

# The impact of economic coordination and educational institutions on individual-level preferences for academic and vocational education

Marius R. Busemeyer<sup>1</sup> and Carsten Jensen<sup>2,\*</sup>

<sup>1</sup>Department of Politics and Public Administration, University of Konstanz, Germany;

<sup>2</sup>Department of Political Science, Aarhus University, Denmark

\*Correspondence: carstenj@ps.au.dk

Integrating the literature on the varieties of capitalism with sociological studies of educational stratification, this paper argues that macro-level institutions significantly shape the relationship between educational background and preferences for different kinds of education on the micro level. In particular, we find that the institutional set-up of the education system and the degree of coordination prevailing in a given economy both have a distinct impact on micro-level associations. Segregated education systems dominated by vocational training at the secondary level increase the strength of the association between educational background and preferences, whereas higher levels of coordination weaken this relationship. Our claims are supported by an empirical analysis of Eurobarometer survey data, using multilevel regression statistics. Our findings have important consequences for our understanding of the relationship between skill formation processes, labour market institutions and social equality.

**Keywords:** coordination, varieties of capitalism, skills formation, educational systems, educational inequality

**JEL classification:** I21 analysis of education

Over the past decade a large body of literature in the tradition of the Varieties of Capitalism (VoC) school has studied the effects of different kinds of capitalism on, among other things, social policies, employment protection, wage coordination and redistribution (Estévez-Abe *et al.*, 2001; Hall and Soskice, 2001; Iversen, 2005; Pontusson, 2005; Busemeyer, 2009; Hall and Gingerich, 2009). One important argument in this literature is that levels of social inequality are lower in countries with strong vocational training systems because the availability

of vocational skills helps young people in the lower half of the academic skills distribution to get access to well-paying employment (Estévez-Abe *et al.*, 2001, p. 178, but see Bradley *et al.*, 2003, for a different opinion). This finding runs counter to one of the core insights of educational sociology, which is that levels of educational inequality are higher in education systems that are segmented into different tracks—vocational and academic (Shavit and Blossfeld, 1993; Goldthorpe, 1996; Breen and Goldthorpe, 1997; Jæger, 2007, 2009; Pfeffer, 2008). This paper is a first step towards answering this puzzle and towards a better understanding of the complex relationship between educational and socio-economic inequality by exploring the interaction between macro-level institutions and policy preferences at the micro level.

Our central research question is whether macro-level institutions—the set-up of the education system and the degree of economic coordination—influence the dynamic of preference formation on the micro level. Our dependent variable is a measure of individual preferences for different kinds of education: academic or vocational. However, we are not primarily interested in the micro-level determinants of this variable, but in how institutions mediate the association between individual background and preferences. Integrating the existing VoC literature with scholarship in educational sociology, we argue and show empirically that institutions *do* have a strong effect on preference formation. Most importantly, the education system and degree of coordination have distinct—that is, opposite—conditioning effects. An education system dominated by vocational training leads to a *stronger* association between background and attitudes than one dominated by general academic training. A country characterized by a high level of coordination, conversely, entails a *weaker* association.

Our paper brings the VoC literature forward in two respects. First, it adds a new micro-level perspective to the concept of institutional complementarities. In the VoC literature, institutional complementarities are expected to emerge due to efficiency gains as companies and employees specialize (Hall and Soskice, 2001; Hall and Gingerich, 2009). However, the political sustainability of institutions does not only (or maybe even not primarily) depend on efficiency concerns, but on the continued political support of relevant actors (Hall and Thelen, 2009). Thus, we suppose that one explanation for why segregated educational systems might be sustainable politically, although they produce educational inequality, is that this stratifying effect is to a certain extent countermanded by the mitigating impact of economic coordination. As we are ultimately interested in the question of political support, and as we are approaching this subject from a political science or political economy perspective, we analyse preferences and attitudes towards different kinds of education, *not* actual behaviour in the form of educational choices. In a certain sense, choices are more constrained than abstract policy preferences because they reflect individual abilities as well as individual

preferences. By studying attitudes instead of choices, we can focus on the aspect of individual preferences.

Second, the paper contributes to a better understanding of the relationship between socio-economic inequality and educational inequality, i.e. equality of opportunity. With a focus on the macro level, the different literatures in political economy and educational sociology come to different, conflicting conclusions regarding the role of vocational education and training. The existing VoC literature argues that vocational education and training increase the opportunities for individuals from disadvantaged backgrounds to get access to high-quality training and well-paid jobs as skilled workers, resulting in a positive association between economic coordination and social equality (Rueda and Pontusson, 2000; Estévez-Abe *et al.*, 2001; Iversen and Stephens, 2008). Scholarship in educational sociology, in contrast, claims that educational inequalities are stronger in education systems in which vocational training dominates on the upper secondary and post-secondary level (Shavit and Blossfeld, 1993; Hillmert and Jacob, 2002; Jæger, 2007, 2009; Pfeffer, 2008). Our analysis shows that, in a sense, both perspectives are correct, but by failing to acknowledge each other miss important elements in the complex association between socio-economic and educational inequality. We find that the institutions of coordinated capitalism mitigate the impact of educational background on educational attitudes at the micro level. This, in turn, implies that a greater proportion of youths with strong academic skills opt for non-academic, i.e. vocational education, which is likely to have a mitigating impact on labour market stratification and socio-economic inequality in the long run.

