Why education matters to employers: a vignette study in Italy, England and the Netherlands

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Chapter 2

Education and employers’ hiring behaviour: A three-layered framework
2.1. Education and entry into the labour market: employers’ perspectives

It is widely acknowledged that employers’ assessment of the educational background of prospective hires significantly shapes the opportunities of youth to enter the labour market (e.g. Breen, Hannan, and O’Leary 1995). Education is especially important at an early stage of one’s career, when work experience is still limited and employers can base their hiring decisions on few alternative sources of information (Bills 1988a). Less clear is the reason why education matters to employers. Hirsch (1976: 47) summarized the gist of the discussion already in the 1970s, observing that “the fact that employers pay for evidence of educational success – for the educational certificate or credential – does not indicate what they are buying”.

Returns to educational investment are consequent upon entry into the labour market (Bills 1988b). In turn, job entry is the ultimate outcome of the matching between job seekers and available jobs during the hiring process. Job matching is therefore very important when studying the relationship between education and labour market gains. Individuals who are directly involved in and responsible for staffing decisions, i.e. employers, are central actors in the process of labour market stratification (Bills 1992, 2003) and their hiring decisions serve as gatekeeping mechanisms to match job-seeking individuals to available jobs (Rivera 2012). Regrettably, sociological research on the relationship between education and labour market outcomes has largely ignored the employers’ perspective: the available evidence on the way education influences individual employment trajectories is mostly based on supply-side analyses.

Due to data limitations, comparative studies measured the education payoff from surveys of school leavers or of job holders (e.g. Müller and Shavit 1998; Müller and Gangl 2003), sometimes designed for other purposes or not easily comparable internationally (Raffe 2008). Two large-scale projects mapped the employability of graduates in several European countries and Japan, but their scope was restricted to tertiary education leavers and employers were not targeted (Schomburg and Teichler 2006; Allen and Van der Velden 2011). Far fewer studies of school-to-work transitions concentrate on employers’ perspectives. Existing works are limited to one single country (Bills 1988b; Miller and Rosenbaum 1997; Rivera 2011, 2012) or, when comparative, findings are only superficially related to the broader institutional context (Arthur, Brennan, and De Weert 2007; De Weert 2007).

The lack of systematic inquiry into the role of education in employers’ hiring practices has been described as the most serious limitation of comparative research on school-to-work transitions (Gangl, Müller, and Raffe 2003: 303). At the theoretical level, these studies commonly define labour market entry as the result of allocation decisions of both employers and employees. However, empirically, they predominantly use employee data to test theories about why
education matters to employers during the hiring process, taking income or socio-economic status as main dependent variables (cf. Rosenbaum et al. 1990; Bills 2003; Van de Werfhorst 2011a for exhaustive reviews). Recent contributions have focused on other aspects of the educational pedigree besides level of education (e.g. field of study, grades, vocational versus academic orientation of the curricula, study duration). These characteristics were related to a larger series of outcomes, including the occurrence of unemployment spells in the early career (Shavit and Müller 2000), the duration of the job search (Bernardi 2003) and the likelihood of finding a permanent job (van der Velden and Wolbers 2007). All these studies, however, were based on retrospective data gathered from surveys of employees or school-leavers. While they certainly lend us valuable insights into post-hire attainments in a number of countries, they are not concerned with how the transition into a job comes about, nor do they focus on employers. A quote from a study of employers’ perceptions and use of educational credentials in the Irish institutional context convincingly illustrates this point.

“Educational and other qualifications only have value in the labour market to the extent that employers make use of them. In turn, employers’ use of such qualifications depends upon how they interpret them. So, before we can determine what the returns to education might be, we must first seek to measure education in a way that corresponds as closely as possible to the way in which education is perceived and used by those who determine what these returns will be – namely, of course, employers. The returns to education thus arise from employers’ use of available information during the recruitment process.”

Breen et al. (1995: 71)

However, the same study did not focus on employers’ hiring behaviour, but rather inferred it from school-leaver data, a methodology widely applied elsewhere (e.g. Gangl 2001; Bernardi 2003; Müller 2005; Scherer 2005; Iannelli and Raffe 2007; Kogan and Unt 2008; Smyth and McCoy 2011). This lack of attention to the demand-side of the match, i.e. employers, is unwarranted as “demand-side processes cannot be unproblematically inferred from supply-side data” (Bills 1992: 13). As education is a crucial determinant of youth labour market opportunities, the importance that employers attach to education while hiring prospective employees plays a fundamental role in school-to-work transitions and is a crucial site for the reproduction of social stratification.

Already in the 1980s, scholars adhering to the agenda of ‘new structuralism’ stressed that employers are the agents primarily responsible for matching applicants to job vacancies in a particular organizational and institutional context (Baron and Bielby 1980). Granovetter (1981: 16) criticized status attainment research and human capital theory for paying little heed to the agency of employers. In his view, even the formulation ‘rates of return’
continues to give explicit causal priority to individual-level variables while leaving unexplored the way these characteristics are converted into gains and resources – such as, for instance, personal income – via occupational entry¹. More recently, Bills (2003: 442) observed that both income and socio-economic attainments are ultimately contingent on a hiring transaction and urged researchers to recast the dependent variables of earnings and socio-economic attainment as if they were resulting from processes of job matching. Jackson, Goldthorpe, and Mills (2005) and Goldthorpe and Jackson (2008) argued that employers are the central actors in mediating intergenerational class mobility, and that education has an effect only to the extent that it is taken into consideration by employers when deciding on hiring, retentions and promotions. Jackson (2009: 670) proposed to think of class inequalities in mobility chances as resulting from “micro-level decisions by prospective employees and employers”. Unfortunately, in spite of various calls for including employers in the analysis of the education payoff on the labour market, the role of education in employers’ hiring behaviour still remains underexplored in comparative stratification research.

Employers’ hiring behaviour has more often been the focus of urban sociologists and labour economists interested in the study of labour market discrimination. Their works targeted differential hiring by race (Moss and Tilly 2001), gender (Goldin and Rouse 2000), or in low-wage labour markets typically employing the urban underclass of metropolitan areas (Holzer, 1998; Pager, Western, and Bonikowski 2009). The title of the contribution of Kirschenman and Neckerman (1991) - “We’d love to hire them, but…” - illustrates the way employers have been studied within this literature: individuals whose behaviour, consciously or not, is conducive to discriminatory practices. Education, in these works, is kept constant by design. At the opposite end of the occupational hierarchy, the hiring process of elite firms has been studied by cultural and organizational sociologists, usually in the United States (Gorman 2005; Rivera 2011). Main goal of this type of research is to show that education is used as a marker for status distinction that reproduces socioeconomic cleavages in society.

A more proximate area of research that did concentrate on employers’ perceptions of educational qualifications is the study of school-employer linkages, both informal and institutional, on the basis of qualitative interviews

¹ By way of example, one of the most widely used analogies for the role of educational credentials in channelling school leavers to the labour market and influencing the rewards therein generated is the metaphor of a currency, and of its depreciation (Hirsch 1976; Collins 1979). The importance attached by employers to education has pushed many students to obtain a degree at an ever-higher level; yet, as a consequence of the sheer increase in the number of graduates, the educational requirements of jobs have ratcheted up, leading to credential inflation (Collins 1979). From this perspective, one can observe that, as with any other currency, education is related to labour market rewards only if its value is recognized by employers. Employers’ agency is therefore paramount.
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with American employers (Miller and Rosenbaum 1997; Rosenbaum and Binder 1997). Alternatively, employers’ hiring practices have been inferred from interviews with teachers and job placement officers of high schools and vocational colleges (Rosenbaum and Kariya 1989; Brinton and Kariya 1998; Deil-Amen and Rosenbaum 2004). This type of scholarship, however, has not developed within Europe and country comparisons have been limited to the United States and Japan.

In this book, my first contribution to the very extensive field of research on school-to-work transitions is to explore the relationship between education and labour market entry in three European countries from the perspective of employers. Considering the lack of empirical evidence of employers’ interpretation of educational qualifications, I set out to study employers’ hiring preferences by focusing on “the process of evaluation itself” (Rivera 2011: 72), and analysing “how employers acquire, evaluate, and act on the information provided by educational credentials” (Bills 2003: 442). In the next sections, I will lay out a theoretical framework for the study of employers’ hiring behaviour. Employers’ decision-making at the micro-level will be described in relation to a layered set of incentives and constraints at both the macro-level (i.e. the country) and the meso-level (i.e. the hiring organization) of analysis. Inspired by the tenets of new institutionalism in sociology (Brinton and Nee 1998), I will propose to contextualize the question why education matters to employers during the hiring process in the institutional and organizational context in which employers operate. This will offer a conditional support (Van de Werfhorst 2011b) for three well-established theories about the mechanism why education is rewarded by employers at point of hire.

