



Corruption and education in developing countries: The role of public vs. private funding of higher education

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ABSTRACT

Corruption reduces the incentives to invest. This is also true for investments in human capital. The paper explains how enrollment in publicly funded higher education institutions affects years of schooling at different corruption levels. Using data from 88 developing countries, we first confirm that corruption negatively correlates with expected years of schooling. Second, we identify a joint effect of corruption and the type of higher education funding in a country: in low-corruption countries, the fraction of public higher education enrollment increases expected years of schooling, while it decreases in high-corruption countries.

1. Introduction

Education is one of the most critical factors for innovation and economic growth (Barro, 2001; Hanushek and Kimko, 2000), as well as for business and society. Governments intervene in education markets in many countries and provide public funding to their educational systems (Hanushek, 1986; Trostel, 2002). The involvement of public entities or government transfers from one party to another may create the risk of misallocating resources (Acemoglu and Verdier, 2000; Shleifer, 1998). Corruption, in turn, may destroy individual incentives to invest in human capital (Heyneman et al., 2008).

India could serve as an example of the crucial role of public and private education. The Indian public education system has been criticized for low quality due to corruption and high teacher absenteeism (Kremer et al., 2005). Since parents and firms see education as a major growth factor, they demand high quality education that they expect private education institutions to provide. As a result, the number of students at private education institutions is growing rapidly compared to enrollment at public education institutions (Economist, 2015).

This paper addresses two questions in the context of developing countries: First, we examine how corruption affects years of schooling. Second, we ask how funding of higher education moderates this relation. We argue that corruption in a country affects the expected years of schooling negatively, since corruption in a society decreases the expected benefits of education without decreasing the costs. The effect, however, correlates with the importance of public institutions of higher education in a country: a higher fraction of students enrolled in public higher education goes along with higher years of schooling in low-corruption countries, but with lower years of schooling in high-

corruption countries.

The empirical test of these predictions is based on 88 developing countries from 2005 to 2012. These countries have mainly been neglected in the literature (McCourt, 2008)—even if education financing and human capital formation are particularly important. The empirical results support the theoretical predictions, even after conducting several robustness checks. The optimal strategy for increasing human capital formation in a country depends on the level of corruption. In low-corruption countries, it would be beneficial to increase the number of students at public higher education institutions, while the opposite is true for high-corruption countries. This is especially interesting in terms of deriving policy implications, since increasing or reducing the enrollment in public higher education institutions seems just as feasible—if not more so—as fighting corruption.

Surprisingly, the correlation between corruption and educational outcomes has gained little attention in cross-country analyses (exceptions are Dridi, 2014; Gupta et al., 2001; Huang, 2008; Rajkumar and Swaroop, 2008). While the aforementioned studies do not distinguish between developed and developing countries, limited human capital is a severe problem particularly for developing countries. Qualifications have become more important and the number of low-skilled workplaces has diminished in many parts of the world, so it is even more surprising that years of schooling, including higher education—a reliable indicator for the human capital of a country (Barro, 2001; Woessmann, 2003)—has been largely neglected. Finally, it is even more surprising that literature on corruption has neglected the role of funding higher education, particularly the interplay between financing and corruption for educational outcomes.

This study contributes to the literature in several ways. First, it

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offers a conceptual bridge between the standard human capital theory from personnel economics, which trades off the costs and benefits of an additional year of education at an individual level (Becker, 1962), and the established literature on corruption at the country level (Delavallade, 2006; Mauro, 1998). This paper develops an argument in a setting where higher education institutions are publicly and/or privately financed.

Second, the paper adds to the extensive literature on corruption. Several issues that occur in economies have been analyzed, such as the effect of corruption on foreign direct investments (Bellos and Subasat, 2012), budget consolidation (Liu and Mikesell, 2014), human development (Qizilbash, 2001), migration (Poprawe, 2015), and the shadow economy (Dreher and Schneider, 2010).¹ Although, some papers have already examined corruption in education, these either focus on single countries (Reinikka and Svensson, 2005; Theodorescu and Andrei, 2009) or rather present conceptual analyses and overviews (Heyneman, 2004; Osipian, 2007; Osipian, 2008; Rumyantseva, 2005; Sabic-El-Rayess and Mansur, 2016; Tanaka, 2001; Waite and Allen, 2003). Quantitative comparative empirical studies dealing with corruption and educational outcomes at the country level are rare (notable exceptions are Dridi, 2014; Gupta et al., 2001; Huang, 2008; Rajkumar and Swaroop, 2008) and mainly missing for developing countries.

Third, the study contributes to the discussion of the role of public and private education (e.g., Cremer et al., 2010; Welch, 2007) and investigates the interaction between corruption and the public sector (Hopkin and Rodriguez-Pose, 2007), focusing on public enrollment of students in higher education institutions compared to private. Although Rajkumar and Swaroop (2008) and Suryadarma (2012) show that the effect of public spending on educational outcomes depends on the institutional quality, neither study considers higher education nor the role of public and private institutions in a comparative framework.