### **1. Preferences for education: introducing educational differentials into the VoC approach**

Estévez-Abe *et al.* (2001), exemplifying the conventional wisdom in the VoC literature on how preferences for different types of education are formed, rely on three assumptions about the economic behaviour of workers when evaluating different education investments (p. 149):

- (1) People calculate overall return on their educational/training investment before deciding to commit themselves.
- (2) People choose to invest in those skills that generate the highest expected returns, provided that the riskiness of the investments is identical.
- (3) *Ceteris paribus*, people refrain from investing in skills that have more uncertain future returns (i.e. people are risk averse).

Based on these simple assumptions, Estévez-Abe *et al.* argue that the preferences of households for different kinds of skills are heavily influenced by the social

protection available in a country and the type of wage bargaining system. In a nutshell the argument posits that generous social protection lowers the risk of undertaking training that leads to very specific skills (mostly in the form of vocational training), as income in the event of unemployment is relatively secure. Conversely, in the event of meager social protection, it becomes riskier to opt for specific training, and (future) workers will therefore be inclined to prefer general academic training, which allows for easier shifts from one industry or section to another in the event of unemployment. The wage bargaining system functions in much the same way in the sense that coordinated wage bargaining, i.e. wage bargaining that encompasses whole industries or possibly even the economy at large, entails a lower risk of having to accept lower wages. The worker can therefore feel reasonably assured that if he specializes, his future wage will approximately be the same whatever company he is working for.

Estévez-Abe *et al.*'s argument is a powerful one, as it integrates the well-studied macro-institutional context with the micro-level preferences for different types of skills. It is thereby able to account for some very fundamental cross-country differences in skills regimes in the Western world. For the purpose of the present paper, the crucial takeaway is that households' educational preferences are essentially based on the *economic payoff* of educational investments, weighted by risk which is itself a function of welfare state and labour market institutions. What the perspective may underestimate, however, is the importance of social status as a determinant of educational preferences. A large literature in educational sociology has demonstrated that this factor plays a crucial role in maintaining educational inequalities across generations (e.g. Raftery and Hout, 1993; Shavit and Blossfeld, 1993; Morgan, 1998, 2005; Hillmert and Jacob, 2002; Breen and Jonsson, 2005; Jæger, 2007, 2009; Pfeffer, 2008).

What we need is a theory that can explain persistent differentials in preferences for education, while allowing for integration with the VoC approach. That theory is sociological rational choice theory (SRC). SRC theory has won widespread popularity as an explanation of the persistence of educational preferences across social classes (Goldthorpe, 1996; Breen and Goldthorpe, 1997; Morgan, 1998, 2005; see also Breen and Jonsson, 2005; Jæger, 2007). SRC theory is well suited to analyse educational preferences within a VoC perspective because, first, it focuses on the choice of different types of education rather than simply more or less education; second, it relies on a socioeconomic conceptualization of class that matches that of the VoC literature well; third, it introduces maintenance of social status as a distinct goal, which supplements the VoC literature's focus on economic pay-offs. Crucial differences between the VoC and the SRC perspectives are that the former assumes that educational decisions are mostly influenced by individual cost–benefit analysis of economic pay-offs of educational investments, whereas the latter emphasizes the importance of social status.

Drawing on SRC theory, educational stratification can be understood as the class-related differentials in educational choices.<sup>1</sup> SRC theory identifies three mechanisms that explain the persistence of class differentials in educational choices, controlling for individual academic ability: class-related differences in the valuation of changes in social status (benefits of educational investments), the perception of risk of failure pursuing different educational alternatives (uncertainty of educational investments) and the availability of material resources (short-term opportunity costs of educational investments).

Coming back to the first point, the SRC theory deviates most notably from Estévez-Abe *et al.*'s (2001) argument in that it emphasizes the role of social status in educational decisions. Quoting Breen and Goldthorpe (1997, p. 283, emphasis in original):

Families in both classes alike [working class and upper class] seek to ensure, so far as they can, that their children acquire a class position at least as advantageous as that from which they originate . . . This establishes families in both classes as having identical *relative* risk aversion.

That is, to upper-class individuals the most, potentially only, acceptable class position of their children is the upper class, but to the working class both the upper class and working class are acceptable end stations for their children. This is a crucial difference since it implies that—even if education is totally free and the abilities of upper- and working-class children are identical—upper-class individuals will still prefer the type of education that best facilitates entrance into the upper class. In all countries in the Western world, that type of education is academic university training (Card, 1999; Hillmert and Jacob, 2002). Conversely, working-class individuals will be much less hesitant to let their children choose vocational training that allows for entrance into the working class.