2.2. Why education matters: micro-level explanations

2.2.1. Three matching mechanisms

Countless contributions in stratification research have been dealing with the question why education pays off in the labour market. Nevertheless, the mechanisms through which returns to education are brought about are still the object of an unsettled debate. The theories that have been proposed to account for the relationship between schooling and socio-economic achievements come from either economics or sociology. As observed by Bills (2003), the two disciplines have traditionally been pitted against one another in most literature reviews. The main difference in their approach is whether the focus lies on the effect of education on the marginal productivity of employees and the way this productivity gain is translated into wages, as often encountered in economics, or rather on the labour market structures that insulate workers from competition within closed employment relationships, like in sociology.
Three main groups of theories have been identified and reiterated in several overviews of the education effect on school-to-work transitions (cf. Rosenbaum et al. 1990; Rubinson and Browne 1994; Ballarino and Bernardi 1997; Bills 2003; Ballarino 2007; Van de Werfhorst 2011a). At their core, the three groups of theories provide alternative explanations as to why education is rewarded in the labour market. They differ from one another in the underlying assumption about how the relevant actors (employers, but also job seekers) interpret educational qualifications at point of hire. Therefore, three different job matching mechanisms can be related to these theories, an aspect that I will now introduce.

**Human capital theory**

A widely recognized explanation for the positive effect of education on income is offered by human capital theory, which originated in economics (Mincer 1958, 1974, 1993; Becker 1962, 1964; Kaufman 1994; cf. Blaug 1976; Cain 1976 and Card 1999 for critical analyses of what human capital theory has been able to accomplish, and what has been less able to explain). A sociological variant to human capital theory has been proposed by Tomaskovic-Devey, Thomas, and Johnson (2005), who describe human capital acquisition as a social process that results from the joint actions of employees, employers and co-workers. The concept of rate of return on the education investment is at the core of human capital theory. Returns to education are measured as the expected yield of schooling in terms of income gains, net of the costs incurred while spending years in education (direct costs and foregone earnings). Both a private and a social return can be expected (Psacharopolous 1981). At the individual level, the return to education is the increase in earnings associated with an augmented productivity (private return). At the aggregate level, a higher number of highly educated workers translates into economic growth (social return). The argument is largely attuned to rational choice theory: education is an investment through which individuals acquire skills that make them directly productive for the jobs they are going to perform. Education pays off by securing a higher marginal product, for which individuals receive an earning premium. Time spent in school automatically instils into workers productive skills and competencies that translate into higher wages. For this reason, the matching mechanism associated with human capital theory can be

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2 This distinction closely parallels the opposition between, on the one hand, the human capital (Becker 1964) and status attainment models (Blau and Duncan 1967) with a focus on individual level variables, and on the other hand, the structuralist turn of the 1980s which stressed the role of structural variables such as industries and occupations in reproducing social stratification (Baron and Bielby 1980; Kalleberg and Berg 1987).

3 Ballarino (2007: 245) stresses that the relative emphasis placed on employers, job seekers or education systems as a whole varies across the three theoretical perspectives.
called a \textit{productivity-enhancing mechanism}.

A number of concerns can be raised on the validity of associating education with productive skills. Specifically, how can productivity be measured? Is it measurable at all? Which skills does productivity refer to? A common way of empirically proving private returns to education has been through Mincerian earnings equations (named after Mincer 1958) that estimate the wage premium associated with additional years of schooling, controlling for labour market experience. As argued by Weiss (1995: 135), the resulting coefficient has been interpreted “as an estimate of the productivity-enhancing effects of education”. Relevant to our discussion, employers reward education because it renders individuals more productive. An implicit assumption of human capital theory is that employers, at point of hire, have complete information regarding the productivity of future employees, as this information can be directly obtained from one’s investment in education. A second assumption is that returns to education are thought of as evenly affecting the entire range of occupational levels and titles (as critically observed in Goldthorpe 2009). Both these assumptions have been disputed by the theoretical explanations presented below.

\textit{Sorting models of education}

Weiss (1995) has grouped arguments referring to signalling, screening and job competition under the label “sorting models of education”. All these models challenge the main tenets of human capital theory. Signalling (Spence 1973, 1974) and screening (Arrow 1973; Stiglitz 1975) theories posit that the marginal productivity of job candidates cannot be revealed \textit{ex-ante} before labour market entry. In the absence of complete information about the expected productivity of prospective employees, employers rely on signals while making hiring decisions. Employers are acquiring a lottery ticket when hiring, as the competence with which an individual would perform if hired is unknown. Nevertheless, employers can “estimate the conditional probability of competence, given the observable characteristics of the individual who is applying for a job” (Spence 1974: 7). Education is one of the signals that employers use to assess such probability. Importantly, signals can be altered or adjusted by the individual as to meet employers’ demands. Acquiring education is one way to signal the potential for future job competence, and this activity is called by Spence “signalling”.

Stiglitz (1975) calls education a \textit{screening device}, used by employers to sort out individuals and acquire information about characteristics that make them more productive on the job: e.g. motivation, perseverance, potential for future learning, disposition to show up on time and meet deadlines, etc. Employers have an incentive to screen individuals, as it makes the distribution of wages according to marginal productivity more efficient: in the absence of screening, incomplete information would introduce “a wage tax on the more able, a wage
subsidy on the less able” (Stiglitz 1975: 287). Length of study and grades are indicators, related to schooling, that according to the author function as “surrogates for ability”.

The job competition model of Thurow (1975) adds to these perspectives the idea that educational qualifications not only serve as proxies for unobserved productivity but also as indicators of trainability, i.e. one’s capacity to learn new skills. According to this perspective, skills are mainly acquired on the job and not directly provided in school. Given that an employee would necessarily require some time to become competent in the job, employers hire on the basis of expected training costs. Two different queues are simultaneously responsible for channelling workers into jobs and occupational allocation results from this dual-queuing process. On the one hand, employers rank job applicants within labour queues on the basis of available information about characteristics that are thought to affect on-the-job trainability; on the other hand, job-seekers self-select themselves into job queues depending on the structure of available jobs. The mechanisms through which employers order job applicants within labour queues and job-seekers rank positions within job queues are simultaneously interacting and lead to the occurrence of a job match. It is important to stress that, in a queuing model, the value of a given applicant is not absolute, but relative to the distribution of all other competing applicants simultaneously queuing for the same job position. Therefore, education functions as a signal of expected trainability and it can be considered a positional good: what becomes crucial is one’s position in the queue relative to the other competing applicants (Hirsch 1976; Ultee 1980). The job matching mechanism implied by this perspective can be described as trainability-improvement mechanism.

A few studies have compared human capital and signalling explanations for the association between education and labour market outcomes (Lang and Kropp 1986; Groot and Oosterbeek 1994; Weiss 1995; Bedard 2001). Both the human capital theory and the signalling/screening arguments imply a link between education and productivity (Bills 2003, Van de Werfhorst 2011a). Human capital theory assumes that this productivity gain is a direct result of the investment in education, whereas according to signalling and screening

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4 If education is a positional good, a high number of highly educated applicants reduces the value of education as a signal. Employers react with inflated hiring standards, placing higher educational credentials as entry requirements (Collins 1979). This behaviour creates an incentive for people to acquire education, thus increasing the supply of highly educated candidates at the macro level, possibly distorting the allocation process (Spence 1974; Hirsch 1976). Positional competition “yields gains for some only by dint of losses for others” and serves as a “general filtering device through which excessive demand has to be matched to available supply” (Hirsch 1976: 52). The distinctive nature of positional goods translates, at the macro level, in a crowding-out effect: people with a higher level of education are selected for jobs for which a lower level of education used to suffice, pushing the lower-educated down the labour queue, and those at the lowest ranks into unemployment.
perspectives education is a proxy for unobservable characteristics that are related to productivity and lower the cost of schooling for the individual, facilitating individuals’ chances to pass through subsequent transition points, or filters (Arrow 1973). However, it is very difficult to distinguish empirically between the two explanations, mainly because detailed data of the type of knowledge obtained in school are lacking (but see Semeijn et al. 2005, 2006). Productivity differences captured by earning differentials may be due to the specific knowledge acquired in schools as well as abilities that were already present prior to schooling (Weiss 1995). Some authors have even tried to combine the two views, as in the training model of Glebbeek (1988) or the job assignment model of Sattinger (1979) and Teulings (1995).

Social closure theories: closure by degrees and by networks

Contrary to the previous perspectives, a third group of theories neglects that employers base their hiring decisions on rational estimations of future productivity gains. This last current of thought groups together neo-marxist theories (Bowles and Gintis 1976, 2002; Brown 1995), cultural reproduction theory (Bourdieu and Passeron 1977), credentialism theory (Berg 1970; Collins 1979) and closure theories (Weber 1922 [1978]; Parkin 1979; Murphy 1988; Weeden 2002). Only the last two will be discussed in this book. At their core, closure theories refer to questions of access to occupations. Education is regarded as a legitimized means for reproducing patterns of social inclusion and exclusion. According to the social closure perspective, obtaining a degree is all that matters to employers, independent of productivity reasons: therefore, this matching mechanism can be described as closure by degrees.

