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### **MPIfG Journal Article**

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## Individual policy preferences for vocational versus academic education: Microlevel evidence for the case of Switzerland

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**Summary** This paper uses an original dataset from a survey conducted in Switzerland in 2007 to explore the dynamics of education policy preferences. This issue has largely been neglected in that most studies on welfare state attitudes do not look at preferences for education. We argue that education policy preferences vary along two dimensions: the distribution of resources across different sectors of the education system (that is, vocational training versus academic education) and the level of investment in education both from public and private sources. With regard to the former, the findings suggest that individual educational experience matters most, that is, individuals prefer to concentrate resources on those educational sectors that are closest to their own educational background. With regard to the latter, we find that affiliation to partisan ideologies matters much more than other variables. Proponents of the left demand more investment both from the state as well as from the private sector and oppose individual tuition fees.

**Keywords** academic education, vocational training, individual policy preferences, Switzerland

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This paper studies the determinants of individual preferences on education policy. This issue has not yet been studied systematically in the pertinent literature. Although a sizable body of literature researching the welfare state has analysed the determinants of

individual preferences on various welfare state policies (for a more detailed review, see below), it has paid little attention to education. In addition, the work in the field of educational sociology concentrates on studying the determinants of actual

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educational *choices*, that is, transitions from one level of education to the next, but not so much the preferences on education *policies* as such.

The present paper borrows from these two strands of literature to develop an explorative theoretical framework, focusing on the contribution of educational background, income, partisan affiliation and institutions to explain education policy preferences. More specifically, we look at two dimensions of variation in education policy preferences: the first dimension is the distribution of public resources amongst different types of education, such as vocational training, higher education or compulsory schooling; the second alludes to the role of the state in financing education in relation to private actors, such as individuals or training firms. In the empirical section, we rely on original data from a representative survey conducted in Switzerland in 2007.

To disclose our findings: educational background and income are important determinants of individual policy preferences concerning the *distribution* of public education spending across different sectors such as academic education versus vocational training. Individuals tend to support the concentration of public funding in those educational sectors from which they have emanated themselves. However, when it comes to the *level* of public funding, educational background and income have little explanatory power. Instead, partisan ideology becomes the dominant determinant of preferences with proponents of the left demanding more investments in human capital – both from private as well as public sources. In addition, we find that institutional context matters: concentrating public spending on vocational training is more popular in Swiss Cantons with a strong tradition in vocational education.

The study of education policy preferences is important from a theoretical as well as an empirical perspective. In democratic societies, policy preferences of individual voters matter. Of course, although voter preferences are aggregated and filtered by intermediary associations, political parties and institutions, studies have shown that there is link between individual attitudes and policy output (Wlezien, 1995). Boeri et al. (2001) document how widespread individual-level support for the welfare state poses a formidable obstacle against far-reaching welfare state retrenchment. Thus, we hope that the study of education policy preference will contribute to

improving our understanding of continuity and change in contemporary education systems. In particular, the study of the Swiss case can yield answers to the question of whether vocational training will remain a viable alternative to academic education in the future or whether the lack of individual support for maintaining routes of vocational education will lead to its eventual decay.

Our findings also have important implications for the further development of a political economy theory of education. Preferences for different kinds of education are strongly influenced by the individual's educational background. Thus, a more sociological perspective on preference formation is to be preferred over hyper-rational accounts, which would, for example, argue that highly educated individuals would support the expansion of vocational education in order to limit the supply of highly skilled workers. We also find that partisan politics is an important element in the political economy of education. However, partisan preferences on education are not simply a reflection of aggregated individual characteristics. Instead, ideological conflict over education plays out on a different dimension.

The paper is structured as follows: in the first section, we present a brief review of studies in comparative welfare-state research and educational sociology, identifying the specific shortcomings of these works and how our paper addresses them. Following that, we develop an explorative theoretical framework, which is then tested in the empirical section with data from Switzerland. The final section concludes and discusses avenues for future research.

## Literature review

Since the late 1980s (Hasenfeld and Rafferty, 1989; Papadakis, 1993), a sizable literature on the individual-level determinants of social policy preferences has developed. One strand within this growing body of work is rooted in political sociology (for example, Arts and Gelissen, 2001; Blekesaune, 2007; Blekesaune and Quadagno, 2003; Jaeger, 2009; Kangas, 1997, 2003; Lipsmeyer and Nordstrom, 2003; Lynch and Myrskylä, 2009; Roller, 1999; Van Oorschot, 2006), whereas another analyses preferences for redistribution from the perspective of political economy (Alesina and Angeletos, 2005;

Alesina and La Ferrara, 2005; Alesina et al., 2001; Amable, 2009; Benabou and Ok, 2001; Corneo and Grüner, 2000, 2002; Cusack, Iversen et al., 2006; Fong, 2001; Iversen and Soskice, 2001; Kenworthy and McCall, 2008; Piketty, 1995; Rehm, 2009; Scheve and Stasavage, 2006). Although direct interaction and cross-referencing between these two strands of literature is often lacking, some commensurate core findings have emerged over the years.

For one, and maybe most importantly, both self-interest and ideology matter in the explanation of differences in social policy preferences (Corneo and Grüner, 2002; Fong, 2001; Hasenfeld and Rafferty, 1989; Kangas, 1997; Papadakis, 1993). General support for the welfare state or redistribution is negatively correlated with income on the microlevel, because the poor can expect to benefit more from generous welfare state policies than the rich (but see Moene and Wallerstein, 2003 for a different argument). Moreover, for individual social policies with different redistributive implications, it has been shown that those who expect to benefit from the programme in question are also more supportive of its existence (Hasenfeld and Rafferty, 1989; Kangas, 2003; Van Oorschot, 2006).

However, research has also demonstrated that self-interest alone cannot account for the observed variety of policy preferences. Ideological orientations matter in addition to and beyond pure self-interest. In classic research designs, this question is framed in terms of the explanatory power of belonging, on the one hand, to various 'transfer classes', which are based on differences in access to welfare state policies, and on the other, to politico-economic classes (that is, labour and the bourgeoisie) (Papadakis, 1993). Transfer-class cleavages (for example, old age in the case of pensioners) can cut across politico-economic cleavages, so that evidence for the relevance of transfer classes is interpreted as support for the thesis of self-interest, whereas the continued existence of political alignment within politico-economic classes is taken as support for the relevance of ideological factors. In a simpler fashion, the relevance of partisan ideology in addition to and beyond economic self-interest can simply be controlled for in multivariate regression analyses by including partisan self-identification as an independent variable (for example, in Bean and Papadakis, 1998).

In addition to partisan ideology, general value orientations matter as well. Van Oorschot highlights the importance of perceptions of 'deservingness' for individual support regarding different welfare policies (Van Oorschot, 2006). Policies aimed at groups of people that are perceived as 'deserving', such as old, sick and disabled people, find more support than policies for the 'undeserving', such as immigrants. His findings are commensurate with an area of research in political economy, which shows that individuals who believe that social and economic hardship is a consequence of bad luck or fate are more supportive of redistribution than individuals who attribute hardship to individual idleness (Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005; Alesina et al., 2001; Fong, 2001; Corneo and Grüner, 2002). Scheve and Stasavage (2006) demonstrate how redistributive preferences are also associated with religious orientations. People who are more religious than others are less supportive of redistribution, because their faith lowers the psychological costs of hardship.