In addition to this first, arguably most important, mechanism, the class-related differences in the subjective assessment of how likely an individual is to successfully undergo general academic training influence the likelihood of preferring that type of education to begin with. The subjective assessment, in turn, is influenced by the objective abilities (relating to the above-mentioned primary

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<sup>1</sup>Going back to Boudon (1974), the literature distinguishes between primary and secondary effects. Primary effects relate to the observable relationship between class and academic ability. Endowed with more social and cultural capital, students from advantaged backgrounds perform better in education than their peers from less advantaged backgrounds. For the purpose of the present paper, and in line with the mainstream of SRC theory (Breen and Goldthorpe, 1997), however, we focus on secondary effects, i.e. the persistence of class differentials in educational decisions and preferences, controlling for individual academic ability. It is to be expected that secondary effects are more contingent on the institutional context than the deeper, underlying primary effects.

effects), which entails that upper-class individuals view the likelihood of passing academic training as higher than working class individuals. This, too, generates educational inequalities even if all education is free of charge.

Finally, upper-class individuals have more material resources available than working class individuals, so that the relative opportunity costs of investments in academic education are lower. This third mechanism is reminiscent of the economic behavioural determinant in Estévez-Abe *et al.*'s (2001) argument. To the extent that education is not freely available to all individuals in society, children of upper-class families will naturally have more liberty to opt for general academic training to the extent that this type of education is more expensive than vocational training (a realistic assumption, however).

Following this, we want to suggest that one way to amend the lack of attention to educational differentials in the VoC literature is to integrate it with some of the insights of SRC theory. We find the concepts of class-related differences in the valuation of relative status maintenance and short-term opportunity costs of educational investments very promising in this respect because these factors are amenable to the influence of macro-institutional features that figure prominently in the VoC literature, notably the presence of economic coordination and the structure of the educational system.

## **2. How institutions moderate the effect of individual educational background**

In line with the VoC and SRC literature, we focus on two sets of institutions: economic coordination and the structure of the educational systems, i.e. whether secondary education is dominated by vocational training or not. These institutions are, we argue, of particular importance when analysing educational inequalities in terms of attitudes and preferences. As noted above, class-related differences in the perception and valuation of the relative costs and benefits of different kinds of educational investments are important determinants of educational choices and, ultimately, the actual distribution of skills in a political economy. Our central research question is to what extent economic coordination and the institutional set-up of the education system influence the strength of the association between educational background and attitudes at the micro level.

We start by looking at the structure of the educational system. The crucial variable here is whether vocational training or academic education is more prevalent at the upper secondary and post-secondary levels. Drawing from SRC theory, it can be posited that the prevalence of vocational training is expected to increase educational inequality, i.e. the strength of the relationship between individual background and preferences. In this case, individuals from the upper classes are confronted with a higher risk of status degradation and are thus more

likely to remain committed to academic education. To children from homes with low socio-economic status, vocational training implies maintaining the same status as their parents. Hence, to an individual with working-class parents in the middle of the academic skills distribution, vocational training becomes an acceptable choice. If vocational training is not readily available, this individual will have to go for general academic training instead, which implies a greater drop-out risk and should, therefore, be less attractive if viable alternatives exist (Goldthorpe, 1996; Breen and Goldthorpe, 1997; for empirical studies corroborating this contention, see Shavit and Blossfeld, 1993; Hillmert and Jacob, 2002; Hanushek and Wössmann, 2006; Brunello and Checchi, 2007; Jæger, 2007, 2009; Pfeffer, 2008).

The prevalence of vocational training also lowers the short-term costs of investments in post-secondary education, increasing the attractiveness of this type of education for academically talented young people from disadvantaged backgrounds, because the short-term costs of educational investments are likely to matter more to children and parents from the working class. Summing up: the prevalence of vocational training at the secondary level is expected to be associated with higher levels of inequality in educational preferences, i.e. a strong association between background and preferences.

From the VoC perspective, the most important difference between countries is the degree and kind of economic coordination. As argued by Hall and Gingerich (2009) as well as Hall and Soskice (2001), extensive economic coordination is a function of factors like limited shareholder power, concentration of control over the major private sector companies, a relatively small stock market (the corporate governance dimension) and pervasive wage coordination and low labour turnover (the business–labour relations dimension). Combined, these factors ensure a less volatile (seen from a different perspective, inflexible) coordinated economy with a very stable labour market, as employers in coordinated market economies are more concerned with maximizing long-term instead of short-term profits. In this institutional environment, firms excel in production strategies focused on diversified quality products (Streeck, 1992; Hall and Soskice, 2001), for which investments in vocational skills are a crucial precondition. In liberal economies with low degrees of coordination, investments in academic education promise to generate higher economic payoffs because the institutional set-up of these political economies values the fast transfer of high-level skills across jobs.

How does economic coordination affect the transmission of socio-economic inequality via educational preferences? Above we argued that according to SRC theory, the educational preferences of households, in particular those from the upper classes, are influenced by concerns about status maintenance. However, in addition to social utility, individuals can be expected to care about the economic pay-offs of educational choices in terms of wages—if only because this

eventually has a bearing on their social status. From the perspective of the median individual in the distribution of academic talents, the choice in favour of vocational education becomes more attractive when high levels of coordination increase its expected economic utility. Expected economic utility is increased because future incomes for individuals with vocational qualifications are higher and more secure in countries with high levels of coordination than in countries with low levels; this is one of the central arguments and empirical findings of the VoC literature (Wallerstein, 1999; Rueda and Pontusson, 2000; Estévez-Abe *et al.*, 2001; Hall and Soskice, 2001). Long-term economic utility can thus compensate for potential losses in social status, and vocational education becomes a more attractive option even for individuals with upper-class backgrounds. The opposite situation exists in countries with low levels of coordination. In this case, investments in academic education generate higher economic payoffs and therefore become more attractive.