Two different interpretations of closure by degrees can be distinguished in the works of Collins (1979) and Weeden (2002). Collins (1979: 1007) argues that skill requirements of jobs are not related to processes of modernization and technological change as the functional theory of stratification would

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5 In passing, other theories can be related to the ‘social closure’ group. Bowles and Gintis (1976; 2002), inspired by a Marxian critique of educational meritocracy, stress the importance of incentive-enhancing preferences that arise from the demands of a particular job. Attributes such as motivation, work effort and cooperativeness are fostered by school attendance and facilitate the enforcement of an employment contract that is, by nature, implicit and incomplete. In a similar vein, Brown (1995: 56) argues that one of the functions of abstract higher educational contents is to inculcate to graduates “collaborative behavioural proclivities”, so that they would be more compliant in the workplace. Schools might be viewed as institutions that provide (and produce) reliable agents: newly hired employees can be trusted to act in the organizational interests and to avoid wrongdoing. Finally, Bourdieu and Passeron (1977) coined the term cultural capital to indicate that education sorts students on social class: pupils with highly educated parents are socialized into the dominant culture since early childhood, and can more successfully participate in the school system as they share the same cultural predisposition of teachers and evaluators. These three perspectives on social closure are reported for reasons of completeness and will not be addressed further.
have it, but rather “represent whatever behaviour is settled upon in bargaining between the persons who fill the positions and those who control them”. In his widely known book *The Credential Society*, the author referred to the “myth of technocracy” to claim that the types of skills learned in school bear little to no relationship with the workplace demands. According to the author, the sheer increase in higher education enrolments has not been coupled with a parallel growth in the demand for highly skilled labour. The continuous upgrading of occupational profiles has led to a self-sustaining process of credential inflation in which escalating occupational entry requirements have evolved independently of the job demands. From a similar perspective, Berg (1970) provocingly named the education system a “great training robbery”.

While Collins (1979) is more focused on entry requirements that have continuously ratcheted up as a by-product of educational expansion, Weeden (2002) is more concerned with the fact that educational credentials are used by occupational incumbents (and their representatives) to restrict access to occupations. She identifies four “closure strategies” through which barriers around occupational entry can be erected. Of particular importance, for this discussion, is the strategy of restricting the labour supply: occupational groups use educational credentialing to generate “an artificial scarcity of individuals who have the legal, technical or socially recognized ability to perform the bundle of tasks provided by that occupation” (Weeden 2002: 61). When closure occurs by means of educational credentials, legal restrictions on the supply of labour that is allowed to perform specific job tasks lead to the generation of rents (Sørensen 1996). Educational credentials are the result of negotiations between representatives of employers and employees (e.g. employer associations, trade associations, trade unions) with the aim to protect occupational incumbents6.

Whereas for the signalling and screening theories a prerequisite for effective market signalling to take place is that “the high-productivity types have lower educational costs than the others” (Spence 1974: 15), the closure argument does not require such requisite to hold. Educational credentials are signals in the sense that they are recognized and valued by employers during the hiring process, but without the assumption that they make individuals more productive. Educational credentials function as markers of knowledge: what is important is not that education certifies the acquisition of knowledge, but rather that employers and occupational gatekeepers behave as if it did. A similar perspective describes education as a social charter (Meyer 1977; Meyer and Rowan 1977; Persell and Cookson 1985): educational credentials are recognized by employers as legitimate representations of skills and acquired learning because schools are societally accepted as an institutional system that

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6 A similar argument can be made for entry into the professions (Abbott 1988): the arguments put forth within the sociology of professions are nearly identical to the ones of social closure theory.
has the authority to create bodies of knowledge.

Social closure can also be promoted by networks. A few authors have observed that, rather than with a shortage of information, employers are faced with a lack of access to information that is, at once, trustworthy and not exceedingly costly to obtain. Rosenbaum (2001: 149) reports that “employers have access to much information, but they mistrust the dependability and usefulness of information from people with whom they have no relationship”. Extensive qualitative data collected by Rosenbaum and Binder (1997) and Miller and Rosenbaum (1996) show that signalling processes do not occur in an institutional vacuum and employers place different levels of trust in the information they use to assess candidates. This literature has also focused on the Japanese job placement system, jointly managed by schools and firms, in which hiring employers allocate jobs to different schools according to fixed quotas (Rosenbaum and Kariya 1989; Brinton and Kariya 1998; Brinton and Tang 2010). According to these studies, trust is higher when information is channelled through employers’ own networks. Networks can result from personal relationships (e.g. business contacts) or from more institutionalized patterns of interactions (e.g. linkages between schools and firms) and are considered a dependable source of recruits as they send information about students that employers can trust. According to the closure by network mechanism, what matters is whether the applicant has secured a linkage with the hiring employer, either via the school or via some other contact. Linkages may be limited to loose activities such as job fairs and talks to classes, or entail long-term collaborations with teaching bodies and employers’ participation in school advisory boards. In this monograph, I distinguish between particularistic and institutionalized linkages. The former are linkages that are limited to the applicant-employer dyadic relationship (e.g. the applicants have completed an internship at the employer’s premises). The latter are regular patterns of interaction that are not specific to one particular school, but involve employer’s collaboration with a range of education providers (e.g. the employer sits on the advisory board of the same type of institute attended by the applicant, but not necessarily in the board of the same school).

Compared to the credentialist perspective, closure by networks does not deny the relationship between education and productivity. Employers build relationships with schools with the expectation that students from a linked school will be more productive employees once in the firm, since “the linked school can be trusted not to recommend a student who it believes is inadequate” (Kariya and Rosenbaum 1995: 129). Institutional linkages pose a challenge to the traditional distinction between external and internal labour markets and introduce a “quasi-internal” form. By providing reliable signals of applicants’ quality, they “can contribute to further development of a theory of signalling from a sociological perspective” (Kariya and Rosenbaum 1995: 129). At the same time, by targeting exclusively those schools that are part of their
own networks, employers generate a preferential entry route into the labour market, thus contributing to social closure.

Closure by degrees and closure by networks may also operate simultaneously and be mutually reinforcing. As an example, job placement and career advisory officers can actively engage in charter-building activities with employers, in the hope that the creation of stable institutional linkages between schools and firms will improve the perceived legitimacy of education credentials. In sum, although the social closure mechanism does not necessarily clash with the pursuit of productivity gains (and companies may benefit from hiring exclusively from a limited networks of schools), it may nevertheless have important consequences from the point of view of social stratification, given that it reproduces social exclusion.

2.2.2. The role of specific educational features in employers’ hiring behaviour

The three groups of theories on the relationship between education and labour market outcomes presented above have been compared by many scholars (cf. Rosenbaum et al. 1990; Rubinson and Browne 1994; Bills 2003; Ballarino 2007; Van de Werfhorst 2011a). Focusing on the role of employers, I argue that the theories correspond to three matching mechanisms that explain how job applicants are matched to vacant jobs during the hiring process. Respectively, employers consider education as: a) a proxy for immediate productivity, as ready-to-use skills and competences are acquired in school (productivity-enhancing matching mechanism); b) a signal of trainability associated with the expectation of lower training costs (trainability-improvement matching mechanism); c) a closure practice used by elites and/or dominant occupational groups to maintain and reproduce cleavages in the social structure by means of credentials or school-employer networks (closure matching mechanism, with the two variants: by degrees or by networks).

It can be argued that the three mechanisms do not only make very different claims with regard to the way employers interpret education, but they also imply that different aspects of the educational pedigree of job applicants should be influential in employers’ hiring decisions. According to the productivity-enhancing matching mechanism, employers reward education out of the belief that time spent in school increases individuals’ skills and, in turn, productivity. The improvement in productivity occurs regardless of whether education is certified or not. In this case, mere years of schooling are sufficiently informative about applicants’ skills, and employers should respond differently to varying years of educational attainment. Specialization in a job-relevant field of study should also matter from a human capital perspective, as students learn subject-specific knowledge while in school. With regard to the second mechanism, if education is a signal its effect is not absolute but depends on the distribution of education in the population of interest, as education functions
as a positional good (Hirsch 1976; Ultee 1980). Employers’ interest in job applicants’ academic performance (grade point average or study duration) besides mere school attendance has been considered as evidence in support of the trainability-improvement mechanism. Employers derive from higher grades and faster study completion information about someone’s perseverance, effort or motivation to succeed, all unobservable aspects that both lower the cost of schooling and are related to trainability. Lastly, with regard to the third mechanism of social closure, obtaining a degree or attending a school that is linked to the employer is all that matters, independent of productivity reasons (more precisely, productivity is either denied or is not even a concern).

Table 2.1 presents a schematic overview of the reasons why education matters to employers according to the three matching mechanisms and reports the educational features that employers should find important while hiring prospective employees. The relationship between educational features and the corresponding matching mechanisms is a fundamental assumption of this book. However, other interpretations are possible and have been discussed in earlier studies (e.g. Waslander and Glebbeek 1996, who associate fields of study with the mechanism of expected trainability). In chapter 5, I will provide additional evidence that the interpretation I propose is in line with the hiring behaviour of the employers in my sample.