Institutional context also matters, although in this field of research, the findings are less conclusive and more ambiguous than in the previous ones. A classical topic in comparative welfare state research is to probe whether welfare state institutions shape individual preferences. Rothstein (1998) argues convincingly that 'just' institutions (that is, universal welfare state institutions that are perceived as being fair) increase the support for the welfare state in general. In line with this argument, a number of studies have looked at the association between the clustering of support for social policies and Esping-Andersen's 'worlds of welfare capitalism' (Esping-Andersen, 1990) with the expectation that support for the welfare state would be strongest in the Scandinavian countries and lowest in the Anglo-Saxon world (Arts and Gelissen, 2001; Bean and Padapakis, 1998; Papadakis, 1993; Blekesaune and Quadagno, 2003; Lipsmeyer and Nordstrom, 2003). The results, however, are far from conclusive. Differences in support between countries do not necessarily vary in line with the worlds of welfare capitalism, although recent work by Jaeger (2009), using a new methodological approach, seems to yield more robust results. Nevertheless, a crucial finding is that welfare state policies are popular in general, even in meagre welfare states such as the

United States (Fraile and Ferrer, 2005; Hasenfeld and Rafferty, 1989; Roller, 1999). A general problem, however, is that the direction of causality between welfare state institutions and individual preferences is not clear. Brooks and Manza (2007), for example, argue that individual policy preferences trigger changes in social policy, whereas Kenworthy (2009) questions the validity of that claim by showing that the expansion of welfare state generosity *preceded* an upsurge in popular support.

In addition to contributions in comparative welfare state research, recent work in educational sociology might help shed light on the determinants of individual-level policy preferences. Beginning with the seminal contributions of Breen and Goldthorpe (Breen and Goldthorpe, 1997; Goldthorpe, 1996; see also Esser, 1999) in the 1990s and, earlier, Boudon (1974), scholars have tried to answer the question why, despite decades of educational expansion, class differences in educational attainment continue to persist (Blossfeld and Shavit, 1993; Raftery and Hout, 1993). Breen and Goldthorpe (1997) show how class-related differences in the perception of relative costs and benefits of continued investments in education constitute class differentials in educational attainments, although individual decisions are based on rational choices. Hillmert and Jacob (2002) extend the Breen–Goldthorpe model by demonstrating that differences in the perception of costs and benefits not only affect individual decisions to continue or discontinue education, but also the choice between vocational training and general, academic education. Given the same choice opportunities, individuals with a lower socio-economic background tend to opt for vocational training instead of academic education, because they perceive university education as involving higher costs in the form of deferred income, a higher risk of failure and lower benefits, because completion of higher education is less necessary to maintain their class position relative to that of their parents (Breen and Goldthorpe, 1997). Over the years, the Breen–Goldthorpe model and its extensions have found significant empirical support (Becker, 2003; Becker and Hecken, 2009; Jaeger, 2007; Stocké, 2007).

What are the shortcomings in the literature and how does this paper address them? The most obvious one is that none of the studies introduced above looks at preferences for education policy

specifically. Studies in the field of comparative welfare state research include various social policies as dependent variables, but usually not education, although education is indeed featured regularly as a control variable at the microlevel. There are only very few exceptions to this general rule. For example, Busemeyer et al. (2009) found that older people are less supportive of increased spending on education in most OECD countries. Grob and Wolter (2007) and Cattaneo and Wolter (2009) found similar results for Switzerland. In the US context, Button (1992) showed that older people are less supportive of increases in school funding in local referenda. Nevertheless, the general dearth of studies is surprising, because like other social policies, policies governing investments in education have obvious redistributive implications. However, heeding the fateful claim of Wilensky (1975: 3) that ‘education is special’, comparative welfare state research has tended to neglect the study of education as an integral part of the welfare state (Busemeyer and Trampusch, 2011; Iversen and Stephens, 2008). Ex ante, it is an open empirical and theoretical question whether the associations identified for other social policies also hold for the case of education policy preferences. Still, as we will show below, it is possible to utilize this literature to devise concrete hypotheses.

Work in educational sociology, however, tries to explain individual educational *choices*, not policy preferences. It seems reasonable to assume that policy preferences are also somehow reflected in educational decisions, and, in fact, this is the reason why we introduce this strand of literature here to help develop an explorative framework. Yet it might also be the case that policy preferences are genuinely different from educational decisions, because preferences are less constrained than actual decisions. Boudon (1974) was the first to point out the importance of the primary and secondary effects of class on educational attainment. Breen and Goldthorpe (1997: 277) focus on secondary effects, that is, the way class background affects educational choices, *given the same level of previous educational attainment*. However, because of differences in the availability of cultural capital and other resources, we can expect to find class-related differences in academic ability even without taking educational decisions into account (primary effects). Due to the

existence of primary effects, policy preferences of individuals from lower socio-economic backgrounds might actually be quite different from educational decisions. For example, such individuals could well support the expansion of academic education, although they do not believe their own children might benefit from it in the short term because of lower academic ability. Hence, the comparison of the impact of class on education policy preferences vis-à-vis educational choices might shed light on the relative importance of primary versus secondary effects, although this issue is not pursued further in the present paper due to the lack of suitable empirical data.

### Theoretical framework

As is the case with all policies, individual preferences in education policy vary tremendously (see Tables 1 and 2 for descriptive data). In our analysis, we focus on aspects of financing education. As a plausible point of departure, we posit that individual preferences can be mapped on a two-dimensional matrix. The first dimension captures the distribution of public monies across different educational sectors. Primarily, we are interested in the distribution of resources between academic education on the one hand and vocational education and training on the other. As will become clear in a moment, this distinction maps more directly onto current debates in the welfare state and political economy literature than, say, the juxtaposition of compulsory schooling and post-secondary education. The second dimension alludes to the distribution of the costs of education and the role of the state in financing human capital formation, that is, whether the costs of education should be borne by the state or by private actors, such as individual students or training firms. It may well be the case that there are more than two dimensions of variation or that the two are actually closely correlated, so that they reduce to one common factor. Nevertheless, we believe that assuming these two dimensions is a plausible point of departure. The findings of the empirical analysis will confirm this hunch.

In the following, we will develop testable hypotheses, inspired by the abovementioned literature, about the impact of income, educational background, partisan affiliation and institutions on education

policy preferences. However, in comparison with most welfare state policies, the causal associations are not as clear-cut in the case of education, as will become clear in a moment. Therefore, most of the hypotheses are formulated in an open manner, because the literature leads to conflicting, ambiguous, but nevertheless equally plausible expectations.

