

The Equilibrium Effects of Informed School Choice

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Abstract

This paper studies the effects of a policy designed to generate a more informed consumer demand in the context of primary education markets. We develop and test a specific information intervention that targets poor families of public Pre-K students entering the elementary school system in Chile. Using a randomized control trial, we find that the intervention shifts parents school choice decisions towards schools with higher test scores, higher prices and further distances from their home. Four years later, we find that student achievement and school satisfaction were higher among treated families. To quantitatively gauge how average treatment effects might vary in the context of a scaled up version of this policy, we embed the RCT within a structural model of school choice and competition where price and quality are chosen endogenously but schools face capacity constraints. We find that while capacity constraints play an important role mitigating the policy effect on impact, the supply-side responses to quality contribute to a higher average treatment effect than that found in the RCT context. This result is especially true for the poorest students that benefit the most from an increase in supply of quality in their local education markets.

JEL Codes: L1, L38, I2, O1 Keywords: School Choice, Informed Consumers, Randomized Control Trial, Report Cards

Extended Abstract

In markets for educational services, quality can be difficult to observe and families from social contexts with less experience with education may be particularly disadvantaged in this respect. In addition, poorer families may have inaccurate information on the returns to many profitable investments, including in human capital. This combination can lead families in more vulnerable context to under invest in human capital in general and also to spend less time and energy searching and acquiring information about what schools to choose for their children. In the aggregate, lower interest in school quality due to a lack of information and the systematic under investment in search can have lower the equilibrium provision of quality and price.

These concepts are supported by a growing body of empirical evidence that suggests information and marketing interventions in education settings can shift individual behavior although specific effects depend on context, implementation and design details(Lavecchia, Liu, and Oreopoulos, 2016). While a consensus is developing that these interventions do change behavior, evidence regarding the policy effects of such interventions implemented at scale is scarce. This is unsurprising given that shifting behavior of many individuals is likely to have general equilibrium effects difficult to take into account in randomized controlled trials. One exception is recent work by (Andrabi, Das, and Khwaja, 2017) that has shown that in the context of Pakistan, providing school report cards in village markets lead to increased academic achievement suggesting information can lead to changes in educational outcomes in the aggregate. While this evidence is promising, the relevance of context and policy design can make it difficult to take these experiences and extrapolate specific lessons to make policy recommendations beyond a notion of proof of concept.

In this paper we explore the quantitative implications of a policy based on information provision in the context of elementary schools in Chile. We develop a scalable intervention that is policy relevant and evaluate the equilibrium effects of this policy to generate quantitative, policy relevant recommendations in a setting where randomized control trials at scale are not feasible. To do this, we integrate evidence on policy effectiveness from an randomized control trial with a model of school choice and school competition to evaluate how the policy effects vary when equilibrium effects are taken into account.

We use a small scale randomized control trial to evaluate the impact of a specific intervention on individual household school choice decisions and later academic outcomes in the context of Chile. The intervention adapts ideas from previous work in other contexts and the design is chosen so that it is policy relevant and scalable. The results from the randomized control trial show that household school choice decisions shift towards schools with higher test scores and prices. Four years later, the treated group had higher test scores on average, suggesting the intervention lead to increased academic achievement.

We quantify the way the policy changes how families trade off school characteristics such as quality, distance and price through the lens of an empirical model of school choice that explicitly incorporates the results of the randomized control trial. Using the estimated empirical model of school choice, we explore how average policy effects change when implementation is done at the national scale taking into account capacity constraints, heterogeneity in market structure. We find that when capacity constraints are taken into account, the average effect of the policy is still positive but reduced by fifty percent as increased demand for schools for higher quality in disadvantaged neighborhoods crowds itself out.

To explicitly evaluate the potential for equilibrium supply side effects we estimate a static model of school competition among current providers and evaluate the effects that changing demand has on school incentives and the equilibrium distribution of price and quality induced by the new policy. We find that the increase in quality provided by schools in the new equilibrium more than compensates for the original lack of capacity at higher quality schools. Effects of the policy are found to be higher than the positive average treatment effects found in the small scale RCT under different assumptions regarding schools objective function and estimates of cost structure.

Taken together these results provide a guide to policy recommendations in the context of Chile. It is found that incorporating both capacity constraints and the endogenous choice of quality and price in the analysis explicitly are crucial components to make specific quantitative recommendations policy recommendations.

The paper provides evidence on the role of policy relevant information interventions in education markets. The paper also presents a contribution by building on rigorous evidence from a small scale randomized control trial towards a quantitative policy recommendation that considers the main forces at play when equilibrium considerations are added.

References

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