personnel is a central goal for most educational systems (OECD, 2005; Schleicher, 2011). Such recruitment goals are based on the notion that “talented” persons can be identified prior to in-service teaching. It is argued that academic aptitude and certain motivations constitute important preconditions for how well and motivated a person learns during teacher education (e.g. Blömeke, Suhl, Kaiser, & Döhrmann, 2012; Klusmann, 2013; Mayr, 2010).

The available empirical evidence supports these conjectures, with some limitations. Results from several recent studies in Germany provide evidence that academic aptitude, measured in terms of *grade point averages* (GPA, henceforth) obtained in upper secondary graduation certificates (the Abitur), influences the amount of professional knowledge that student teachers accumulate by the end of their study course, net of teacher training effects (Blömeke & Buchholtz, 2011; Blömeke et al., 2012; Kleickmann & Anders, 2011; Kleickmann et al., 2013, p. 103; König, Tachtsoglou, & Seifert, 2012; Kunina-Habenicht et al., 2013). In addition to GPA, *teaching motivations* are considered to be related to both positive and negative outcome variables among beginning teachers (see Watt & Richardson, 2007). However, research on the predictive value of motivations is still in its fledging stages. What we know so far is that especially intrinsic motivation (i.e. doing something because it is inherently interesting or enjoyable) results in high-quality learning (Ryan & Deci, 2000). In teacher research, intrinsic reasons to choose teaching are often distinguished into altruistic-pedagogical and subject-related motives (Brookhart & Freeman, 1992; Watt & Richardson, 2007). While altruistic-pedagogical motives (example item: “I love working with children”) are mostly unrelated to accumulated teacher knowledge, several studies find that subject-related motivation (example item “I am interested in mathematics”) is a relevant determinant for the amount of accumulated professional knowledge (Blömeke et al., 2012; Kleickmann et al., 2013, p. 103; König & Rothland, 2013). Furthermore, subject-interest correlates positively with learning strategies, study satisfaction (Künsting & Lipowsky 2011), and college grades (Blömeke, 2009), and negatively with college drop-out intention (Blömeke, 2009; Heublein, Hutzsch, Schreiber, Sommer, & Besuch, 2010). The effects of extrinsic motivation (i.e. doing something because it leads to a separable outcome) are less clear, and correlations are typically weak. According to Watt and Richardson (2007) extrinsic motivations (also named ‘personal utility values’) such as job security, transferability, and time for family, relate negatively to later planned persistence and career choice satisfaction. Among student teachers, the strongest extrinsic career choice motivation is “job security” (König & Rothland, 2013; Watt et al., 2012). Blömeke et al. (2012) find negative effects of such motivations (example item “I seek the long-term security associated with being a teacher”) on different professional knowledge dimensions among future primary school teachers. However, they cannot replicate this finding among secondary school teachers at the end of their teacher education program (Blömeke, Kaiser, & Döhrmann, 2011). One reason for the indefinite associations might be that persons with high extrinsic motivations can have high intrinsic motivations *at the same time*. If a person is

characterized by high (extrinsic) job security motivations *and* high (intrinsic) subject-related motivations, no negative outcomes are to be expected. In turn, if a person’s motivational profile is dominated by security but not subject-related motivations, chances are that this person will invest less energy and accumulate less professional competence during teacher training.

### 1.2. Changes over time in response to labor market shifts?

In sum, the recruitment of personnel with high academic aptitude and teaching motivations that include high subject interests is one important cornerstone for raising professional teacher competence. Have these characteristics remained stable over the past decades or have persons with different characteristics been attracted to teaching, because the job environment has changed? Clearly, a teacher’s job environment is rather stable across time, because most features related to the task of teaching itself are relatively stable – teachers transfer knowledge, work with children and youth, and manage complex classroom environments. For this reason, one would assume rather similar characteristics of different cohorts of teacher trainees. However, some features related to the external conditions of the profession can change, such as earnings and employment prospects. Have these external conditions changed, and has this had an effect on who self-selects into the profession?

In recent years, debates on teacher recruitment have intensified as “some countries [...] express concern about the quality and motivation of a proportion of teacher trainees” (OECD, 2005, p. 29). These concerns are mainly based on studies by economists, showing that the academic aptitude of future teachers has been declining relative to other college-educated workers over the past decades in the U.S., U.K., and Australia (Bacolod, 2007; Corcoran, Evans, & Schwab, 2004; Hoxby & Leigh, 2004; Lakdawalla, 2006; Leigh & Ryan, 2008; Nickell & Quintini, 2002; Stoddard, 2003). The most frequently mentioned explanation for declining aptitude is related to shifts in earning opportunities outside of teaching. Over the course of the past decades, women especially have increasingly gained access to alternative occupations with attractive wages. Based on the underlying argument that individuals aim to maximize personal income, and that high aptitude individuals have the highest propensity to achieve high earnings, it is believed that increased labor market opportunities outside of teaching have detracted high-ability individuals – especially women – from teaching. Bacolod (2007) tests this hypothesis with U.S. data and finds indeed that where teacher wages became relatively less attractive, both men and women were less likely to choose teaching as their occupation, especially those with high academic aptitude. Recent calculations show that teachers’ wages in Germany are relatively good, both, in comparison with other tertiary-educated workers and in comparison with other countries (OECD, 2012; pp. 456–466; Weishaupt & Huth, 2012, pp. 97–98). But how have they developed over the past decades? If the theoretical argument holds, one would expect the same link in Germany, i.e. *declining academic aptitude in case of relative earnings decline*.

The mentioned studies have focused on earnings, but earnings are clearly not the only external return dimension influencing career choice, or the choice of associated fields of study. A recent study from Germany provides evidence that higher graduate unemployment in a given discipline reduces the share of students opting for the associated field of study, with a time lag of several years (Reisz & Stock, 2013). This is especially true for teacher studies, where employment opportunities are restricted to a certain employment sector. As mentioned in the previous section, the strongest extrinsic career choice motivation among student teachers is “job security”. How do individuals with high job security

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