### *Income and educational background*

Income is regarded as an important determinant of redistributive preferences (Cusack et al., 2006; Meltzer and Richard, 1981; Moene and Wallerstein, 2003). In the original Meltzer–Richard model, the straightforward expectation is that wealthy people oppose redistribution, because they would have to pay more for it, via higher taxes, than they could profit from it. In contrast, the less well off are in favour of redistribution, because they benefit from higher transfer payments.

The case of education, however, is less straightforward than purer forms of redistribution. With regard to our first dimension – the distribution of public monies across educational sectors – it seems reasonable to expect individuals to support the concentration of resources in the educational sector in which they expect their children to attend, which is also in line with the logic of ‘transfer classes’ in welfare state research (Bean and Papadakis, 1998). In a similar vein, it could be expected that individuals support the concentration of resources on the kind of education that they themselves have enjoyed. This holds true particularly in countries such as Switzerland, where vocational training is generally regarded as a viable alternative to academic higher education and remains an important factor in the socialization of young people into different occupations.

However, there are plausible alternative expectations. With regard to redistributive preferences, the ‘prospect of upward mobility thesis’ (Benabou and Ok, 2001) states that the poor will oppose redistribution if they expect to become wealthy in the near future – an explanation that has been applied plausibly to the case of the USA (Alesina et al., 2001: 208). Clearly, education is an important instrument to promote upward social mobility. Therefore, it may well be the case that less well-off people with an educational background in vocational education support the concentration of public resources

in higher education, because, as a consequence of the ubiquitous force of educational expansion, they expect their children to attend higher education instead of vocational training.

What is more, wealthy individuals might support the concentration of public resources in vocational education instead of higher education. Given the class bias regarding access to higher levels of education, wealthy and/or well-educated people expect their children to attend university in any case. The promotion of vocational education would then serve the purpose of diverting young people from lower income classes from taking up university study, attenuating competition for access to universities and to high-skill labour markets. Furthermore, wealthy people do not depend on the public funding of higher education to the same extent as middle-class or low-income people do, because they can resort to private means of funding more easily.

With regard to our second dimension of variation – the distribution of the costs of education – the predictions are equally ambiguous *ex ante*. On the one hand, low-income people could support the state taking over a large share of the costs of university education, because they believe their children will attend this kind of education in the near future and financing obstacles such as tuition fees are more important for less well-off people than for wealthy individuals. On the other hand, they could also oppose the expansion of the state's share in financing higher education, because they perceive this as a redistributive measure from their own class to the upper income ones. Furthermore, low-income people and/or individuals with a background in vocational education can be expected to support the statement that business should take over more financial responsibility in vocational training. For their part, wealthy people clearly benefit from state subsidization of the costs of higher education. Therefore, they should support the expansion of the role of the state in financing university education. However, the very wealthy could oppose further involvement of the state, because they can resort to private means of funding and would prefer to keep university education an elite system (Ansell, 2008). In fact, high-income people could well support both tuition fees, in order to limit access to higher education, and the generous subsidization of universities by the state, because they benefit most from these subsidies.

In sum, the impact of income and individual educational background on individual education policy preferences is ambiguous from a theoretical perspective. On the one hand, it could be expected that individuals with little income and education support the concentration of resources in educational sectors close to their own educational trajectories, that is, vocational training, and oppose the expansion of state financing in higher (academic) education, because this is perceived to benefit upper-income classes. Members of the more privileged strata of society would then support the concentration of resources on academic education and the participation of the state in shouldering a larger share of these costs. On the other hand, members of the lower income classes could also support the expansion of academic education, because they believe their children will benefit from public support for academic education in the near future. The higher income classes could well oppose this expansion of public higher education to maintain privileged access to higher levels of education or they could support it if they can ensure that limits to access are maintained, for example, with the help of high tuition fees. The empirical analysis below will show which of these hypotheses receives more support. As income and educational attainment are positively correlated, it is important to test the hypotheses in a multivariate framework where all the explanatory variables are included in the regressions at the same time.

### *Partisan identification*

In social policy, political parties send out clear signals: leftist parties support the expansion of the welfare state, while rightist parties oppose it (Castles, 1982). Again, in education policy, the relationships are more ambiguous, because the redistributive implications of educational investments are not as clear-cut. Some studies find that leftist parties support the expansion of education to a similar extent as the expansion of the social state (Busemeyer, 2007; Schmidt, 2007). Contrary to this, Ansell, in part following Boix (1998), argues that social democratic parties are more reluctant to increase investments in higher education, because families from upper-income classes – usually not the core clientele of leftist parties – benefit from this

measure to a greater extent than working-class constituencies (Ansell, 2008). Jensen (2011) posits that partisan politics in general do not matter much with regard to the level of educational spending, which should be understood as a consequence of de-industrialization in conjunction with the specific economic institutional context. Finally, Busemeyer (2009) finds that the governmental participation of social democrats leads to increased public spending on higher education in particular. It is an open question whether this new zeal of the left for investments in tertiary education should be seen as an attempt to appeal to new voter groups in the middle class or whether it reflects changing education policy preferences of their core electoral constituencies.

The present paper can help clear up some of these ambiguities, because we can directly observe the impact of partisan identification on education policy preferences. Of greatest interest here are the education policy interests of proponents of the left, because it is this point where the literature yields the most conflicting predictions. If voters support the kind of education closest to their own educational interests and experiences, we would expect proponents of the left to support the concentration of public resources in vocational education, whereas the sympathizers of the right should support academic education. However, as a consequence of educational expansion, the traditional supporters of the left might be keener on expanding public higher academic education to promote social mobility for their children. If this were true, 'academic drift' would contribute over time to the fading out of vocational education. Obviously, these considerations parallel those on the impact of income and education since partisan identification is correlated with these two.

Still, partisan affiliation might play a larger role with regard to the second dimension of variation in education policy preferences – the distribution of costs between the individual, on the one hand, and the state and training firms, on the other. Here, a stronger ideological separation between supporters of the left and the right can be expected above and beyond the impact of income and education, because the relationship between public and individual responsibility in the financing of public policies such as education is at the core of the left–right dichotomy. More specifically, we hypothesize that individuals

identifying with the left prefer the state to take over a greater responsibility in financing education, which leads them, for example, to oppose proposals to have students pay higher tuition fees and support the expansion of funding for vocational schools. In countries such as Switzerland, where vocational training is largely firm-based and costs are shared between the apprentice, the state and the training firm (see Wolter et al., 2006), we could also expect leftist sympathizers to demand that training firms take over a larger share of training costs (for example, by paying higher apprentice wages). In contrast, individuals who identify with conservative parties are expected to care less about expanding subsidies to vocational schools and increasing the cost share of training firms or tuition fees.

