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The impact of upper-secondary voucher school attendance on student achievement. Swedish evidence using external and internal evaluations[☆]

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ABSTRACT

Sweden has a school voucher system with universal coverage and full acceptance of corporate providers. Using a value added approach, we find that students at upper-secondary voucher schools on average score 0.06 standard deviations lower on externally graded standardized tests in first year core courses. The negative impact is larger among lower achieving students (but not among immigrant students), the same students who are most prone to attend voucher schools. For high achieving students, the voucher school impact is around zero. Comparing internal and external evaluations of the exact same standardized tests, we find that voucher schools are 0.14 standard deviations more generous than municipal schools in their internal test grading. The greater leniency in test grading is more pronounced among students at academic than at vocational programs. The findings are consistent with voucher schools responding more strongly to differences in educational preferences than municipal schools.

1. Introduction

The analysis of potential costs and benefits of the private provision of publicly funded services in general and of education in particular has a long tradition in economics. Friedman (1962) famously argued in favor of a voucher school system fully open to private providers. On theoretical grounds Shleifer (1998) labelled the case for near-monopoly government provision of elementary and secondary education indefensible, and Hoxby (2003) has argued for voucher financing of private school providers. If families are well informed and there is no discrepancy between the private and public perceptions of school quality, the case for private provision is arguably strong. If these preconditions are not fulfilled, however, a provider can potentially offer education that is of low-quality from a policy maker's perspective, either by exploiting the informational disadvantage of families or by catering to private preferences despite this not being in the public interest.¹

The concerns regarding informational problems and a misalign-

ment between public and private interests are potentially important in education. From an informational viewpoint, separating a school's quality from the quality of its students is a non-trivial task even for skilled econometricians purely focusing on how schools contribute to student test scores (Angrist et al., 2015). Perhaps partly because of the difficulties in separating peer and school quality, peer concerns appear to be an important determinant of educational choice (Hastings et al., 2009; Burgess et al., 2015), despite being a questionable component of educational achievement (Angrist, 2014). Another, more straightforward, explanation of peer concerns is that peers are part on the private consumption value of education. This explanation highlights the potential conflict of interest between families and policy makers. Families seem to place widely different weights on various school characteristics, some of which are likely to be unrelated to their educational output (Jacob and Lefgren, 2007). There may therefore very well be demand for schools with low educational value added, provided that such schools instead offer families other perceived private benefits.²

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¹ There is a large literature discussing these issues. Despite his support for the private provision of education, several of the concerns regarding contracting difficulties raised by Shleifer (1998) apply to publicly funded education. The public and private goods aspect of education is one of several themes in Levin (2001) as well as in the recent contribution by Abrams (2016).

² Apart from peers and facilities, a convenient location is an obvious advantage that schools can offer. Additional evidence that the student composition is a central concern is provided by Rothstein (2006) and Mizala and Urquiola (2013). Cellini et al. (2010) find that house prices respond substantially to investments in school facilities despite having a small impact on test scores. More generally, housing values are positively related to academic achievement, but studies do typically not discriminate between school value added and student composition (Black and Machin, 2011). Barseghyan et al. (2014) model the welfare implications of school choice taking peer preferences as given while MacLeod and Urquiola (2015) present a model of school choice where peer preferences arise endogenously because of signaling concerns.

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Since the objectives of public and private providers are likely to differ, they are also likely to respond differently to the incentives given by the demand conditions.

How the potential conflict of interest between families and policy makers plays out is likely to depend on the institutional setting in which schools operate. In this paper, we provide an analysis of Swedish upper-secondary voucher schools (a.k.a. *free* or *independent* schools) using external and internal evaluations of the same standardized tests.³ Sweden is an interesting case to study since it in 1992 introduced school vouchers covering all students. There are few restrictions on who is allowed to own and manage voucher schools; corporate providers are for example fully accepted and providers are not required to have any prior experience in education. Entry is relatively free and approximately 25 percent of all Swedish upper-secondary students now attend voucher schools. Approximately 85 percent of these students study at for-profit schools, a majority of which are part of larger school corporations. The system in which these schools operate can best be described as one of trust based accountability: while standardized testing is mandatory, the grading of tests is local and locally set grades are the main selection mechanism to post-secondary education. No formal sanctions are tied to student outcomes.

Using a value added approach, augmented with detailed socio-economic and demographic student characteristics, we find that students at municipal upper-secondary schools outperform students at privately run voucher schools by approximately 0.06 standard deviations in first year core courses. The difference is larger among students who are academically relatively weak, also the group of students most prone to attend voucher schools. By comparing internal and external evaluations of the exact same standardized tests, we further find that voucher schools on average are 0.14 standard deviations more lenient in their test grading. This greater leniency in test grading is relatively uniform across different groups of students, but most pronounced among students with highly educated parents who study at programs preparing for further academic studies.