The fact of placing emphasis on the educational features that should be relevant to employers fills a gap in the literature on school-to-work transitions, which has usually focused only on levels of educational attainment when discussing the relationship between education and labour market entry (Müller and Gangl 2003; Meyer and Solga 2008). This is unfortunate because, especially at times of educational expansion and increasing enrolment rates at both secondary and tertiary levels, employers may use more refined criteria - such as field of study, type of school attended or school performance - to select from a pool of job applicants that shows ever more similar levels of educational attainment. Therefore, disregarding other characteristics of the educational pedigree may lead to a misspecification of the education effect (Van der Velden and Wolbers 2007).

Alternative, more fine-grained, measurements of the education effect have been proposed in the field of economics of education. Groot and Oosterbeek (1994) decomposed the measurement of schooling into several components, including efficient years, inefficient routing years, repeated years, skipped years and drop-out years, in order to distinguish between human capital and signalling explanations of the association between education and income.

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7 One of the most widely applied designs to test the predictions of the human capital theory has been a test of the effect of degrees on top of years of schooling, called a sheepskin effect after the material on which degree certificates used to be printed (Belman and Heywood 1991; Jaeger and Page 1996). If sheepskin effects are present, human capital theory is disconfirmed.
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They predicted that repeated years would have a non-negative effect on wages according to the human capital model, but a negative one if a signalling perspective holds, as they send a negative signal to employers. However, this type of empirical analysis is usually not possible due to data limitations (but see the work of Matković and Kogan 2012 on drop-outs).

Another often unnoticed issue is the fact that not all educational signals are as transparent to employers as typically assumed by researchers. Some contributions take for granted that employers did observe the school transcripts and coursework of the individuals under study, and that school performance was influential for hiring decisions (e.g. Breen et al. 1995, Bernardi 2003; Smyth and McCoy 2011). This assumption is problematic: estimates of the education effect would be biased if, in fact, school performance was unknown at point of hire. While grades or other measures of school performance are often introduced in regression models as a proxy for cognitive skills in order to control for unobserved heterogeneity (e.g. Arkes 1999; Kingston et al. 2003), this is not a guarantee that the same measures have been used by employers as screening criteria during the hiring process. Solga and Kohlrusch (2012) recently took advantage of the experimental design of an evaluation study in the German federal state of Lower Saxony, in which a grade on the school leaving certificate informed employers about students’ work attitudes, and showed that grades are interpreted as signals for trainability only if observable to employers. Therefore, the authors stressed that more attention should be paid to the structuring of recruitment and selection processes in order to understand which of the possible signals of trainability matter to employers.

Given the above, the relationship between the three matching mechanisms and the various educational features listed in table 2.1 improves on previous studies in two ways. First, it acknowledges the remark by Rosenbaum and Kariya (1991: 92) that existing theories on the education payoff in the labour market explain why education would be used by employers as a signal, but remain silent about which attributes of education are influential in the hiring process. Nor do they explain how employers establish that a particular attribute is a signal of productivity, or of something else equally valuable for the hiring organization. Similarly, Spilerman and Lunde (1991), in a study of promotions and intra-firm mobility, demonstrate that the payoff of education is allocated among different dimensions of educational attainment and suggest that in the assessment of the full effect of education various types of educational features should be considered simultaneously (e.g. grades and years of schooling and study duration).

In line with these studies, I distinguish between several educational features which are discussed in relation with the three matching mechanisms, thus better qualifying how the education effect comes about. I consider education as a multidimensional concept, and acknowledge that education can take many forms, including not only the highest level of education.
attained, but also student performance (e.g. grade point average, time to study completion), participation in internships as part of the study programme, field of specialization, credentials, etc.

A second improvement is the fact that by analysing employers’ hiring propensities I have control on the educational features that employers evaluate during the hiring process, thus avoiding the risk of attributing to employers preferences on a characteristic that, in fact, remains unobserved. With these two improvements, I intend to make a second contribution to this field of research.

2.3. Conditional support for the matching mechanisms

Recent studies have not only accepted the distinction between the different mechanisms at the theoretical level, but have argued that “it is probably more fruitful to specify the conditions under which one or the other mechanism prevails than to claim that only one mechanism explains all” (Van der Velden and Wolbers 2007: 69). Rubinson and Browne (1994: 594) stress that the effect of education in the economy is “neither absolute nor invariant” and propose to formulate theories that are not competing but conditional, that is, operative under different institutional conditions. Similarly, a third contribution of this book is to contextualize the three matching mechanisms by taking into account the institutional framework in which employers operate. Institutions of the education system and of the labour market shape the links between the acquisition and certification of knowledge and skills during formal learning, and their recognition by employers during the hiring process (e.g. Mayer and Solga 2008). Specifically, institutions define the structure of the education system in a given country - the range of options available to students, the content of study programmes and the way skills and knowledge acquired in school match specific occupations in the labour market - as well as the rules that determine job assignment, the allocation of on-the-job training and patterns of career advancement within the hiring organization. I expect this framework to affect the way employers interpret the educational qualifications of prospective hires, and the importance attached to specific educational features during the hiring process (e.g. I expect employers in the Netherlands to differentiate applicants on the basis of their field of study, as the highly vocational nature of the education system should send clear information about job-relevant skills acquired during a specific study programme).

Progress in this direction has already been made by several studies, which specify the institutional conditions under which a given matching mechanism is more likely to be triggered. Van der Velden and Wolbers (2007), using data of Dutch school leavers, show that open employment relationships in the private sector, in which strong effects of level of education and field specificity are encountered, are better explained by human capital theory, whereas
credentials are more important in the public sector and in the professions, which are relatively insulated from competition and market mechanisms. A similar argument has been made by De Wolf (2000: 33) and Traag et al. (2005). Van de Werfhorst (2011b) measures the cross-national variability of the effect of skills on earnings, after controlling for educational attainment. If education provides work-relevant skills that enhance the productivity of workers, as postulated by the human capital theory, the partial effect of skills on earnings after controlling for educational attainment should be negligible. By showing that such effect is smaller the higher the vocational specificity of the country, the author provides a conditional support for the predictions made by the human capital theory. Bol and van de Werfhorst (2011) have built on a similar insight in their analysis of cross-country variation in sheepskin effects, i.e. the effect of education on top of years of schooling. After modelling the effect of degrees on occupational status controlled for years of schooling, sheepskin effects were larger in strongly vocationally oriented and differentiated schooling systems, where qualifications can serve as clearly interpretable signals for employers. In an effort to reduce uncertainty about the potential productivity of prospective employees, employers do rely on education, but the nature of the information they can extract from these qualifications is determined by the institutional context in which the hiring takes place. Matković and Kogan (2012) have recently studied the relationship between tertiary education non-completion and youth early labour market careers in Croatia and Serbia. Their findings confirm that the association between tertiary drop-outs and labour market outcomes is better explained by the human capital approach in Serbia, where the external labour market is large and open employment relationships prevail; in Croatia, where internal labour markets are well-established, new recruits are trained on the job and education is a signal of employee trainability.

These empirical studies demonstrate that it is useful to start from a description of the institutional context in the countries under study and then draw hypotheses about which aspects of the educational histories of job applicants should matter to employers during the hiring process. I situate this monograph within the same research tradition, and contribute to the literature by bringing in the employers’ perspectives. The support for one or the other matching mechanism will be conditional on the institutional context. The next section discusses the contextual characteristics that are expected to influence employers’ interpretation of various education components.
2.4. Institutions and school-to-work transitions: macro-level explanations

2.4.1. The national context and the value of education as a signal

Next to the question why education matters to employers, the questions to what extent it matters and whether the size of the education payoff varies across different social groups have also received sustained attention in sociological scholarship. Comparative stratification scholars have tried to account for cross-national differences in the patterns of youth transitions from school to work, by relating structural characteristics of national education systems⁸ to the development of employment careers after entry into the labour market (Allmendinger 1989; Kerckhoff 1995; Shavit and Müller 1998; Gangl 2001, 2003; Breen and Buchmann 2002; Breen 2005; Scherer 2005; Iannelli and Raffe 2007; Wolbers 2007). A strong focus on institutions characterizes this type of research. These studies unanimously found that institutional arrangements of the education system and labour market regulatory regimes largely influence the acquisition and certification of skills and competences during formal education. They also inferred from employee data that institutions affect employers’ use of educational qualifications during the hiring process.