It should be noted at this point that we depart from Estévez-Abe *et al.* (2001) by emphasizing the role of economic coordination rather than the social protection system. While the two are highly correlated, they are clearly not the same thing. We suspect economic coordination to matter most because it is this factor that pertains to the future of the children *as workers* and has direct consequences for the economic returns of different kinds of educational investments. The social protection system, on the other hand, relates to the future of the children *as unemployed*. The first scenario, in short, relates to the situation at which the family is explicitly aiming; the second scenario is less relevant to most people, since most individuals in society do not actually experience long spells of unemployment.

In sum, the structure of the educational system and the presence of extensive economic coordination may be expected to have two very different effects on the transmission of socio-economic inequality from the macro to the micro level via educational preferences. Education systems with extensive vocational training at the upper secondary level are hypothesized to increase the stratifying impact of individual background on preferences. This is because for upper-class households, opting for vocational education is associated with a larger reduction in terms of social status, whereas for individuals from lower classes, extensive provision of vocational education delimits the demand for upward status mobility via academic education. The effect of economic coordination is different: high levels of coordination increase the economic payoff of investments in vocational education, making vocational education more attractive for households from higher social classes (despite its potentially negative impact in terms of social status). This, in turn, will limit the degree of inequality in terms of educational preferences. Given, partly, how prevalent the two factors of educational institutions and economic coordination are across the Western world and, partly, that

they are normally perceived as going hand-in-hand, these are interesting expectations.

### 3. Data, measurement and methods

In this section, we will test the hypotheses developed above. Our dependent variable captures individual preferences for different kinds of post-secondary education. For the purpose of this paper, we use answers to the following question from the Eurobarometer 62.1 (ZA 4320, 2004) survey:

‘Nowadays, which of the following would you recommend to a young person who is finishing compulsory education or secondary education?’

- (1) General or academic studies
- (2) Vocational training or apprenticeship
- (3) It depends on the person (SPONTANEOUS)
- (4) Other (SPONTANEOUS)
- (5) Don’t know’

Spontaneous and indecisive answers were deleted from the sample, so a dichotomous variable remains where ‘1’ equals a preference for general/academic studies and ‘0’ a preference for vocational training. The survey provides data for Belgium, Denmark, Greece, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Sweden, (East and West) Germany and Great Britain.

The Eurobarometer questionnaire is, to the best of our knowledge, the only available source for individual-level policy preferences for different kinds of education that would allow for international comparisons.<sup>2</sup> It does, however, have several weaknesses that should be kept in mind. One disadvantage of the specific wording of the question is that it does not distinguish between general/academic education at different *levels* of education. However, because the question explicitly mentions that the question is about post-secondary education, most respondents will think of higher (university) education when they hear ‘general or academic studies’. Another weakness in the framing of the question is that it asks about ‘recommendations’ for young people, not the preferences of the young people and their families as such. Thus, we have to assume that ‘recommendations’ are commensurate with deeper, underlying preference structures.

We include the respondents’ age, gender and years of education as measures of their position in the life cycle and educational background, respectively. Unfortunately, the survey does not contain information on the kind of education that an individual received (vocational or academic). Busemeyer *et al.* (2011) have shown

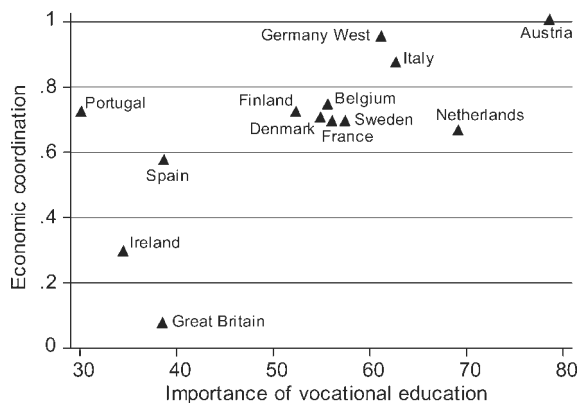
<sup>2</sup>There is, however, data for individual countries such as Switzerland (Busemeyer *et al.*, 2011).

for the case of Switzerland that this factor matters a lot when it comes to supporting different kinds of education. Furthermore, the Eurobarometer data set does not contain a measure of individual income, which would have made it possible to differentiate between the effects of education and income on preferences. Identification with different hues of partisan ideology is given as responses to questions about self-placement on the left-right scale (higher values indicate identification with rightist ideology). We include categorical measures of labour market status and class: retired, student, unemployed, white collar or management position, self-employment and manual occupation ('not working' is the base category).

We also include a number of macro variables. To capture differences in the degree of coordination of economies, we rely on the measure of coordination developed by Hall and Gingerich (2004). Unfortunately, this variable is not available for Greece and Luxembourg, so the number of countries is reduced from 15 to 13 in these regression specifications. The Hall-Gingerich measure is an aggregate index of the degree of coordination that contains information on institutional arrangements in the realm of corporate governance (shareholder power, dispersion of control and size of the stock market) and business-labour relations (level of wage coordination, degree of wage coordination and labour turnover). Thus, it does *not* contain specific information on the vocational training system. Furthermore, our theory would expect us to believe that coordination in the realm of business-labour relations could be more important than coordination in the realm of corporate governance because wage coordination has a more direct impact on the economic pay-off of investments in vocational education. Therefore, we also use a measure of coordination that is restricted to business-labour relations provided by Hall and Gingerich (2009, p. 458).