The asymmetries we find are consistent with voucher schools responding more strongly than municipal schools to differences in demand across groups. Prior evidence suggests that academically strong students and high socio-economic families have a relatively strong preference for higher achieving schools, while other considerations are relatively more important for other groups (Hastings et al., 2009; Burgess et al., 2015). Our findings are also in line with recent evidence from Louisiana finding negative effects of school vouchers enabling disadvantaged students at low-performing public schools to attend private schools (Abdulkadiroglu et al., forthcoming). Similar negative results of attending private schools using vouchers are reported by Figlio and Karbownik (2016). On the other hand, our findings are in contrast to results on charter schools school attendance that tend to find positive effects on achievement among less advantaged students, but negative among the more advantaged (e.g. Clark et al., 2015). More generally, the bulk of the evidence suggests that the performance difference between private and public providers of education is small on average (Rouse and Barrow, 2009; MacLeod and Urquiola, 2013; Epple et al., forthcoming), although some private providers certainly appear to produce large and consistent achievement gains (Abdulkadiroglu et al., 2011). In the UK, the first wave of academies – operating in relatively deprived areas where public schools appear to underperform – have had a non-trivial positive impact on student achievement (Eyles and Machin, 2015). However, it is an open

³ Neither the term *voucher school* nor *free school* is entirely correct. All schools are funded by voucher-type arrangements where funding follows the student, hence also public municipal schools could be called *voucher schools*. *Free school* is on the other hand a term originating from the less strict regulation applying to these schools. However, the current regulation does not substantially differ between private and public schools, hence making the term *free schools* obsolete. We therefore choose to refer to these entities as *voucher schools*.

question if further expansions of academies will be able to replicate these gains (Eyles et al., 2015).

Greater leniency in grading among Swedish upper-secondary voucher schools has previously been documented by Wikström and Wikström (2005). Rather than comparing leniency at the exact same tests, however, they relate the upper-secondary grade point average (GPA) to achievement on an SAT-equivalent test (Swe-SAT).⁴ Apart from this, most research on the Swedish voucher reform has analyzed the compulsory level of education, where the share of voucher school students is substantially lower than at the upper-secondary level. The main focus has further been on the aggregate impact of voucher school penetration at the municipal level rather than differences between providers (Böhlmark and Lindahl, 2015). Analyzing achievement differences between providers at the compulsory level is challenging since it is not possible to control for selection using prior achievement and since it is necessary to rely on teacher set grades or internally graded standardized tests. These caveats in mind, Böhlmark and Lindahl (2007) use a sibling fixed-effects approach to control for selection and find that the compulsory level voucher schools outperform municipal schools by about 0.05 standard deviations.

We start this paper by describing some important institutional features of the Swedish school system, with special attention paid to the voucher system. The empirical model and its limitations are discussed in Section 3 and details on the data are provided in Section 4. The results are presented in Section 5 and we summarize and discuss the results in Section 6.

2. The institutional setting

Upper-secondary education in Sweden follows nine years of compulsory education. While being voluntary, 99 percent of the Swedish youth enroll in some type of upper-secondary program. Approximately 15 percent of all students enter various preparatory programs that aim at preparing non-eligible students for the 18 different three-year vocational or academic programs that the remaining 85 percent enroll in. The students in the preparatory programs do not take standardized test and are not part of this study. In the remainder of this section, we provide an overview of upper-secondary schooling in Sweden, with a special focus on the voucher system that funds independent schools. We also discuss admission and choice to upper-secondary schools, and finally we present the system of standardized tests and its role in the Swedish system.

2.1. The voucher system

Subject to national regulation, Swedish local governments (municipalities) are in charge of providing and maintaining the quality of both compulsory and upper-secondary education. Schools are financed by the municipalities and could either be run by the municipality itself or by an independent private provider, what we here call a voucher school. Both voucher schools and municipal schools are funded in relation to its number of students. By law, municipalities are required to compensate voucher schools in the same way as they fund municipal schools. At the upper-secondary level, the compensation to voucher schools corresponds to the municipal costs for each respective program. In several municipalities the voucher – as well as the funding of municipal schools – is weighted by socio-economic criteria, but such systems differ substantially between municipalities.

The voucher system was introduced in Sweden in 1992 and

⁴ A problem when comparing the GPA with the Swe-SAT is that they capture different types of abilities and subject knowledge (Cliffordson, 2008). Other issues are that students self-select into taking the Swe-SAT, and that just two percent of the students attended upper-secondary voucher schools in the year (1997) that Wikström and Wikström (2005) study. An advantage is that the GPA captures achievement throughout upper-secondary school and not just on the subset of courses that is at our disposal.

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