### *Institutions*

Individual preferences are influenced by the institutional context above and beyond the hard constraints institutions immediately impose on actors. Institutions define different logics of appropriate behaviour (March and Olsen, 1984) and socialize individuals into a specific political and cultural context. Educational institutions, for example, shape the perceptions and images of a 'decent' education and thus affect educational decisions and policy preferences. Because of strong federalism, the education systems of the Swiss Cantons differ significantly (Wolter, 2007). In German-speaking Switzerland, firm-based vocational training in the form of apprenticeships predominates (post-) secondary education as it does in Germany. Yet in Latin Switzerland (French- and Italian-speaking), school-based vocational education and academic education are more prominent, reminiscent of the state-centred education model of neighbouring France. *Prima facie*, we expect stronger support for the concentration of public resources on vocational education in the Cantons where a larger share of a typical youth cohort goes through apprenticeship training. However, in Cantons with a low percentage of youths in apprenticeship training, 'academic drift' is more pronounced; therefore, the general support for concentrating public resources on higher academic education is greater. Similarly, we expect that denizens of Cantons with a higher share of either school-based vocational or academic



education are more supportive of expanding the state's share in financing education, whereas individuals in Cantons with strong apprenticeship training demand a strong involvement of business, that is, training firms. To study the effect of each of these factors separately (*ceteris paribus*), we will later show the results of applying multivariate analysis techniques.

## Data and methods

To study the hypotheses presented in the previous section, we commissioned the professional survey institute Gesellschaft für praktische Sozialforschung (GfS)<sup>1</sup> to collect data from a representative sample of Swiss citizens.<sup>2</sup> The sample contains information on 2025 Swiss citizens over the age of 25 years. The data were collected in May 2007 using computer-assisted telephone interviewing (CATI). The interviews were held in German, French or Italian, depending on the language region. Apart from individual socio-economic and family characteristics, respondents were asked to express their opinion on a series of questions concerning education and educational financing.

The goal of this paper is to analyse the determinants of individual preferences for public spending as directly as possible, focusing mainly on the influence of educational background, income, partisan affiliation and cantonal institutions. As mentioned earlier, we are interested in two dimensions of education financing preferences. First, we want to investigate in which sector individuals would like the public money to be spent, and second, whether the costs should be borne by the state or by private actors.

Two specific questions were developed<sup>3</sup> to analyse the first dimension, that is, the distribution of public resources across the different educational sectors.<sup>4</sup> The first question asked the respondents: 'In which educational sector would you prefer public money be spent in the future?' Respondents could choose from five possibilities: (1) preschool, primary or elementary school, (2) grammar school (*Gymnasium*),<sup>5</sup> (3) vocational training (basic vocational education at the upper secondary level), (4) tertiary education (including higher vocational training, academic universities, universities of applied sciences and teacher training colleges) and (5) continuing education. The wording of the second question on the distribution of

resources across educational sectors provides fewer answer categories in order to tease out more clearly the differences in preferences between vocational and academic education: 'Provided you could choose the sector in which your taxes should be spent, which one would you select?' There were only two possible answers: grammar schools (the academic schools at upper secondary level leading to a university entrance diploma) and universities, on the one hand, or vocational training, on the other.<sup>6</sup> The wording of this question thus forces respondents to prioritize between academic and vocational education.

The second dimension concerns the role of the state in financing education. In Switzerland vocational/professional education is mostly privately financed (either by the student or by the firm), while academic or general education (grammar schools and universities) are financed by public funds. In order to analyse the financing preferences, we use four questions that refer to different types of education, that is, vocational or general academic. The advantage of using four different specific questions instead of a single general one is that it allows us to better check the consistency of the response patterns and to avoid results that would be based on framing effects.

The questions are as follows:

- Do you think that the state should pay for higher vocational/professional training? – Yes/No<sup>7</sup>
- Do you think that students attending universities and universities of applied sciences should pay most of their study costs through fees and tuition? – Yes/No
- Do you think that the private sector invests enough in vocational training? – Yes/No
- Do you think that the public sector invests enough in vocational training schools? – Yes/No

Contrary to the first block of questions, these questions do not only ask which types of education (here, vocational versus academic) the respondent prefers to have receive public investments but also about the role and the degree of involvement of the state relative to the private sector.

We pointed out previously that the association between the individuals' educational background and education policy preferences could be quite ambiguous. In order to test the hypotheses presented there, we created four education dummies based on

the highest level of education attained and following standard degree classification. The first dummy is *compulsory school*, which includes people who just completed primary school or lower secondary school. The dummy *apprenticeship* includes all people who completed a vocational training at the upper secondary level, the dummy *tertiary non-academic* includes all people who completed vocational training at the tertiary level (this includes higher degrees in vocational/professional training (ISCED 5B), university of applied sciences and teacher training colleges<sup>8</sup>). Finally, *academic education* includes all people with a grammar school or university degree.

With respect to income, respondents were asked about their net monthly household income, and each respondent could choose among five income classes. We generated a binary variable for each income category. Missing values were imputed using the Swiss Labour Force Survey as an information source.

In order to control for political orientation we created three dummy variables: right, centre and left.<sup>9</sup> The individuals were asked to indicate their political sympathies using an 11-point scale from 0 to 10, in which 0 represented the extreme left and 10 the extreme right. The indicator 'right' was created by assigning 1 to all people who ranked themselves with a 7 or higher; 'left' was created by assigning 1 to people who responded by giving themselves a 3 or lower. The rest (4, 5, 6) were classified as 'centre' (the distribution of the variable can be seen in Tables 1 and 2). The categorization of the variable has produced distributions that are compatible with the voter shares for political parties that occupy the left, right or middle positions on the political spectrum.

With regard to institutions, we created a variable that captures the importance of vocational training in a Canton, namely the proportion of the total population in the Canton with a vocational training degree as their highest educational degree (BFS, 2008).

The main control variables (apart from education, income, partisan affiliation and institutions) are age, gender, language region, school-age children (whether the respondent has children in school) and residence (whether the respondent lives in a city, an agglomeration or a rural area).

## Descriptive statistics

Tables 1 and 2 provide the descriptive summary of the data. To simplify the analysis of the first question, we merged preschool, primary and lower secondary school into one category (compulsory school) and tertiary education (including universities of applied science and teacher training colleges) and grammar school into another (tertiary education). The results in Table 1 show that 56 percent of the respondents would prefer to assign more funds to compulsory school, while only 8 percent of the respondents would support an increase in expenditures for academic education. The support for academic education amongst those with a tertiary academic degree is above the mean, whereas the opposite is true for people with just compulsory schooling. The difference in support between the groups is statistically significant. Income, however, does not seem to explain differences in the preferences. Right-wing voters are more likely to support apprenticeships (vocational education) than voters with preferences for leftist positions. People who have children still in school are more likely to support extra funds directed to compulsory school, while they prefer less public money invested in continuous education in comparison to people who do not have children or have children who are not attending school.