As an indicator of the importance of vocational education and training in a given educational system, we include the share of secondary-level students in technical or vocational education in 2004, taken from the *UNESCO Statistical Yearbook*, as this is the indicator commonly used in the literature (Iversen and Soskice, 2001; Cusack *et al.*, 2006). This indicator is, in our view, also preferable to alternatives, such as using a dummy variable to distinguish between education systems with and without streaming at the upper secondary level (Ansell, 2010, p. 147), because it provides a more detailed measure of the real importance of vocational education in a given education system.

The VoC perspective argues that the prevalence of vocational education is strongly conditioned by the level of non-market coordination in adjacent spheres of the political economy (Estévez-Abe *et al.*, 2001; Hall and Soskice, 2001). And indeed, our indicators of vocational education and economic coordination are positively correlated ( $r = 0.68$ ). However, as can be seen from Figure 1, the association is not deterministic. Furthermore, as argued above



**Figure 1** The association between non market coordination and the relevance of vocational education and training.

and shown empirically below, these two dimensions of political economy, though positively correlated, have different consequences with regard to the formation of policy preferences at the micro level.

As noted above, we do not believe that the social protection system in a country influences educational preferences, but this is, of course, ultimately an empirical question. Because this argument is so prominent in the literature, we include the size of the welfare state as a control variable as well. We measure the level of social protection according to the 2005 levels of total social spending as a percentage of the GDP in a given country. In addition, we include the level of socio-economic inequality [the net Gini coefficient taken from the World Income Inequality Database (Solt, 2009)] because higher levels of inequality could point to higher returns on investments in education and could, therefore, increase individuals' willingness to opt for academic education.

With regard to methods, we start by using simple logit analyses. In the specifications, in which we look at micro-level variables only, we include country dummies and use clustered standard errors. As an alternative, we rely on random-effects models. In a second step, we probe the relationship between macro-level and micro-level variables. Here, we use two different specifications. First, we include cross-level interaction terms (see Iversen and Soskice, 2001, for a similar approach) in multilevel models. This approach allows us to explain the variation in strength and direction of micro-level associations (in our case, the effect of educational background on preferences) by variations in the macro-level context. In addition to the cross-level interactions, macro-level variables could also be included as independent variables to capture the direct effects of institutions on the dependent variable. Our focus, however, is on cross-level interactions. Therefore, our preferred specification is a model with country

dummies instead of macro-level variables. The dummy variables can be expected to absorb a larger share of the differences between countries at the macro-level than individual macro variables. Also, in part due to space considerations, we have refrained from further theoretically elaborating the direct effects of institutions, which lies beyond the scope of the present paper. Nevertheless, we include a model with direct effects of macro variables to show the robustness of our findings.<sup>3</sup>

The downside of using cross-level interactions is that it assumes that there are no other country-level variables besides the ones that are included in the interaction predicting the variation on the individual level. Bayesian multilevel models relax this unrealistic assumption by including a separate error term for the regressions at the higher level (Steenbergen and Jones, 2002). These models work best when the number of observations at the lower level is small compared with the number of observations at the macro level (e.g. students nested within schools). In the present case, however, the number of observations at the lower level (i.e. the number of respondents in each country in the Eurobarometer survey) is sufficiently large, but the number of institutional contexts (countries) is small. In this case, Achen (2005, p. 451) recommends the so-called two-step hierarchical estimation procedure (Achen, 2005; Huber *et al.*, 2005; Lewis and Linzer, 2005), which we use as an alternative to cross-level interactions. The first step is to perform separate analyses of the micro level for each unit (countries). In the second step, estimates of, for example, coefficients from the first step are used as dependent variables in cross-sectional analyses of the variation across countries.

#### 4. Findings

Table 1 presents the results for the micro-level variables ('fixed effects' in the language of hierarchical modelling), which perform largely as expected. We present the results in the form of odds ratios, i.e. a value larger than 1 indicates that an increase in the independent variable by one unit increases the probability of recommending academic education over vocational education and *vice versa*. More concretely, each additional year spent in education increases the chances of supporting academic over vocational education by about 15%. Men are about 11% less likely to recommend academic education. Age and self-placement on the left-right scale are not statistically significant predictors. Labour market status matters, however. Retired people are much less likely to recommend academic education over vocational education. Because we do not have longitudinal data, it is impossible to say whether this effect of old age is due to the position of

<sup>3</sup>In this case, we use a multilevel random effects model instead of clustered standard errors.