Institutions of secondary education systems

Traditionally, three institutional dimensions of national education systems have been discussed in the literature as sources of cross-country differences in youth transitions from school to the labour market (Allmendinger 1989; Müller and Shavit 1998; Kerckhoff 2001; Müller and Gangl 2003; Breen 2005): standardization, stratification and vocational specificity. In a landmark contribution that would orient research in comparative social stratification for many years to come, Allmendinger (1989: 232) maintained that “education systems define occupational opportunities for individuals at entry into the labour market, and that these systems have long-term implications for how people are matched to jobs”. In her study, educational opportunities at the individual level are considered as strictly interwoven with how education is structured at the macro level, and two dimensions have been proposed to classify national education systems: the degree of stratification and the degree

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⁸ The fact that education has historically been organized differently from one country to the other leads to variation in the association between educational credentials and occupational destinations (cf. Culpepper and Finegold 1999; Culpepper and Solga 2008; Busemeyer 2009; Busemeyer and Trampusch 2012). The emergence and development of national education systems is a historical process whose roots have been investigated by Thelen (2004) for Germany, Britain, the United States and Japan. Differences in the articulation of class struggles between trade unions, the artisanate, industrial workers and employers of large metalworking firms gave rise to a gamut of solutions for certifying skilled labour and incorporating workers’ and employers’ stances in the governance of apprenticeships and vocational training systems.
Chapter 2: Education and employers’ hiring behaviour: a three-layered framework

of standardization. Stratification depends on the proportion of a cohort that attains the maximum number of school years provided by the education system, taking into account the allocation of students into different tracks within given educational levels. Standardization refers to the nationwide provision of equal educational standards and implies uniformity of school budgets, exit examinations, teacher training and curricular content within each country. The association between educational attainment and occupational status was found to be stronger the more stratified the education system is, whereas standardization played a role in limiting the number of job changes after labour market entry.

The idea that transitions of youth from school to the labour market is institutionally embedded was further corroborated by the seminal work of Shavit and Müller (1998), based on thirteen national case studies. The volume drew attention to a third relevant dimension of national education systems, vocational specificity, indicating the extent to which school curricula are attuned to labour market needs. In highly vocationally-oriented systems, occupation-specific skills are provided as part of school curricula in coordination between schools and the workplace, through extensive vocational training, large-scale apprenticeship programmes or employer-sponsored pathways into employment. When employers are involved in the delivery of school training, they consider educational qualifications as dependable signals. On the basis of the countries under study, Shavit and Müller (1998) identified two ideal-types of school-to-work transition regimes that resemble a distinction made in an earlier study by Maurice, Sellier, and Silvestre (1986): a qualificational space, characterized by stratified education systems, with a clear distinction between academic and vocational tracks, which equip school leavers with well-defined occupational identities; an organizational space, where sorting of students into separate tracks occurs at a later stage and the connection between school programmes and occupations is more loose.

The attention given to these three institutional features of national education systems laid the foundations for a comparative research agenda. Institutional arrangements in place in a given country contribute to determining the opportunity structures of youth, as they define which alternative trajectories are possible within the education system (Kerckhoff 1995, 2001). Many empirical studies have referred to these three institutional dimensions while comparing the labour market opportunities of school leavers with varying levels of educational attainment. Central to all these analyses is the association between educational and labour market institutions and the decisions made by the relevant actors (primarily employers and job-seekers) at the time of the transition from the school to the labour market, with a particular focus on the value of vocational education at the upper-secondary level (Blossfeld 1992; Müller and Shavit 2000; Iannelli and Raffe 2007).

9 A similar distinction is described in Iannelly and Raffe (2007), who distinguish between, respectively, education and employment logics.
Institutions of tertiary education systems

Given the increasing share of tertiary graduates registered in many advanced countries, more recent contributions have suggested that the institutional landscape of higher education should also be taken into account (Müller and Wolbers 2003; Van de Werfhorst 2004; Shavit, Arum, and Gamoran 2007; Barone and Ortiz 2011; Leuze 2011; Noelke, Gebel, and Kogan 2012). As education expanded in a number of countries, and more and more students attended or completed tertiary education, researchers turned their attention to both the vertical and horizontal dimensions of higher education provision (Van de Werfhorst 2004; Gerber and Cheung 2008), thus extending the focus of analyses hitherto limited to years of schooling or level of educational attainment - the vertical dimension - to other relevant aspects, such as fields of study and type of alma mater – the horizontal dimension. Scholars’ interest in these additional aspects of one’s education biography was motivated by the fact that, due to the ever-increasing number of highly educated school leavers, level of education had been losing its appeal in the eyes of employers as a marker that would set candidates apart during the hiring process. As the population of degree holders has become more heterogeneous, tertiary education systems have been studied more closely.

Both horizontal and vertical dimensions of institutional differentiation within tertiary education have been analysed. Vertical differentiation refers to hierarchical differences in status, quality or reputation of educational provision (Leuze 2011). An example is the cumulative duration of higher education, or the level at which a degree is obtained, whether within a Bachelor’s or a Master’s track (Barone and Ortiz 2011; Noelke et al. 2012). This process has been encouraged at the European level with the Bologna declaration, calling for a standardized two-stage structure within higher education modelled after the Anglo-Saxon model that would facilitate international comparability of tertiary degrees. Leuze (2011: 452) remarks that the concept of stratification by Allmendinger (1989) originally referred to both the degree of tracking within a given educational level and the proportion of students from a given cohort attaining the maximum number of years of education. In highly stratified secondary systems, students who reach the highest levels are more positively selected, as a pre-sorting has occurred at the earlier stage of secondary education and employers do not need to further refine their hiring criteria. On the contrary, highly stratified higher education systems that have a clear vertical demarcation between undergraduates and postgraduate programmes build on weakly stratified secondary education systems, and employers more strongly select on the basis of type of higher education institution and type of degree in order to differentiate between high- and low-achievers.

With regard to horizontal differentiation, in some countries a clear demarcation exists between vocationally oriented second-tier and academically oriented first-tier higher education institutions. Typical for the vocational
colleges in such ‘binary systems’, shorter degree programmes combine theoretical knowledge with practical skills and internships that prepare students for direct labour market entry. Binary systems contrast with ‘diversified systems’ in which a less evident connection is found between the status of institutions (first or second tier) and its focus (academic or vocational), or ‘unified systems’ in which just one form of university exists (Shavit et al. 2007). Horizontal differentiation can also refer to the degree of occupational specificity of the higher education curriculum: study programmes range from research-oriented curricula that prepare for further studies to occupation-specific curricula providing the training for entry into regulated professions (Leuze 2011). In a comparison of Central and Eastern European countries, vertical differentiation was found to have a pronounced effect on occupational status attainment and a more moderate impact on the length of the transition from education into employment, whereas the impact of occupational specificity was less clear (Noelke et al. 2012).

Institutions of national labour markets

Finally, school-to-work transitions should also be analysed in light of country-specific labour market institutions (Ryan 2001; Busemeyer 2009). Earlier works have identified two aspects that systematically affect the labour market entry of school leavers: employment protection legislation and labour market segmentation (based on educational qualifications or in-firm advancement). With regard to the former, a strict regulation on dismissals has been described as a deterrent to hire for employers, unless the education system clearly signals that the job seeker has the right skills to perform the job (Van der Velden and Wolbers 2003; Breen 2005; Scherer 2005). Van der Velden and Wolbers (2003) show that employment protection legislation and the presence of a dual system with a workplace-based programme both account for a non-negligible share of country variation in youth integration patterns. To the extent that employers take active part in the organization of work-placed based training, the skills acquired by students during the school programme are more likely to be occupation-specific and the presence of a dual system may optimize the allocation function of education by providing an institutionalized pathway into work. At the same time, protection against dismissal targeting labour market insiders may have a negative effect on the integration of school-leavers (who can be identified as outsiders), undermining their chances to obtain a stable employment.

Breen (2005) discusses cross-national variation in the level of youth unemployment with reference to institutional factors. Among the latter, he includes both the signalling role of the education system (its capacity to send information to employers about whether school-leavers’ skills match the demands of the labour market) and the strictness of the employment protection legislation, which constrains the ability of employers to dismiss unproductive
workers. Breen considers the effect of these two types of institutions in conjunction, showing that vocational systems can offset the negative effect that strict employment protection legislation typically has on hiring if they teach specific skills that are highly valued by employers. Evidently, labour market institutions may have a differential impact on individual employment chances, depending on the education system in which job seekers’ qualifications are acquired.

The other contextual characteristic, labour market segmentation, refers to the partitioning of the labour market in separate segments. This partitioning can be based on qualifications (i.e. occupational labour markets) or in-firm training opportunities and seniority rules (i.e. internal labour markets) (Maurice et al. 1986; Marsden 1999). In occupational labour markets, strong linkages between educational qualifications and occupational destinations guarantee that the matching process is based on qualifications that are standardized and highly transferable from one firm to the other (Blossfeld and Mayer 1988). Highly recognized and job-relevant qualifications shorten the time of transition of school-leavers into employment, resulting in shorter job search periods and horizontal matches between fields of study and occupation of destination (Wolbers 2003; Bernardi et al. 2004). In internal labour markets, educational pathways are not tightly related to specific occupations, and skill acquisition occurs primarily on the job by means of in-firm training activities; career advancement is dependent on experience and tenure. In countries where internal labour markets prevail, early careers tend to be rather turbulent and characterized by more frequent moves in and out of employment (Scherer 2001). Occupational labour markets are resilient in countries with a well-developed vocational system, such as Germany (Solga and Konietzka 1999; Scherer 2001), whereas internal labour markets tend to prevail in countries where the education system does not send clear signals to employers and occupation-specific skills have to be learned on the job through extensive training (Gangl 2003; Müller 2005; Wolbers 2007).