Regarding the questions about who should finance the costs of education, that is, whether they should be borne mostly by the private sector or by the state, the results show that about 60 percent of the respondents would like higher vocational/professional training degrees to be financed by public funds, almost half of the respondents think students at universities and universities of applied sciences should pay for their study with higher tuition fees. Half of the respondents think that the state invests enough in vocational training schools, but only 30 percent think that this is the case with respect to the private sector. Concerning the questions related to the financing of education, that is, our second set of questions, Table 2 shows that there are significant differences between political ideologies. Voters of the right are rather satisfied with the existing levels of public and private investments, whereas supporters of the left demand more investment from the public as well as the private sector. People with compulsory schooling only and people without children

**Table 1** Descriptive statistics: Which sector should be promoted (%)?

	<i>Compulsory school</i>	<i>Vocational training</i>	<i>Tertiary education</i>	<i>Continuing education</i>	<i>Total</i>	
					<i>n</i>	<i>%</i>
Male	0.52 (0.02)	0.24 (0.01)	0.09 (0.01)	0.15 (0.01)	1009	50
Female	0.59 (0.02)	0.22 (0.01)	0.06 (0.01)	0.13 (0.01)	1016	50
Compulsory school	0.57 (0.02)	0.27 (0.02)	0.05 (0.01)	0.11 (0.01)	495	24
Apprenticeship	0.52 (0.02)	0.24 (0.01)	0.08 (0.01)	0.16 (0.01)	961	47
Tertiary non-academic	0.63 (0.03)	0.19 (0.02)	0.07 (0.01)	0.11 (0.02)	339	17
Tertiary academic	0.55 (0.03)	0.17 (0.03)	0.14 (0.02)	0.14 (0.02)	230	11
Income (CHF)						
<3000	0.54 (0.03)	0.24 (0.03)	0.09 (0.02)	0.13 (0.02)	231	11
3000–5000	0.55 (0.02)	0.25 (0.02)	0.07 (0.01)	0.13 (0.02)	483	24
5000–7000	0.55 (0.02)	0.22 (0.02)	0.07 (0.01)	0.16 (0.02)	521	26
7000–9000	0.57 (0.03)	0.22 (0.02)	0.07 (0.01)	0.14 (0.02)	398	20
>9000	0.56 (0.03)	0.22 (0.02)	0.11 (0.02)	0.11 (0.02)	392	19
Right	0.52 (0.03)	0.26 (0.02)	0.09 (0.01)	0.13 (0.02)	516	25
Left	0.62 (0.03)	0.19 (0.02)	0.08 (0.01)	0.11 (0.02)	356	18
Centre	0.55 (0.03)	0.23 (0.02)	0.07 (0.01)	0.15 (0.02)	1153	57
Children in school	0.59 (0.02)	0.25 (0.02)	0.06 (0.01)	0.10 (0.01)	701	35
No children in school	0.54 (0.01)	0.22 (0.01)	0.08 (0.01)	0.16 (0.01)	1324	65
Vocational training rate	0.74 (0.31)	0.70 (1.04)	0.71 (0.54)	0.73 (0.66)		73
Total	0.55	0.23	0.08	0.14		

Notes: Standard errors in parentheses.

in school show a greater, statistically significant inclination to support higher tuition fees for students. They are also more satisfied with the amount of private investment in vocational training compared with individuals holding tertiary degrees and those having children in school, respectively.

Descriptive results seem to indicate above all that it is the educational background of voters and

the fact of having children still in school that matters most in explaining differences in educational preferences and the ways to finance education. Political affiliation seems to be important mostly in determining *how* education expenditure should be financed. However, it might be that several of the independent variables are correlated, that is, people with a certain educational

**Table 2** Descriptive statistics: Who should pay for the different educational costs (%)?

	<i>Vocational rather than general education (1)</i>	<i>Higher vocational education financed by public funds (2)</i>	<i>Students should pay fees (3)</i>	<i>Private sector invests enough in vocational education (4)</i>	<i>Public sector invests enough in vocational schools (5)</i>
Male	0.88 (0.01)	0.61 (0.02)	0.50 (0.02)	0.35 (0.02)	0.54 (0.02)
Female	0.86 (0.01)	0.64 (0.02)	0.44 (0.02)	0.23 (0.01)	0.40 (0.02)
Obligatory school	0.92 (0.01)	0.63 (0.02)	0.56 (0.02)	0.41 (0.02)	0.52 (0.03)
Apprenticeship	0.88 (0.01)	0.60 (0.02)	0.48 (0.02)	0.30 (0.02)	0.48 (0.02)
Tertiary non-academic	0.86 (0.02)	0.67 (0.03)	0.43 (0.03)	0.20 (0.02)	0.41 (0.03)
Tertiary academic	0.74 (0.03)	0.68 (0.03)	0.33 (0.03)	0.20 (0.03)	0.47 (0.04)
Income (CHF)					
<3000	0.85 (0.02)	0.62 (0.03)	0.53 (0.03)	0.27 (0.03)	0.41 (0.04)
3000–5000	0.90 (0.01)	0.67 (0.02)	0.47 (0.02)	0.30 (0.02)	0.48 (0.03)
5000–7000	0.90 (0.01)	0.62 (0.02)	0.50 (0.02)	0.33 (0.02)	0.49 (0.03)
7000–9000	0.87 (0.02)	0.63 (0.03)	0.41 (0.03)	0.27 (0.02)	0.47 (0.03)
>9000	0.82 (0.02)	0.59 (0.03)	0.47 (0.03)	0.29 (0.02)	0.52 (0.03)
Right	0.88 (0.02)	0.54 (0.02)	0.54 (0.02)	0.39 (0.02)	0.55 (0.03)
Left	0.84 (0.02)	0.75 (0.02)	0.33 (0.03)	0.14 (0.02)	0.37 (0.03)
Centre	0.88 (0.01)	0.62 (0.01)	0.48 (0.02)	0.30 (0.01)	0.48 (0.02)
Children in school	0.86 (0.01)	0.64 (0.02)	0.39 (0.02)	0.23 (0.02)	0.43 (0.02)
No children in school	0.88 (0.01)	0.62 (0.01)	0.52 (0.01)	0.33 (0.01)	0.50 (0.02)
Vocational training rate	0.73 (0.03)	0.71 (0.03)	0.75 (0.03)	0.75 (0.04)	0.75 (0.04)
Total	0.87	0.63	0.47	0.30	0.48

*Notes:* (1) Provided you could choose the sector in which your taxes should be spent, which one would you select? General education or Vocational training; (2) Do you think that the state should pay for higher vocational/professional training? Yes/No; (3) Do you think that students attending universities and universities of applied sciences should pay most of their study costs through fees and tuition? Yes/No (4) Do you think that the private sector invests enough in vocational training? Yes/No (5) Do you think that the public sector invests enough in vocational training schools? Yes/No. Standard errors in parentheses.

background are more likely to have a certain political ideology. Therefore we use multivariate analyses in order to study the effect of each of these factors separately (*ceteris paribus*).

## Empirical results

The hypotheses concerning individual preferences for public spending in education, outlined earlier, are

studied here using standard multivariate econometric techniques.

*To which educational sector should public resources for education be attributed in the future?*

To analyse this first dimension, respondents were asked which educational sector should have the highest priority in the allocation of public money in the future. We grouped the possible answers in four categories: compulsory school, apprenticeship training (upper-secondary level, firm-based, basic vocational training), academic education (including grammar schools or *Gymnasium*, higher vocational training, teacher training and universities) and continuous education. We use a standard multinomial logit model that allows us to evaluate the relative impact of spending public funds for each of the educational levels (with tertiary education as the reference category).