**Table 1** Preferences for types of education

Dependent variable	Preference for academic education = 1, Preference for vocational education = 0			
	(1)	(2)	(3)	(4)
Model specification	Logit with country dummies and clustered SE		Multilevel logit with RE	
Age	0.997* (0.00161)	1.002 (0.00174)	0.997 (0.00210)	1.002 (0.00249)
Years of education	1.151*** (0.0296)	1.113*** (0.0281)	1.150*** (0.0116)	1.112*** (0.0122)
Male	0.877** (0.0542)	0.892* (0.0566)	0.878** (0.0453)	0.893** (0.0488)
Left right position	1.057 (0.0588)	1.050 (0.0570)	1.056 (0.0361)	1.050 (0.0362)
Retired		0.725*** (0.0672)		0.725** (0.0916)
Student		1.704*** (0.212)		1.710*** (0.248)
Unemployed		0.786** (0.0769)		0.789* (0.101)
White collar or management		1.245** (0.129)		1.243** (0.125)
Manual occupation		0.799** (0.0728)		0.799** (0.0821)
Self employed		0.994 (0.115)		0.994 (0.119)
Constant	0.131*** (0.0265)	0.133*** (0.0235)	0.388*** (0.0705)	0.390*** (0.0794)
Observations	6 784	6 784	6 784	6 784
Number of countries	15	15	15	15

Notes: Robust standard errors in parentheses; \*\*\* $P < 0.01$ , \*\* $P < 0.05$ , \* $P < 0.1$ .

individuals in the life cycle or simply a generational effect. Not surprisingly, students are 70% more likely to recommend academic education, whereas the unemployed and manual workers express a preference for vocational education. White-collar workers and/or managers are, in contrast, more likely to recommend academic education.

A comparison of Models 1 and 2 with Models 3 and 4 shows that the exact model specification (logit with country dummies and clustered standard errors or multilevel random effects model) does not really matter. The joint impact of the micro-level determinants is large in magnitude: based on Model 2 of Table 1, the predicted probability that a female, highly educated student recommends academic education over vocational training is 65%, compared with a predicted probability of 26% for a male retiree with little education.

With regard to the effect of macro variables, Table 2 contains some interesting results. As is evident from Model 1, the share of secondary-level students enrolled in technical or vocational education interacts positively with educational background. This means that in education systems with a high share of students in vocational education, the individual-level effect of educational background on preferences is stronger, i.e. more positive. In other words, educational stratification in terms of the institutional set-up of the education system is mirrored in individual preferences, as the impact of education on recommendations is stronger in countries with a higher share of students in vocational education.

Model 2, where both of our core explanatory variables are included at the same time, shows that the institutional set-up of the educational system and the degree of coordination in the political economy have distinct effects on the strength of the micro-level association between educational background and preferences. Whereas a high share of students in vocational education exacerbates the stratifying impact of educational background on preferences, the degree of coordination acts in the opposite direction. High levels of coordination negate the impact of educational background on preferences. Model 3 substitutes the broader coordination measure developed by Hall and Gingerich (2004) with the narrower one focused on business–labour coordination (Hall and Gingerich, 2009, p. 458). The results stay virtually the same (also because the two measures are correlated at a level above 0.95). Replacing the business–labour coordination measure with a more traditional measure of corporatism such as the Hicks–Kenworthy Index (see Hall and Gingerich, 2009, p. 458) does not change the findings fundamentally either (results not provided here), although the number of country cases is further reduced, which is why we prefer to stick with the Hall–Gingerich measure.

In Model 4 of Table 2, we use an interaction term between educational background and public social spending because the conventional argument in the VoC literature (e.g. Estévez-Abe *et al.*, 2001) is that a generous welfare state encourages

**Table 2** Preferences for types of education

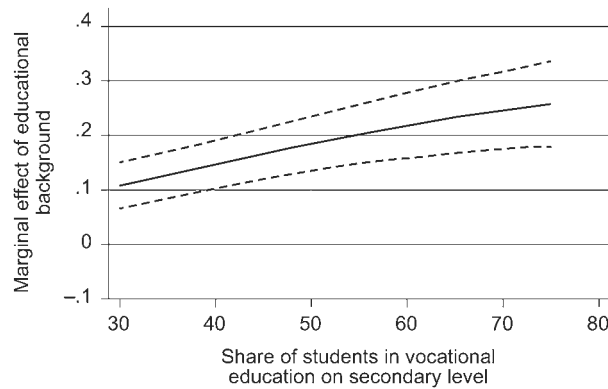
Dependent variable	Preference for academic education = 1, Preference for vocational education = 0					
	(1)	(2)	(3)	(4)	(5)	(6)
Micro level						
Age	1.001 (0.00177)	1.002 (0.00182)	1.002 (0.00181)	1.002 (0.00174)	1.002 (0.00182)	1.003 (0.00261)
Years of education	0.949 (0.0828)	0.953 (0.0781)	0.944 (0.0779)	0.702* (0.128)	1.096 (0.502)	1.005 (0.0415)
Male	0.900* (0.0573)	0.928 (0.0634)	0.927 (0.0643)	0.934 (0.0648)	0.937 (0.0647)	0.974 (0.0560)
Left right position	1.052 (0.0567)	1.045 (0.0603)	1.044 (0.0605)	1.044 (0.0604)	1.042 (0.0598)	1.059 (0.0380)
Retired	0.748*** (0.0772)	0.749*** (0.0823)	0.751** (0.0847)	0.772** (0.0908)	0.776** (0.0876)	0.727** (0.0996)
Student	1.710*** (0.210)	1.832*** (0.254)	1.840*** (0.260)	1.881*** (0.266)	1.876*** (0.265)	1.804*** (0.280)
Unemployed	0.792** (0.0810)	0.795** (0.0898)	0.797** (0.0918)	0.814* (0.0983)	0.813* (0.0955)	0.830 (0.116)
White collar occupation	1.264** (0.133)	1.306** (0.136)	1.306** (0.138)	1.332** (0.148)	1.336*** (0.148)	1.294** (0.140)
Manual occupation	0.806** (0.0728)	0.792*** (0.0673)	0.792*** (0.0677)	0.808** (0.0752)	0.806** (0.0744)	0.810* (0.0889)
Self employed	0.990 (0.116)	1.111 (0.127)	1.115 (0.129)	1.137 (0.127)	1.137 (0.126)	1.087 (0.142)
Cross level interactions						
Education × stud. share in voc. educ.	1.003** (0.00156)	1.006*** (0.00155)	1.005*** (0.00172)	1.005*** (0.000915)	1.004* (0.00209)	1.003*** (0.000903)
Education × degree of coordination		0.810*** (0.0566)		0.700*** (0.0634)	0.756*** (0.0738)	0.886** (0.0485)
Education × degree of coordination in labour relations			0.827** (0.0640)			
Education × levels of public social spending				1.015** (0.00631)	1.009 (0.00869)	
Education × levels of inequality					0.992 (0.00613)	
Macro variables						
Student share in vocational education						0.957*** (0.00502)
Degree of economic coordination						8.617*** (2.695)
Constant	0.119*** (0.0203)	0.113*** (0.0196)	0.112*** (0.0197)	0.0750*** (0.0219)	0.0853*** (0.0255)	0.766 (0.217)
Number of countries	17	13	13	13	13	13
Observations	6784	5805	5805	5805	5805	5805