An additional institutional factor that can affect school-to-work transitions is the flexibilization of employment contracts. Labour market segmentation theory, as originally developed in both economics (Doeringer and Piore 1971; Osterman 1975) and sociology (Stolzenberg 1975; Bibb and Form 1977; Spilerman 1977; Althauser 1989) emphasized the distinction between a core (primary) labour market segment and a peripheral (secondary) one. A parallel distinction is the one between insiders, employed in the primary segment, and outsiders, either employed in the secondary segment or unemployed. Young entrants into the labour market and first-time job seekers typically belong to the second group. The insider-outsider distinction has become very important from the mid-nineties, as many countries started to introduce measures aimed to render the labour market more flexible, in order for firms to more easily adjust to demand fluctuations (Kalleberg 2000; Blossfeld 2008). However,
deregulation was mainly done at the margins, and youth, as outsiders, were the most affected (Barbieri and Scherer 2008). A number of studies have focused on the share of employees with atypical or fixed-term contracts, studying the development of youth employment opportunities during the early career and the chances to move to a stable job. Temporary and atypical employment have been widely discussed for their role as entry portals, stepping stones or dead-end tracks, depending on whether these types of contract represent, respectively, a screening device to enter the organization, a building block in a career line or an entrapment into lower status jobs. The implications of fixed-term contracts for early career mobility vary across institutional contexts, and non-optimal employment in occupations for which individuals are overqualified has lasting negative effects especially in Italy and Germany due to, respectively, low social mobility and strong qualification-based labour market segmentation (Scherer 2004).

Summary

The institutional dimensions reviewed above will provide the analytical toolbox for the description of the country cases in the next chapter. In this book, institutional sources of stratification that are related to the education system are addressed jointly with institutional sources related to the structure of the labour market, whereas earlier empirical contributions had an overriding focus on either of the two (but see Brunello 2004; Andersen and Van de Werfhorst 2010). Brinton (2005: 578) bases her review of research on the relationship between education and labour market outcomes on this unfortunate separation. She reports that “in general the sociology of education literature and the labour markets literature have moved forward without a great deal of theoretical cross-fertilization regarding the mechanisms producing stratification”. Sociologists of education have had the tendency to attribute the reproduction of social stratification merely to institutions that precede labour market entry, i.e. the structure of education systems (see also Kerckhoff 1999). For this reason, Brinton (2005: 579) is overtly critical of “the theoretical accord paid by educational sociologists to variation in both educational and labour market institutions, and their subsequent empirical concentration on the first source of institutional variation – the effects of educational institutions – on labour market outcomes”.

A fourth contribution of this book is precisely the effort to describe the institutional context of the countries under study by looking at both institutions of secondary and of tertiary education systems, and in combination with nationwide labour market institutions. I will focus on the following institutional dimensions: stratification, standardization and vocational orientation of secondary education; institutional differentiation of tertiary education, with regard to both vertical (i.e. distinction between bachelor’s and master’s programmes) and horizontal aspects (i.e. distinction between
binary and unified systems); employment protection legislation; predominant
type of labour market; insider-outsider labour market segmentation. On the
one hand, the complexity of simultaneously considering several institutional
characteristics with only three countries of study does not allow a rigorous
formal test of institutional effects in the empirical analyses, due to a lack
of degrees of freedom at the country level. On the other hand, a detailed
discussion of the transition system in the three countries based on several
aggregate indicators taken from existing studies provides an exceptionally rich
description of the institutional complementarities that structure the transition
of youth from education into employment and the opportunity structure in
which employers formulate their hiring decisions.

2.4.2. Matching mechanisms in context

Institutions are a powerful moderator of the strength of the effect of
education on labour market rewards. Thus, variation in the strength of the
education effect (i.e. in the size of the education coefficient) is explained in light
of the institutional context in which employers and employees (or job seekers)
are situated. Scholars in the institutionalist tradition are less concerned with
the question why education pays off, and mainly address the question how
much it pays off given the presence of certain institutional variables. The types
of matching mechanisms that underlie the association between education
and labour market outcomes are not discussed, and generally researchers
refer to quite vague explanations of why education is a valuable signal for
employers, relating education to a mix of skills, cognitive abilities and certified
qualifications.

None of the contributions reviewed in the previous section has considered
the possibility that not only the strength of the education effect, but also the
usefulness and applicability of the theoretical explanations of why education
is rewarded may be dependent on the institutional context. The role of
education may vary even when the strength of its effect is of comparable size
across settings and focusing solely on the strength of the education effect is
single-sided, as it would leave the question why education is rewarded in a
particular context unanswered (Van de Werfhorst 2011a). The three matching
mechanisms (productivity-enhancement, trainability-improvement and
social closure) offer alternative interpretations of the reason why education

10 The list of institutions that I take into consideration is not exhaustive. Aspects of the
welfare regime in a given country – such as, for instance, the degree of income protection
during unemployment spells or the role of family support during the job search – may also be
important. Arguably, however, these institutional dimensions are especially important for job
seekers, and less influential for employers, as they have implications for the duration of job
search processes and the extent to which job seekers can take time to find a job that matches
their own expectations, motivations that fall outside the scope of my study. Family ties could
be important to the extent that they are used as an informal search channel to find a job.
However, in this study I focus only on formal institutions.
is rewarded in the labour market and may all be associated with strong education effects. I attempt to show that institutions of the education system and of the labour market make the explanation provided by one mechanism more plausible than others, increasing employers’ responsiveness to particular educational features.

Therefore, in line with the suggestion of Van de Werfhorst (2011a, 2011b), a further contribution of this book is the fact of combining two types of scholarships that have so far developed separately from one another (see also Bol 2013). On the one hand, various empirical studies have tested the explanatory power of a particular mechanism, or have compared one mechanism against the other assuming that the mechanism with the highest explanatory power would be universally applicable (e.g. Layard and Psacharopolous 1974; Riley 1979; Groot and Oosterbeek 1994; Albrecht and van Ours 2001). On the other hand, many studies have compared the labour market outcomes of different educational groups across countries without raising the question why education was important to gain access to the labour market in the first place (e.g. Shavit and Müller 1998; Müller and Gangl 2003; Meyer and Solga 2008). The object of my research is to define, for each matching mechanism, the institutional conditions that are expected to influence employers’ decision to focus on specific features of educational attainment during the hiring process. After contextualizing the three mechanisms, testable hypotheses can be formulated that relate employers’ hiring behaviour to the three different accounts of why education matters to employers at point of hire.

The conditional support for the matching mechanism will be provided by identifying institutional complementarities, instead of focusing on single institutional dimensions. Complementarities arise when the functioning of one institution is enhanced by the presence of a second institution (Hall and Soskice 2001). Institutional complementarities imply that specific pairs of institutions tend to co-occur, and be mutually reinforcing, which renders the identification of institutional effects a very difficult task (see Busemeyer 2009). For this reason, I do not test whether one specific institution gives a conditional support for one specific matching mechanism, but I test whether employers’ hiring preferences are more likely to be consistent with the explanation offered by a given mechanism when certain institutional conditions are simultaneously present (cf. chapter 5).

For each matching mechanism, a set of complementary institutional dimensions are expected to provide favourable conditions for a given mechanism to be at work. Specifically, the productivity-enhancement mechanism is more likely to be triggered if study programmes are vocationally specific and students learn occupationally-relevant skills in a stratified education system where the academic and vocational streams are clearly separated. Vocational qualifications – from both secondary and higher education – that provide students with job-relevant skills cater to a well-developed occupational
labour market. Closure by degrees should occur if standardization is high, as employers can recognize the value of the educational qualification, and the system is weakly stratified in terms of number of students who attain the higher levels (i.e. high share of tertiary graduates). As for the expected-trainability mechanism, employers should be particularly concerned about the trainability of prospective hires when vocational specificity is low, and specific skills have to be learned on the job, within internal labour markets. High levels of employment protection legislation guarantee that the training investment of employees will not be lost. Finally, with regard to closure by networks, I distinguish between institutional networks and particularistic networks. The former are stable linkages between schools and firms that, though they involve schools and universities comparable to the one in which the applicant received her qualification, they do not necessarily involve the same education provider. These linkages should especially matter when vocational specificity is high, and highly standardized qualifications are portable within an occupationally segmented labour market. The opposite holds for particularistic networks, which are limited to the dyadic relationship between the applicant and the employer (e.g. the applicant has attended an internship at the employer’s premises). As these relationships may serve as a screening device and provide a port of entry into the firm, they should be more influential in countries with weakly developed vocational curricula and a strong reliance on internal labour markets. These expectations will be discussed into far greater detail in the next chapter.