The results are presented in Table 3, which shows that respondents with an academic education (grammar school or academic university degree) are less willing to prioritize educational spending on compulsory school or apprenticeship training over an increase in spending on tertiary education compared with people with non-academic education. The probability of favouring investment in compulsory schools is 56 percent for the highly educated, whereas this probability is 60 percent for people with basic school qualifications. People with compulsory school and apprenticeship as their highest level of completed education are also more likely to support spending on apprenticeship training (about 26 and 24 percent, respectively). This is in line with the hypothesis that individuals prefer to assign resources to the educational sector that corresponds to their own educational trajectory. Interestingly, people who completed a non-academic tertiary education are also more willing to support increases of public funds assigned to apprenticeships relative to tertiary education in comparison to people with an academic educational background. The predicted probability of people who completed an academic education at the tertiary level to support funding for apprenticeship is approximately 17 percent, while this probability is 19 percent for people with a tertiary non-academic degree. This means respondents

with an academic background have 2 percentage points less probability of supporting apprenticeships.

Income levels as well as political preferences – once controlled for educational background – do not seem to explain differences in the response patterns.<sup>10</sup> Educational institutions and traditions of the Canton of residence, however, have a significant influence. Respondents who live in Cantons where vocational training is more common give greater support to spending extra money on apprenticeship training or compulsory schooling relative to tertiary education. The age of the respondent also matters; somewhat surprisingly, the older the person is, the more likely this person prefers investment in tertiary education. Therefore, there is no evidence that the support for vocational education or apprenticeship training primarily comes from the older and more tradition-oriented share of the population. Respondents whose children are still in school have – as one could expect – a higher preference for spending public money on compulsory schooling than on tertiary education but are indifferent in the choice between vocational training and tertiary education. Also surprisingly, respondents living in the French- and Italian-speaking Cantons (Latin Cantons), who generally share a greater cultural difference to the Germanic model of apprenticeship training, are more willing to invest in apprenticeship training than in tertiary education. This difference between the language regions is significant in models with or without controls for the share of people having a vocational education degree in the Canton of residence. Specifically, individuals from the French- and Italian-speaking regions have a 16-percentage point greater probability of supporting apprenticeship than individuals from the German-speaking regions. It shows that the support for apprenticeship training does not have to rely solely on tradition.

The second question on the distribution of education funds restricts the choice of answer categories to two, that is, academic or vocational education. This issue is addressed directly by asking people to which of the two sectors they would give the highest priority when it came to spending public money. The two possible answers were either grammar schools and universities or vocational education and training (which includes basic and higher vocational education and training). We analyse the probability of choosing vocational education and

**Table 3** To which education sector should more public resources be assigned?

	(1) <i>Compulsory school</i>	(2) <i>Apprenticeship</i>	(3) <i>Continuing education</i>
Right	-.192 (.176)	-0.943 (.179)	-0.31 (.219)
Left	.119 (.255)	-.128 (.308)	-.199 (.288)
Compulsory school	1.072*** (.342)	1.470*** (.341)	.54 (.336)
Apprenticeship	.277 (.298)	.714** (.331)	.323 (.371)
Tertiary, non-academic	.713*** (.212)	.762** (.315)	.33 (.260)
Income (CHF)			
3000–5000	.307 (.418)	.479 (.329)	.394 (.515)
5000–7000	.160 (.342)	.257 (.296)	.404 (.394)
7000–9000	.267 (.411)	.378 (.352)	.435 (.348)
>9000	-.218 (.466)	-.010 (.415)	-.312 (.549)
Vocational training rate	.031** (.016)	.035** (.015)	.041** (.019)
Children in school	.317** (.149)	.282 (.210)	-.320* (.192)
Age	-.021*** (.005)	-.014*** (.005)	-.017*** (.005)
Male	-.514*** (.191)	-.322 (.237)	-.301 (.194)
Latin Switzerland	-.070 (.458)	.910* (.477)	.621 (.523)
Rural areas	.0467 (.322)	.095 (.374)	.282 (.357)
Small town	-.144 (.177)	-.026 (.278)	.117 (.246)
Constant	.507 (1.141)	-1.907* (1.055)	-1.924 (1.480)
Log Likelihood	-2059.878	-2059.878	-2059.878
Observations	1889	1889	1889

*Notes:* Multinomial logit of the probability of choosing a certain education sector. Columns: (1) Compulsory school, (2) Apprenticeship, (3) Continuing education. Reference group: tertiary education including higher vocational education. Reference groups for explanatory variables: centre, tertiary academic, income <3000, German Switzerland, city. Standard errors in parentheses.

Log likelihood of constant only model: -2139.951.

\*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

training over academic education using a standard probit model (Table 4).

Most of the variation in the preferences can be explained once again by the educational background

of the respondents. All respondents without an academic university degree are significantly more likely to prefer investments in vocational education and training over academic education. People without

academic degrees are between 7 and 11 percentage points more likely to choose vocational education and training. In addition, the income level plays a significant role for choosing priorities, with lower income categories having a stronger preference for

vocational types of education relative to academic education even after having controlled for educational attainment. People with a monthly income under 7000 CHF are about 5 percentage points more willing to support vocational education.

**Table 4** Probit model of the probability of preferring to assign more resources to vocational education: marginal effects

	(1)	(2)	(3)
Right	0.004 (.019)	0.004 (.019)	0.004 (.019)
Left	-.037* (.024)	-.018 (.022)	-.014 (.022)
Compulsory school		.114*** (.018)	.109*** (.019)
Apprenticeship		.098*** (.023)	.092*** (.023)
Tertiary, non-academic		.072*** (.019)	.070*** (.011)
Income (CHF)			
3000–5000		.049* (.023)	.045* (.024)
5000–7000		.052** (.023)	.049* (.024)
7000–9000		.034 (.025)	.031 (.027)
>9000		.005 (.028)	.004 (.030)
Vocational training rate			.0004 (.001)
Children in school			-.023 (.032)
Age			-.010 (.018)
Male			.0002 (.001)
Latin Switzerland			.007 (.016)
Rural areas			.037* (.019)
Small town			.014 (.019)
Log Likelihood	-686.244	-666.057	-661.644
Observations	1786	1786	1786

*Notes:* Reference groups for education: tertiary academic. Reference group for area of residence: city (more than 100,000 inhabitants). Reference group for political orientation: centre.

Standard errors of marginal effects in parentheses.

Log likelihood of constant only model: -687.84.