Notes: Standard errors in parentheses; \*\*\* $P < 0.01$ , \*\* $P < 0.05$ , \* $P < 0.1$ .

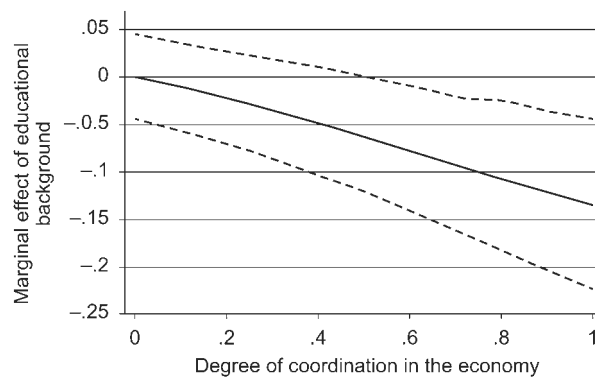
investments in vocational skills. Model 5 adds an interaction between educational background and inequality. The findings are not robust across all specifications. Levels of significance vary (e.g. when excluding the interaction with coordination, the interaction with social spending becomes insignificant). Furthermore, the sign of the coefficient points in an unexpected positive direction, i.e. high levels of public spending increase the impact of education background on preferences for academic education. Levels of inequality might be more important than social spending as such. When the interaction with social spending is excluded, the interaction between educational background and inequality turns negative and is statistically significant (not shown here). Again, somewhat contrary to expectations, higher levels of inequality mitigate the stratifying impact of education on preferences. This issue should be explored further in future research. For the purpose of the present paper, we would argue the results indicate that the degree of economic coordination and the importance of vocational education and training in the education system are more influential than the welfare state as such.

Finally, Model 6 includes macro variables instead of country dummies. The statistical significance and the magnitude of the coefficients of the cross-level interactions remain largely unaffected by this step. The direct effects indicate that a higher share of vocational education increases the probability that individuals prefer vocational to academic education, which is in line with the findings of Busemeyer *et al.* (2011) for the case of Switzerland. Interestingly, higher levels of economic coordination seem to increase the demand for academic education, although the opposite would have been expected. It could be that individuals demand the kind of education that is more scarcely available in a given political economy, although one should interpret this effect very carefully.

The cross-level interactions between educational background and the two core macro variables are shown in Figures 2 and 3. Figure 2 shows the effect on the predicted probability of recommending academic education over vocational training resulting from an increase in the years of post-compulsory education by one standard deviation (roughly 3 years), starting from the average in the sample (approximately 5 years). The positive slope of the line indicates that the effect of educational background on the probability of recommending academic over vocational education increases with the share of students in vocational education on the upper secondary level. This means that the stratifying impact of educational background on education policy preferences is stronger in more differentiated and segregated systems with well-developed vocational training. The difference is significant: in a system with a low share of students in vocational education (such as Portugal or Great Britain), an increase in the years of education by one standard deviation is associated with an increase in 10 percentage points in the predicted probability of recommending academic over vocational



**Figure 2** The impact of student share in vocational education on the micro level effect of educational background on preferences.



**Figure 3** The impact of economic coordination on the micro level effect of educational background on preferences.

education. In contrast, in a system with a high share of students in vocational education (e.g. Germany or Austria), the commensurate increase in the predicted probability is about 25 percentage points.