2.5. The missing link: the meso-level of hiring organizations

In the sections above, I reviewed existing literature on the impact of institutional variables on the social stratification process. Overall, according to comparative stratification researchers, institutions not only influence the transition into the labour market, but also shape the occurrence of later placements and patterns of career mobility. Schools and firms are structural locations that are to a large extent stratified and hierarchically ranked, so that later moves and access to resources are conditional upon earlier ones (Kerckhoff 1995). Focus of these empirical works is limited to institutions of nationwide scope. Variation across countries in the relationship between education and labour market outcomes is explained in light of macro-level institutional arrangements such as the ones described in the previous sections (e.g. standardization of the education system, vocational orientation of curricula, employment protection legislation). In what follows, I will argue the case for extending the analytical focus to the meso-level of organizations, which represent the “missing link” between the formulation of employers’ hiring decisions at the micro level and the “beneficial constraints” (Streeck 1992) imposed by national institutions of the education system and of the
labour market at the macro level. The importance of studying organizational structures and processes was stressed long time ago by the supporters of new structuralism in sociology, with the aim of “bringing the firms back in” (Baron and Bielby 1980). Variation in hiring standards and practices across organizations was said to reflect not only the technical requirements of the job, but also the interplay of organizational and institutional interests (Cohen and Pfeffer 1986). Studies of occupational segregation and workplace discrimination based on gender and race have looked at organizations more closely (e.g. Ibarra 1993; Tomaskovic-Devey 1993; Reskin 2000; Kaufman 2002; Kmec 2003; Gorman 2005; DiTomaso et al. 2007; Castilla 2008). This literature considers the establishment-level and the job-level as powerful sites for the reproduction of inequalities, as they are the levels more proximate to how individuals from minority groups are allocated into employment, with implications on how wages and employment opportunities are determined (Kmec 2003). Unlike inequalities based on gender or race, Stainback, Tomaskovic-Devey, and Skaggs (2010) stress that credential-based inequalities have not been addressed in the organizational inequality literature. Similarly, scholars in the field of sociology of education, while discussing employers’ use of educational credentials during the hiring process, have not related the role that education plays in employers’ hiring preferences to characteristics of the hiring organizations. Hence, I address this gap in the literature by relating several indicators at the organizational level to the three matching mechanisms, namely: the sector of employment of the hiring organization; the expected training investment on new recruits; the recruitment channels activated to attract a pool of applicants at the start of the hiring process; the formalization of hiring practices within the organization (e.g. presence of clearly established entry requirements); the degree of employers’ discretion over the establishment and maintenance of the employment relationship (e.g. employment protection legislation, monitoring costs). I will discuss these aspects in series.

11 For example, human capital theory rests on the idea that workers are forward-looking and decide on their schooling investments by discounting earnings foregone during their stay at school in view of future earnings. However, the disregard for the role of firms showed by much of this literature points to a fundamental deficiency in the human capital edifice: as Maurice et al. (1986: 200) observe, individual decisions would not even count as investments “were it not for the value that firms attach to certain kinds of skills and other individual qualities”.

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2.5.1. Open and closed employment relationships: a continuum

Sørensen and Kalleberg (1981: 52) described labour markets as “arenas for the matching of persons to jobs” and observed that the conditions that are necessary for the matching process described by the human capital theory to occur are not homogeneously present in any segment of the labour market. An important assumption of human capital theory is the absence of any relationship between wage rates and the firms where they originate. According to this perspective, the only source of variation in wage rates is employee productivity which, in turn, depends on skills, effort, and innate abilities, all characteristics that are attached to the employee. Thus, employees with identical attributes should earn comparable wages, regardless of the firm that employs them. However, as observed in a number of contributions from sociology (Sørensen and Kalleberg 1981; Kalleberg and Berg 1987; Sørensen 1994; Goldthorpe 2000), industrial relations theory (Marsden 1999) and new institutional economics (Williamson 1975), firms can try to influence employment relationships and increase the effort, firm attachment and, ultimately, the wage of employees.

A distinction made by Weber (1978) and later on reiterated by Sørensen (1983) between open and closed positions in the allocation of people to the labour market is crucial for differentiating the human capital theory (and the productivity-enhancing mechanism) from the other matching mechanisms. Employment relationships can be open or closed, depending on whether job matches are established as a result of market-based allocation processes (human capital theory) or within mobility regimes governed by training and promotion ladders (job competition) and/or entry requirements (social closure). Human capital theory assumes a direct relationship between skills and productivity. Hiring transactions are determined by market mechanisms: employers compete to get the most productive applicant at the lowest cost and wages are set to reflect the marginal productivity of individuals at a given point in time. Thus, for the predictions made by human capital theory to hold, one should refer to an open system of employment relationships. On the contrary, the nature of the allocation process that regulates job matches in closed systems is fundamentally different: job positions cannot be created at will, unless incumbent employees move to another position and leave the job vacant. In closed systems, productivity is associated to the job positions, not to the worker himself and “marginal products are inherent in jobs and not in individuals” (Thurow 1975: 85).

If open employment relationships are absent in some labour market segments, the assumptions held by the human capital paradigm to explain the association between education and productivity would be seriously misplaced. In order to understand why education yields returns on the labour market, then, the system of employment relationships in place within the hiring organization plays a crucial role. Open and closed employment relationships
should be thought of as ideal-types, and real hiring organizations are more likely to be situated at some point along the continuum. Certain characteristics at the organizational level influence the extent to which employment relationships approximate an open or closed system. Figure 2.1 illustrates the continuum between open and closed employment relationships, indicating the organizational aspects that would pull the relationship towards either one of the extremes. These aspects are discussed in detail below.

Figure 2.1. From open to closed employment relationships

Private and public sector

Van der Velden and Wolbers (2007) associate open and closed employment relationships with selection and allocation mechanisms within, respectively, the private and the public sector. Organizations that belong to the private sector are exposed to stronger competition and aim to maximize their profits by attracting more productive (i.e. more skilled) workers from the external labour market. This is particularly true in certain industries (such as Information, Communication and Technology studied here), where coordination of wages is far more limited. Employment relationships within the private sector more closely approximate open systems and are more consistent with a human capital explanation of the effect of education at labour market entry: employers try to identify the applicants with the highest expected productivity and use level of education and selectivity of the study programme as hiring criteria. On the contrary, organizations that operate in the public sector are insulated from market mechanisms and closed employment relationships are prevalent. Employees are protected from wage competition and allocation to jobs approximates the job competition model.

Firm-specific training and employment protection

According to the job competition model of Thurow (1975), employees necessarily require some training after entering the organization in order to become competent on the job. Employers look for easily trainable employees
and rely on education as a signal of trainability. However, direct measurement of whether trainability is a real concern for employers are lacking and earlier studies could only assume that education is a signal of the expected trainability of prospective employees (Breen et al. 1995; Bernardi 2003). Compared to earlier studies, I provide a more complete test of the job competition model (Thurow 1975). I use direct measures of the training investment that has to be incurred after hiring a new recruit. I expect employers to be more concerned about trainability when a higher training investment is anticipated and employers have to make a considerable effort “to ‘bridge’ any existing skill deficiencies” (Van der Velden and Wolbers 2007: 78). Organizations that, at point of hire, anticipate a long period of training for the new recruit would approximate closed employment relationships: the higher the investment of the employers in the employee, the higher the control that the latter gains over the job (Marsden 1999). The opposite holds when the expected training investment is low.

One can also argue that the amount of on-the-job training, in turn, depends on how well the education system, at the macro-level, provides school-leavers with a set of occupation-specific skills geared to the needs of the labour market. Training can be either a complement to or a substitution for what is (or is not) taught in school, depending on the extent to which the education system provides school-leavers with skills that are directly applicable on the job (Van Smoorenburg and Van der Velden 2000; Brunello 2004). To the extent that employers can externalize the costs and content of training provision to schools, the control over the job retained by employees diminishes and the type of employment relationship established would approximate an open system (and the predictions of the human capital theory would become more applicable as a consequence).

Contributions from labour economics and comparative political economy have stressed the incentives that should be given to employers (Acemoglu and Pischke 1998; Estevez-Abe, Iversen, and Soskice 2001; Hall and Soskice 2001; Ryan 2001) and employees (Iversen and Soskice 2001) in order to convince them to invest in training. Investments in firm-specific training by employees need to be backed up by a safety net, which is provided by the welfare state through the legislation on dismissals. By restricting employers’ capacity to hire and fire at their own will, employees can be sure that the effort made in learning firm-specific knowledge (less applicable in other organizations) is safe.

Firm-specific training and employment protection have also been discussed as rewards used by employers to gain the commitment of employees and induce them to act in line with the firm’s interests. The use of rewards as a means to foster organizational compliance is important because, due to the incompleteness inherent in employment relationships, there are informational asymmetries between employers and employees with regard to the execution
of work (Williamson 1981; Goldthorpe 2000). Since contracts rarely, if ever, specify the amount of effort that is expected of an employee, employers are left with the necessity to find effective ways to enforce employees’ cooperation. Firm-specific training and employment protection tie the employee to the organization, moving the employment relationship towards the closed pole.

**Job type**

The type of job for which the selection is made is also expected to affect employers’ hiring behaviour. The typology of employment systems of Marsden (1999) distinguishes between task-centred jobs, in which jobs with highly specific technical requirements can be moulded to specific individuals and sets of skills, and function-centred jobs, in which job tasks are more flexibly defined and related to functions in the production process. In the former type of jobs, wages and conditions of employment can be negotiated individually (i.e. open employment relationships), and employers are expected to use education as a screen to identify the individuals with the most appropriate set of skills to be immediately put to use into the organization. The latter type of jobs, instead, assigns individuals to jobs on the basis of qualification profiles or training and seniority (i.e. closed employment relationships): thus, expected trainability of employees should be a primary concern for employers.

