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Higher education in Turkey: Subsidizing the rich or the poor?

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ABSTRACT

We investigate how the benefits of publicly financed higher education in Turkey are distributed among students with different socioeconomic backgrounds. We use a dataset from a nationally representative sample of university entrance exam takers together with data on government subsidies to public universities. We compare the characteristics of students who succeed in the exam to those who do not and those who enter public universities to those who go to private ones. Our econometric analyses based on a three-stage selection model reveal that students from wealthier and more educated families are more likely to be successful at university entrance. Unlike the findings in other countries, students who enroll in private universities come from higher income and more educated families. Among those who enter public universities, students from higher income and better educated families are more likely to go to universities that receive larger subsidies from the government.

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1. Introduction

In many countries, governments heavily subsidize higher education. There are two main economic arguments in favor of this policy. First, in the absence of government involvement, borrowing against future human capital is very limited and in particular, students from low income families are likely to find it difficult to afford college even when their private returns to higher education are greater than their costs. Second, social returns to higher education are likely to be higher than private returns and hence in a free market the level of higher education is likely to be less than the socially optimal amount. However, if government is subsidizing higher education of students from high income families who would have gone to college in the

absence of government subsidies, then these subsidies may not be justified with either of these arguments and may simply result in an income transfer from the poor to the rich.

In this paper, we empirically examine the characteristics of the beneficiaries of public expenditure on higher education using a nationally representative survey of university entrance exam applicants from Turkey, merged with data on government subsidies to public universities. We ask how the subsidy per student varies across students with different backgrounds and whether public and private university students are different in terms of family characteristics. We also compare applicants who are placed at a program to those who are not.

In Turkey, most university students attend public universities and public universities are heavily subsidized. Households with students in public universities receive in-kind benefits in the form of tuition free education. We assume that the amount of spending on a public university determines the quantity of resources that its students have access to, eventually leading to better outcomes in school life and in the labor market. Therefore, it is essential to

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know which types of families and students are supported by public funds.

There are only a few studies that empirically examine the characteristics of the beneficiaries of public expenditure on higher education. [Rozada and Menendez \(2002\)](#) analyze the socioeconomic characteristics of individuals attending and not attending university in the Buenos Aires metropolitan area and find that no socioeconomic variables are statistically significant in determining public university attendance. [Liu, Chou, and Liu \(2006\)](#) examine the characteristics of the beneficiaries of public expenditure on higher education in years 1996–1999 in Taiwan, where subsidies for higher education generally come in the form of government-financed low tuition public universities. [Liu et al. \(2006\)](#) advance the approach in [Rozada and Menendez \(2002\)](#) by using a two part model to estimate the conditional probabilities of entering a public university and entering one of the three types of public universities. They find that public university students tend to come from wealthier families compared to students of private universities, and that students attending the top five public universities come from wealthier families than those attending lower tier public universities which on average receive lower government subsidies than the top five.

In this paper we contribute to this small literature in several dimensions. First, we use data from a nationally representative survey of university entrance exam applicants from Turkey where the private higher education sector is not subject to price regulation. In Taiwan, where the only other national study is from, the ministry of education set uniform standards for tuition fees charged by private colleges until 1999 ([Taipei Times, 2000](#)). A cap on prices may adversely affect the quality of private institutions, and thereby reduce demand for these institutions. By contrast, in Turkey, there are high quality private universities that attract students with high socio-economic status.

Second, we observe in our data the amount of per student subsidy not only at a national or university level, but separately for universities and for schools within universities. Previous studies estimate per student subsidy very roughly and only at the national level (by dividing the total higher education expenses by the total number of students) or by the type of the higher education institution (universities versus technological institutes, as in [Antoninis and Tsakloglou \(2001\)](#)). Such an approach, by assigning an average amount to all students, evens out the variation across universities and schools when in fact subsidies received by students at the same university may be very different.

Third, our method allows us to examine the determinants of the students' decisions at each stage separately. We estimate a three-stage Heckman model where the first stage is success in the exam, the second stage is public versus private university choice, and the third stage is the allocation of students to public universities. We supplement our findings with a three-part model which can be used to derive the marginal effects of socio-economic characteristics on the educational subsidy received from the government by an average exam taker in Turkey. Since we use the implicit per student subsidy in a

program–university pair as our measure, our categorization of public universities is more precise than in [Liu et al. \(2006\)](#) who divide public universities into three groups.

We find that students entering public universities come from lower income families than students entering private universities. This is a strikingly contrary result to [Liu et al. \(2006\)](#) and can be attributed to the lack of price controls in the private higher education sector in Turkey. This result has important policy implications. A private higher education sector that is not subject to price controls can provide a high quality product that attracts wealthier students in a country where public provision has traditionally been the norm. Sorting of high income students into private universities and low income students into public universities results in a higher education system where government subsidizes higher education of low income students who may not have gone to college due to borrowing constraints.

Among those entering public universities, students who come from higher income and better educated families tend to enter public universities that receive higher government subsidies. There is tough competition to enter the better funded public universities. Students spend substantial amounts on private tutoring in order to get into the better programs/universities. [Tansel and Bircan \(2006\)](#) report that private tutoring centers are expensive and usually beyond the reach of a household with average income. In our survey data we find that total private tutoring expenditures spent during three years of high school as a fraction of yearly income is about 7 percent. We also find that students from wealthier families spend more on private tutoring and are also able to get into universities that receive higher government subsidies.

The plan of our paper is as follows: in the next section, we discuss the related literature. Section 3 presents the setting for the university entrance exam and the government financed higher education system in Turkey. Section 4, presents the data and the descriptive statistics. Section 5 provides the econometric framework. In Section 6, we present and discuss our results. In Section 7, we discuss the policy implications of our analysis; Section 8 concludes.

2. Background

There is a sizable literature on the public finance of higher education and its distributional consequences. It has been argued that subsidies to higher education have a regressive distributional effect. Given that wealthier families enroll more children in higher education, there may be an unwanted “perverse” distributional impact of these subsidies to higher education ([Friedman, 1962](#), p. 105).

Public finance of education can be modeled as a publicly provided private good, financed by a proportional income tax (see, for instance, the public economics textbook by [Atkinson and Stiglitz \(1980\)](#)). There are implications of such a model on both the resources devoted to education and on income redistribution implicit in the financing scheme. In such a model, if income distribution is skewed so that the mean income is greater than the median income, if there is proportional taxation and if collective choice on whether education should be financed publicly

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