Figure 3 demonstrates the mitigating impact of economic coordination. Controlling for the institutional set-up of the education system (see Model 4 in Table 2), the degree of coordination in the political economy has a negative impact on the micro-level association between educational background and preferences. In systems with a low degree of coordination (such as Great Britain in the present sample), the impact of educational background on the predicted probability of recommending academic over vocational education is non-existent. With increasing levels of economic coordination, however, the effect of educational background on preferences turns negative, i.e. strong coordination

negates the stratifying impact of educational background on preferences for different kinds of education. Again, the size of the effect is significant: in Austria, the country case with the highest degree of economic coordination, the effect of an increase in individual years of education is a decrease in the predicted probability of recommending academic education of more than 10 percentage points.

An alternative way to probe the relationship between micro-level associations and institutional contexts is presented in Table 3, which displays the findings of the second stage of the hierarchical two-stage procedure mentioned above. In the first stage, we performed simple logit regressions in each country under observation (using the same control variables as in Tables 1 and 2). Then, particular variables of interest (in our case, the coefficient estimate of the impact of educational background on preferences) were taken as dependent variables for the second stage. We then employed OLS regressions with robust standard errors and weighed the observations with the inverse of the standard error from the first stage to give more weight to observations with lower standard errors and *vice versa*. We ended up with the regression models of Table 3.

These largely confirm our previous findings. In particular, Model 3 shows that the share of students in vocational education and training at the upper secondary level and the degree of economic coordination each has a distinct effect on the strength and direction of the micro-level association between educational background and preferences. That both variables are important determinants can also be gauged from changes in the  $R^2$ . When only a single variable is included, the  $R^2$  is 0.14 or less, and the coefficient estimates are not statistically significant. When both macro variables are included, the  $R^2$  jumps to 0.33, and both variables are significant at the 5% level. The fact that the model works best when both macro-level variables are included confirms our findings from the previous analysis. Levels of social spending do not have a statistically significant effect on the size of the education effect (Model 4 of Table 3).

## 5. Conclusion

This paper has argued and shown empirically how macro-level institutions shape the association between individual educational background and preferences for different kinds of education at the micro level. As such this study is part of a larger wave of new research in educational sociology (e.g. Breen, 2005; Andersen and Werfhorst, 2010). Specifically, we find that the impact of educational background on preferences is stronger in educational systems with a large share of students in vocational education, which is in line with studies showing the negative impact of segregated secondary school systems on educational mobility (Pfeffer, 2008). However, we also find that the degree of economic coordination mitigates the impact of individual background on preferences, i.e. high levels of economic

**Table 3** Preferences for types of education

Dependent variable	Coefficient estimate of the impact of educational background on preferences at the micro level (first stage)			
	(1)	(2)	(3)	(4)
Share of upper secondary students in technical or vocational education	0.00242 (0.00155)		0.00506** (0.00172)	0.00239 (0.00150)
Degree of coordination		−0.0253 (0.0774)	−0.210** (0.0737)	
Public social spending as % of GDP				0.000175 (0.00588)
Constant	−0.00461 (0.0890)	0.131** (0.0570)	−0.0133 (0.0866)	−0.00816 (0.177)
Observations	15	13	13	15
$R^2$	0.139	0.005	0.325	0.139

Notes: Robust standard errors in parentheses; \*\* $P < 0.05$ ; observations weighted with inverse standard errors of first stage.

coordination increase the economic pay-offs of investments in vocational skills and make vocational education more attractive for individuals with a stronger educational background. The paper integrates two strands of literature that have not interacted so far: scholarship in educational sociology and the VoC literature. We show how these two approaches can be combined in a fruitful way. Of course, this paper is merely a first step towards the necessary re-integration of the study of education in comparative welfare state research (Iversen and Stephens, 2008; Busemeyer and Trampusch, 2011). There are several avenues for future research.

First, and perhaps most obviously, it would be interesting to compare our findings on policy preferences to studies of actual educational choices. The two are obviously related, but they are not the same. Studying preferences provides insights into the extent that established institutional structures are politically supported at the micro level. The analysis of choices, in contrast, focuses on the real effects of institutions on behaviour.

Second, scholars could explore the role of investments in education in the politics of redistribution. Initial studies on this issue are mainly concerned with the macro level (Ansell, 2008, 2010; Jensen, 2011), but it could be expected that institutional contexts also have an impact on individual preferences in this case. Because education is less redistributive than other kinds of social policies (e.g. social assistance), the association between individual-level support for spending increases and income may in fact be quite ambiguous, so that the institutional set-up of the welfare state and the educational system matters a lot.

Third, the relationship between educational inequalities and social inequality also needs to be explored further at the macro level. Estévez-Abe *et al.* (2001) show that levels of income inequality are lower in countries with a large-scale vocational training system. This finding could not be confirmed in the methodologically more sophisticated analysis by Bradley *et al.* (2003), however, and it is at odds with educational sociologists' observation that stratified education systems lead to higher levels of educational inequality (Pfeffer, 2008). More recently, Busemeyer and Iversen (2011) have argued that the impact of vocational training on levels of inequality is conditioned by collective wage bargaining systems. They find that public or employer investments in vocational training are only associated with less labour market stratification when levels of bargaining centralization are high. Clearly, more research is needed here.

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