**Organization size**

I expect small organizations to approximate more closely open employment relationships, as they are subject to fewer constraints in terms of employment regulation, and can more easily adjust their staffing practices to fluctuations in demand, using spot contracting and hiring from the external labour market individuals with ready-to-use skills that do not need extensive training. On the other hand, large organizations are more often tied to formalized hiring practices, stricter constraints on the regulation of employment and wage-setting coordination mechanisms, which leaves them with less room for engaging in spot contracting (Marsden 2001). In order to encourage employees’ efforts, employers in large organizations can provide in-firm training within internal labour markets and tie career advancement to tenure. Additionally, a structured HR department is usually in place to arrange the supervision of training activities, and the allocation of job rewards and pay incentives.

12 Thurow (1975) himself emphasised how greater control over the job (i.e. closed employment relationships) is one way to ensure that on-the-job training can take place. Focusing on the perspective of employees, he argued that if labour market entrants were to compete on the spot market (i.e. open employment relationships), there would be no incentives for co-workers to provide training to the newcomers: experienced workers could be replaced at any time if the new hires, once trained, were willing to work for a lower wage. A set of incentives should be in place in the firm in order to induce senior workers to disclose the information and provide training to the newly hired.
Large firms should therefore approximate closed systems of employment relationships and employers’ hiring behaviour should be consistent with the job competition model.

**Unsolicited recruitment vs. recruitment via internships**

A final aspect at the organization level that may impact the way job applicants are allocated to jobs is the preferred method used by the hiring organization when recruiting prospective employees. Recruitment channels have not been a common object of study within sociology of education, apart from research into the role of school-employer networks in passing information about school leavers that employers consider as trustworthy (Miller and Rosenbaum 1997; Rosenbaum et al. 1990; Rosenbaum and Binder 1997; Brinton and Kariya 1998). These networks, in creating a preferential route into employment, may serve as a social closure mechanism to limit the entry into jobs to specific groups. To the extent that this is the case, the presence of school-employer networks or school-based recruitment via internships would generate a quasi-internal labour market (Kariya and Rosenbaum 1995) and should lead to employment relationships that move away from the open pole. On the other hand, if job-seekers apply directly “at the gate” and employers accept unsolicited applications, new hires are not necessarily associated to a given job in the vacancy chain, and employment conditions can be bargained unilaterally. Employers would, in this case, be able to reward skills directly, in line with the productivity-enhancing mechanism.

**Formalization of hiring practices: formal recruitment channels**

Organizational hiring standards do not simply reflect skill requirements, but are also a system of policies and practices with various degrees of formalization (Collins 1974; Cohen and Pfeffer 1986). Institutional theories of organizations relate hiring standards to normative pressures to introduce standard operating procedures and professional certifications as legitimated elements of good personnel practices (Meyer and Rowan 1977; Di Maggio and Powell 1983; Zucker 1987). One of this procedures is the recruitment of employees through formal channels (e.g. job ads, employment agencies), which disseminate information about job opportunities publicly and to a wide audience, mitigating in-group preferences and biases in evaluation procedures (Petersen and Saporta 2004; Kmec 2005; Dobbin, Kim, and Kalev 2011). Formalized hiring practices should be more often present in organizations where performance is difficult to assess. If individual productivity cannot be easily monitored, employers may use formal entry requirements to legitimize access to jobs in closed employment systems, irrespective of productivity (Van de Werfhorst 2011a).
2.5.2. Theoretical contribution: a three-layered analytical framework

Drawing on the agenda of new institutionalism in sociology (Brinton and Nee 1998), I aim to contribute to the scholarly debate on returns to education by situating employers’ decision-making during the hiring process within a nested infrastructure of incentives and enabling factors. This infrastructure is multi-level: institutions at the national and organizational-level factors take centre stage. It is only by means of a multi-layered framework that it is possible to capture the sets of incentives and constraints that shape employers’ decisions during the hiring process, as well as employers’ interpretation of several educational features. The same idea has been framed by Bills (1992: 19) somewhat similarly when calling for “more work on the organizational and institutional constraints on employer choice” and pointing to the need to distinguish the decision-making of particular organizational agents from the bureaucratic and institutional arrangements in which these decisions are made (see also the concept of “embedded organizations” within the societal effect literature: Maurice and Sorge 2000).

Therefore, this monograph combines institutionalist perspectives on the influence of the national institutional context on the education effect with theories that refer to organizations as a powerful site for the reproduction of inequalities and social stratification processes. In sum, I provide a conditional support to three matching mechanisms about the reason why several educational features matter to employers at point of hire, thus merging three types of scholarships at three different levels of analysis. These scholarships, which have so far developed independently and across two disciplines (economics and sociology), are here integrated within the framework of new institutionalism, as shown in table 2.2 (table adapted from Ballarino and Bernardi 1997: 114).
### Table 2.2: An integrated theoretical framework across disciplines

<table>
<thead>
<tr>
<th>Level of Analysis</th>
<th>Perspectives from labour economics and political economy</th>
<th>Perspectives from sociology</th>
<th>Perspectives from social stratification and educational systems (Ryan)</th>
<th>Macro: Country Education Systems (Ryan)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Micro: Individual</strong></td>
<td>• Human capital theory (Becker, Mincer, Schultz) • Signalling and screening (Spence, Arrow, Stiglitz, Thurow) • Credentialism (Collins, Berg, Brown) and social closure (Weeden) • School-employer networks and social closure (Weeden) • Credentialism (Collins, Berg, Brown)</td>
<td>• Social class and employment contracts (Goldthorpe) • Social class and employment contracts (Goldthorpe)</td>
<td>• Social class and employment contracts (Goldthorpe) • Theory of employment systems (Marsden) • Social structure and employment contracts (Goldthorpe)</td>
<td>• Social class and employment contracts (Goldthorpe) • Theory of employment systems (Marsden) • Social structure and employment contracts (Goldthorpe)</td>
</tr>
<tr>
<td><strong>Meso: Organization</strong></td>
<td>• Dual labour markets (Doeringer, Piore) • Internal labour markets (Osterman, Lazear, Oyer) • Job competition (Thurow)</td>
<td>• Transaction cost economics (Williamson) • New institutionalism (Williamson) • Theory of employment systems (Marsden) • Social class and employment contracts (Goldthorpe)</td>
<td>• Transaction cost economics (Williamson) • New institutionalism (Williamson) • Theory of employment systems (Marsden) • Social class and employment contracts (Goldthorpe)</td>
<td>• Transaction cost economics (Williamson) • New institutionalism (Williamson) • Theory of employment systems (Marsden) • Social class and employment contracts (Goldthorpe)</td>
</tr>
<tr>
<td><strong>Macro: Country</strong></td>
<td>• International political economy (Ryan)</td>
<td></td>
<td></td>
<td>• International political economy (Ryan)</td>
</tr>
</tbody>
</table>
New institutionalism in sociology (e.g. Brinton and Nee 1988) argues that the embeddedness of action in an institutional framework and in networks of social relations has a fundamental impact on economic outcomes. In particular, Ingram and Clay (2000: 527) embrace a variant of new institutionalism that they name “choice-within-constraints”, whose fundamental assertion is that “actors pursue their interests by making choices within constraints”. The new institutionalism views individuals as rational in the basic sense of making decisions that further their interests; however, by attending to cognitive costs of decision-making (Ingram and Clay 2000: 528). Applied to a study on employers’ decision-making, employers qualify as social actors that operate hiring choices within a framework of incentives and constraints.

Drawing on the new institutionalism in sociology, one can consider employers’ hiring decisions as embedded in the institutional and organizational environment. Therefore, the type and quality of information that employers associate to given educational features of job applicants are dependent on: a) the national context in which education is acquired; and b) the organization in which the applicants will be employed. Figure 2.1 is adapted from Nee and Ingram (1998: 31) and visually describes the interplay of the three nested levels of analysis, all of which are expected to play a role in the way employers interpret education during the hiring process. Employers’ preferences originate at the individual level, where the matching between hiring employers and job applicants take place. At the same time, employers find themselves in a nested structure of incentives and constraints which assist them in deciphering the (more or less uncertain) information related to job applicants’ educational features. Although micro-level decisions of employers and employees may also have an ‘upstream’ effect on organizational practices and the latter may also impact upon nationwide institutions, the focus of the book is limited to the ‘downstream’ arrows from the macro-level to the micro-level (chapters 5 and 6), from the meso-level to the micro-level (chapter 7), and from the macro-level to the meso-level (chapter 7). Relationships that will be addressed in the empirical chapters are indicated in the figure by black arrows.
Figure 2.2. Employers' interpretation of education: a three-layered analytical framework

- **National-level:** education systems, labour market institutions
  - Chapter 3

- **Organizational-level:** recruitment channels, training needs, job types, etc.
  - Chapter 7

- **Individual-level:** employers' perceptions of job applicants' education while hiring
  - Chapter 7