Finally, the paper contributes to the discussion on fighting corruption (Mungiu-Pippidi, 2006; Rose-Ackerman, 1997; Stapenhurst and Langseth, 1997; Yang, 2009). Recently, Otáhal (2014) argued that private ownership “solves the economic problem of corruption” (Otáhal, 2014: 399). Our empirical results are consistent with this prediction: the relation between enrollment in private higher education and years of schooling is positive only in high-corruption countries.

The paper proceeds as follows: Section 2 presents the theoretical background and derives expectations on the relation between corruption, years of schooling, and public enrollment in higher education institutions. Section 3 describes the data and shows descriptive statistics. Section 4 introduces the methodological approach and shows the empirical results and robustness checks. Section 5 discusses policy implications and limitations of the study.

2. Theoretical background and hypotheses

The theoretical argument of this paper combines two approaches: On the one hand, it draws on basic considerations from the human capital theory (Becker, 1962). On the other hand, it relies on the central findings on corruption and government expenditure from public administration theory (Mauro, 1998; Montinola and Jackman, 2002).

2.1. Corruption and education

The most prominent theory explaining educational differences at an individual level is the human capital theory. Becker (1962) interprets education as an investment and the gained knowledge as the human capital of an individual. As in every investment situation, the trade-off between costs and benefits determines the optimal level of investment—or, in this framework, the optimal number of years of

schooling.

We develop a human capital-based framework at the country level to analyze the influence of corruption on years of schooling based on two assumptions: First, Treisman (2000: 399) defines corruption as “the misuse of public office for private gain”.² Since neither students nor firms are able to observe the degree of corruption objectively, the paper relies on how corrupt the public perceives the society they are living in to be (including universities³ and the labor market). Second, we assume that students choose the optimal number of years of schooling only based on the costs and benefits of education for a given level of corruption in a country.

At a country level, institutional and economic conditions vary and influence the costs and benefits of an individual’s investment in human capital. Both affect the number of years of schooling. If the direct costs of education for individuals are low—for example, through higher public expenditure on education (Heinesen and Graversen, 2005), financial support provided by the state (Dynarski, 2003; Schultz, 2004), or good infrastructure in urban regions (Ulubaşoğlu and Cardak, 2007)—then, years of schooling are greater. If the direct costs of education for individuals increase—for example, through higher tuitions and fees (Riphahn, 2012; Coelli, 2009)—then, years of schooling decrease. Opportunity costs reduce years of schooling in the same way. For example, if child labor is a genuine problem in a country (Psacharopoulos, 1997) or the unemployment rate is low (Clark, 2011), then opportunity costs are high, and an additional year of schooling becomes less attractive.

Assuming that the costs of education in a country are given and do not depend on the perceived corruption in a society, the benefits of education drive the years of schooling. The benefits of education probably decrease with higher corruption, since perceived corruption increases the uncertainty of success in the labor market after graduating. Getting a job, high wages, or both may not depend only on qualifications (e.g., years of schooling) but also on personal relations (Heyneman, 2004: 638; Stapenhurst and Langseth, 1997: 315). Hence, in the labor market of a country with high corruption levels, the success of graduates can be easily manipulated. If a greater number of years of schooling does not increase the probability of success in the labor market reliably, the expected returns on education decrease along with the incentive to invest in human capital. Higher levels of corruption decrease students’ effort and years of schooling in a country. Briefly, corruption negatively affects the benefits of education and proposes the expectation that higher levels of corruption in countries go along with fewer years of schooling.

2.2. The role of public enrollment in higher education

Education—and, mostly, higher education—is funded differently across countries (Liefner, 2003). In some countries, the majority of students study at private higher education institutions; in other countries, all students study at publicly funded institutions. While primary and secondary schooling are usually compulsory, higher education is voluntary in all countries. The effect of attending higher education institutions on years of schooling can be expected to be remarkable.

The theoretical discussion draws on the effect of the percentage of students enrolled in public institutions on years of schooling. This effect is hypothesized to vary across high- and low-corruption countries, which requires inspecting the costs and benefits of higher education at private and public institutions for low- and high-corruption countries separately. Two assumptions are crucial: First, tuition and fees at public institutions are lower than they are at private institutions. For example,

² For an extensive discussion on the definition of corruption, see Shleifer and Vishny (1993), Svensson (2005), or Treisman (2000).

³ Teixeira and Rocha (2010: 693) state that students from countries with higher perceived corruption show higher average incidence rates for academic dishonesty.

¹ For excellent surveys of the consequences of corruption, see Lambsdorff (2006), Mauro (1998), or Rose-Ackerman (1997).

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