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 5 Probabilities of financing preferences: marginal effects

	(5)	(6)	(7)	(8)
Right	-0.093*** (.029)	0.058* (.030)	0.064** (.028)	0.051 (.033)
Left	.115*** (.030)	-.123*** (.032)	-.145*** (.027)	-.090** (.038)
Compulsory school	-.020 (.044)	.182*** (.044)	.181*** (.047)	.0363 (.052)
Apprenticeship	-.074* (.039)	.124*** (.041)	.096** (.039)	.010 (.046)
Tertiary, non-academic	-.002 (.045)	.096** (.047)	.004 (.045)	-.062 (.053)
Income (CHF)				
3000–5000	.067 (.041)	-.057 (.043)	.024 (.043)	.063 (.051)
5000–7000	.039 (.041)	-.040 (.043)	.038 (.043)	.055 (.051)
7000–9000	.033 (.045)	-.097** (.046)	.005 (.046)	.054 (.055)
>9000	.0002 (.046)	-.035 (.048)	.028 (.048)	.098* (.054)
Vocational training rate	-.004* (.002)	.001 (.002)	.0001 (.002)	.002 (.002)
Latin Switzerland	.106** (.044)	-.215*** (.045)	-.154*** (.040)	-.073 (.053)
Children in school	.005 (.026)	-.057** (.027)	-.039 (.025)	-.026 (.030)
Age	.0004 (.001)	.002*** (.001)	.001 (.001)	.001 (.001)
Male	-.026 (.024)	.054** (.025)	.089*** (.023)	.108*** (.028)
Rural areas	-.059* (.031)	.045 (.032)	.005 (.030)	.011 (.036)
Small town	-.010 (.030)	.012 (.031)	.011 (.029)	.041 (.035)
Log likelihood	-117.405	-1185.661	-975.677	-945.793
Log likelihood constant only model	-1224.959	-128.148	-1058.307	-979.573
Observations	1852	1851	1744	1415

Notes: Columns: (5) Probit model of the probability of wanting the state to pay for higher vocational education, (6) Probit model of the probability of wanting university students to pay for most of their costs, (7) Probit model of the probability of thinking that the private sector invests enough in vocational education, (8) Probit model of the probability of thinking that the public sector invests enough in vocational training schools. Reference groups, see Table 3. Standard errors of marginal effects in parentheses.

\* $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\* $p < 0.01$ .

### Who should pay for the education costs?

The second issue concerns the role of the state in financing education, which is analysed using the four

questions described earlier. The first one concerns the choice of financial sources (public versus private) for financing *higher* vocational/professional education (ISCED 5B). Model 5 in Table 5 shows that, in



**Table 6** Percentage changes in the probabilities of having certain financing preferences (%)

	(1)	(2)	(3)	(4)
Right	-14.80***	12.38*	21.60**	10.72
Left	18.25***	-26.18***	-48.33***	-18.54%**

*Notes:* Percentage changes based on the coefficients for right and left from Table 5. Each column refers to one of the following questions (1) Do you think that the state should pay for higher vocational/professional training? Yes/No; (2) Do you think that students attending universities and universities of applied sciences should pay most of their study costs through fees and tuition? Yes/No (3) Do you think that the private sector invests enough in vocational training? Yes/No (4) Do you think that the public sector invests enough in vocational training schools? For example being right oriented decreases the probability of answering 'yes' to question (1) by almost 15 percent.

contrast to the questions regarding the preferences in selecting the educational sector on which to spend public money, political preferences matter considerably when explaining differences concerning the *role of the state* in the funding of education. As outlined in the hypotheses, people who identify themselves more with the political right are less likely to support an increase of public financing for higher vocational/professional training compared with people who sympathize with parties at the centre or on the left of the political spectrum. Specifically, people who place themselves on the right side of the political spectrum are about 7 percentage points less likely to support more state spending on higher vocational training than people from the centre. Educational and economic backgrounds do not explain much of the difference. One exception is the case of people who have a basic vocational training degree. Surprisingly, these people are less supportive of the state allocating more funds to higher vocational/professional education. One explanation could be that this category of people is made up of those who could have obtained a degree in higher vocational education but did not and therefore do not want to fund something they have more or less explicitly not wanted for themselves or had unsuccessfully tried to achieve.

Respondents who are favourable to greater public educational spending in general are also more likely to be in favour of more public funds for higher

vocational/professional education. The possibility of controlling for an overall preference for spending more on education rules out some of the potential bias in the interpretation of the other variables since the differences in the preferences between public and private financing for higher vocational/professional education could simply reflect general differences concerning the levels of public funding of education.<sup>11</sup>

The next question asked the respondents whether students attending universities and universities of applied sciences should bear a greater part of their educational costs by paying higher tuition fees. The results of the probit model are shown in Table 5, model 6. Once again, political preferences have a big influence on the response patterns. Respondents with preferences for the right of the political spectrum prefer bigger private contributions, whereas those on the left of the spectrum prefer no change to the actual situation of low tuition fees (being politically left oriented decreases the probability of wanting a change by approximately 26 percent; see Table 6). Respondents with compulsory schooling only or a basic vocational training degree are more likely to support the initiative to increase tuition fees. People from the French- or Italian-speaking regions prefer that universities are paid with public funds (2 percentage points less likely to choose the alternative that students pay higher fees), the same as people who support increases in public spending in education in general – which shows at least consistency in the response behaviour of those surveyed.

The next two questions inquire into the opinion of respondents on whether the private sector invests enough in vocational education and training (Table 5, model 7) and whether the government spends enough for vocational schools (Table 5, model 8).

The significant differences in the response patterns relate mainly to political preferences and the language region of residence. Respondents who live in the Latin Cantons and those having preferences for the left on the political spectrum think that both the private economy and the government should invest more in vocational education and training. In contrast, respondents with compulsory education or a basic vocational training degree are significantly more satisfied with the current levels of private engagement in vocational education and training.

In order to make our findings more tangible, we provide estimates for the substantive size of the effects in Table 6. Based on the models from Table 5, this

table depicts changes in the support for different policy proposals in terms of percentage changes in predicted probabilities, resulting from a manipulation of the partisan ID variable (the baseline category is the political centre). Almost all estimates are statistically significant and substantive in magnitude. Compared with an individual in the political centre, the predicted probability for right-leaning individuals to support higher state spending on higher vocational training is reduced by 14.8 percent, while these individuals are more likely to support the statements that students should pay for university education (plus 12.4 percent) and that private sector as well as public sector spending on vocational training is sufficient (plus 21.6 percent and plus 10.7 percent (not significant), respectively). In contrast, left-leaning individuals are more likely to exhibit support for increased state spending on higher vocational training (plus 18.3 percent), less likely to support tuition fees (minus 26.2 percent) and much less likely to be satisfied with existing levels of private and public sector spending on vocational training (minus 48.3 percent and minus 18.5 percent, respectively). In sum, estimates on the substantive size of the effects in Table 6 show that partisan identification is a strong predictor of individual preferences with regard to the distribution of costs for educational investments between the individual, the state and the private sector.

## Summary and conclusions

In this paper we have analysed the determinants of preferences on education policy, both with regard to the distribution of public monies across educational sectors as well as the general level of public investment relative to the private funding of education. Summarizing our findings, we can state that differences in education policy preferences concerning the types of education to promote can be explained by individual educational background. Individuals tend to support the concentration of resources in those sectors that are closest to their own educational trajectories. Partisan ideology cannot explain these differences in support for vocational training versus academic education. However, when it comes to the *level* of public investment in human capital formation, partisan ideology emerges as the strongest predictor, whereas educational background and income account for much less of the variation of individual preferences in this dimension. Interestingly, this

left–right division is not about the division of labour between the state and the economy in the financing of education, but rather about the distribution of costs between the individual on the one hand and the state and the economy on the other. That is, proponents of the left demand more investment in education both from the state and from the private sector, but they oppose a rise in individual tuition fees. One can interpret this as a preference for collective responsibilities versus individual ones.

We also find that cultural differences and traditions matter in some of the explanations of preference differences. Respondents in Cantons with a higher share of vocational education show stronger preference for the development of apprenticeship training relative to tertiary education, and residents in Latin Cantons show preferences for a stronger public responsibility relative to an individual one, even after having controlled for political orientation. The latter shows impressively that general or culturally transmitted attitudes concerning the role of the public and the private sectors can dominate individual and topic-related differences. It also shows that individual or collective experience with vocational forms of education matter, relative to academic education, for the degree of support of vocational education, although this is not the only determining factor.

These findings have important implications for the development of a political economy theory of education. Most importantly, a grounded, more sociological perspective on preference formation fits the empirical evidence best. Although self-interest continues to be an important determinant as in other social policies, a hyper-rationalist account of education policy preferences as is implicit in Ansell (2008, 2010) does not take into account the impact of the social and institutional context on individual preferences. Thus, highly educated individuals do not want to restrict access to higher education to limit the supply of high-skilled labour, which would be rational. Instead, they support further increases in spending on academic education. Equally, individuals with a background in vocational education do not support spending on academic education, but do support continued investments in vocational education.

A second implication for the political sustainability of vocational education directly follows from this as well as our finding that institutional contexts on the macro level matter above and beyond individual-level factors. One of the few mega-trends of the last

decades has been the expansion of access to higher levels of education, that is, university education in the advanced industrial democracies. This trend implies that vocational education and training would become a less and less attractive educational choice for youths and parents over time. Our findings, however, show that there is considerable political support for the continued existence and even further expansion of a vocational track besides academic education. Of course, this reflects the particular character of the Swiss education system. But in a sense, it can be taken as evidence of how macro-level institutions shape preferences on the micro level and how this process eventually feeds back into policy-making.

Third, our findings suggest that partisan politics are important in the field of education. However, rather than simply reflecting individual predispositions, ideological conflict over education spans a second dimension of partisan competition, which centres on the question of individual versus collective responsibility in the financing of education. Therefore, preferences and positions of political parties are not simply aggregated individual characteristics of their alleged core constituencies, but might well reflect deeper ideological conflicts and cleavages (for example, based on religion) that need to be further explored.

What are avenues for future research? Obviously, it would be very worthwhile to expand the study of education policy preference from Switzerland to other countries or the universe of developed (for example, OECD or EU) countries as a whole. This could, for example, shed light on the question of how much of the support for a particular type of education is rooted in the experiences with these types of education and how open societies are to forms of education that are less common in their national context. The case of Switzerland, in conjunction with a few other countries such as Germany and Austria, may be different in kind from the other OECD countries, because vocational training is well developed and widely regarded as a viable alternative to school-based or academic education. In countries without a well-developed vocational training system, the 'prospect of upward mobility' might lead to stronger support of the less well-off for the expansion of higher education. Unfortunately, data availability poses significant constraints on attempts to test this hypothesis in an internationally comparative context. At least, data from the International Social Survey

Programme (ISSP) and the Eurobarometer might be used to study individual preferences for educational spending and the ranking of academic education over vocational training (Busemeyer, 2010; Busemeyer and Jensen, 2010), but a preferable option would be to conduct original country-level surveys similar to this one. This would allow for a more fine-grained analysis of individual and national preferences.

### Notes

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1. The GfS Institute is one of the leading institutes in Switzerland carrying out opinion polls. It has a long tradition in political analyses and representative polls for elections and votes and is therefore well known to the Swiss population.
2. The sample was selected randomly using the Swiss telephone register. The selection was performed in several steps. The first step included all people who had a telephone connection. In the second step, it was determined how many surveys should be conducted within each language region (based on the Swiss census). Within each household, the respondent was also chosen randomly, that is, the person who had his/her birthday first or last during the calendar year. In addition to the language region, there were also maximal quotas for age, gender, education and marital status in order to avoid bias due to respondents' accessibility.
3. All questions had been pretested in order to ensure that they were understood in the way the authors had intended them to be.
4. This approach makes sense in the context of Switzerland with its highly developed system of direct democracy, where voters are frequently asked to express their views on similar questions at the polls. Direct democracy allows Swiss citizens to influence policy-making at almost every stage of decision-making through the right to propose new laws or the possibility to hinder new legislation by referendum.
5. The translation of the Swiss term 'Gymnasium' into English is problematic. 'Gymnasien' are upper secondary schools with a focus on academic education, leading up to the 'Matura' (baccalaureate), which qualifies for entrance into the university system.
6. In both questions the respondents could choose only one answer category. The alternative to invest 'equally

- in all sectors' was not included to avoid the danger that a large part of the respondents would have chosen this answer, which would not have been very informative for our purposes of contrasting different types of education. In addition, we think that having to make choices corresponds more closely to real political decisions.
7. In contrast to academic higher education (ISECD 5A) with low tuition costs, higher vocational/professional education (ISCED 5B) asks for a high share of private investment in Switzerland.
  8. Until 2002, teacher training was organized in some 150 decentralized education colleges at the upper secondary or tertiary levels. Since then, 18 new teacher-training colleges (*Pädagogische Hochschulen*) that enjoy the status of tertiary education institutions have replaced the old institutions. However, they do not possess the right to award doctoral degrees as do academic universities.
  9. We include dummy variables instead of a linear predictor in order to allow for a flexible functional form. We also tried the specification with a linear form. The results were not substantially different. Therefore, we kept the dummies, as this allows a numerical interpretation of the coefficients.
  10. However, political preferences might be endogenous, as it is plausible to expect that the same unobservable characteristics may affect both the political preferences and the dependent variable. If this is the case the coefficients should be interpreted carefully, as correlations and not causal effects. This applies for all models presented in this paper.
  11. Furthermore, in all four models we tested the inclusion of a control variable about each individual's general willingness to increase educational spending, which could also be related to, for example, partisan affiliation or income level. The exact question read: 'Assume you have to vote in a cantonal referendum on a proposition calling for a 10 percent increase of educational expenditures to improve the teacher/child ratio in elementary and secondary schools. If the vote were today, would you support the initiative/proposition, yes or no?' It should also be noted that the inclusion of the spending propensity variable is not a causal statement. Instead, it is supposed to take out the variation in the dependent variable that can be attributed to some kind of intrinsic motivation to increase spending in order to get a cleaner estimate of the effect of the other independent variables. As expected, the variable had a significant positive effect in model 5 and negative in all others. However, the other coefficient did not change much and therefore we chose not to show these specifications.
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