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Is Education Consumption or Investment? Implications for School Market Design –
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Is Education Consumption or Investment?
Implications for School Market Design

By Miguel URQUIOLA[*]

1.   One of the key contributions of economics is to show that, under certain conditions, free markets achieve optimality. For example, competition can facilitate the growth of firms that are relatively productive, and the demise of those that are unproductive. Friedman (1955) extended this logic—developed by and large for consumer goods—to education. He argued that measures like distributing vouchers, allowing private school entry, and expanding parental choice would improve educational systems' performance. Friedman's argument was compelling and influential not only because it extended standard results, but because the scenario he envisioned could be held against the standard of observed public sector performance. Namely, in many countries it is plain to see that the public sector can be dysfunctional, e.g., one can see mixes of: unions that reject experimentation and accountability, high rates of teacher absenteeism, sale of offices, frequent strikes, etc. As a result, in the decades following Friedman's advocacy, many countries implemented small or large scale voucher systems (e.g., Chile, the U.S., Sweden), or simply allowed largely-unsubsidized private sectors to grow such that they account for large parts of the market (e.g., Pakistan, India, Peru).

2.   From an analytical perspective, one key development in the past decades has been the appearance of rigorous empirical evidence on the impact of competition and parental choice. Given the expectation set by Friedman (1955), the emerging record is distinctly mixed. For example, a few small scale voucher experiments yield evidence of highly positive and also highly negative effects on test scores, and many more suggest modest effects.[1] Large scale voucher programs similarly yield mixed assessments. For instance, it is fairly clear that such schemes can produce substantial sorting of students, but less obvious that they generate large improvements in school productivity.[2] Similar findings emerge from a large body of research considering the impact of parental choice among public schools: sometimes increased choice helps households' children, sometimes it can

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[1] See Bettinger et al. (2017), Abdulkadiroglu et al. (2018), Muralidharan and Sundararaman (2015), and reviews in Urquiola (2016) and Epple et al. (2017).

[2] For work on Chile, for example, see Hsieh and Urquiola (2006), Neilson (2017), Feigenberg et al. (2014).

even hurt them.[3] Beuermann and Jackson (2018) summarize this evidence saying: "The lack of robust achievement effects of attending schools that parents prefer is something of a puzzle."

3. In recent work, MacLeod and Urquiola (2018) provide a conceptual/theoretical explanation for this puzzle.[4] In particular, the paper points out that the one way of summarizing the empirical literature on the effects of school choice is to say that

1. There is clear evidence that households prefer schools that have higher levels of absolute achievement.

2. There is much less evidence that households systematically prefer schools with higher value added in the production of skill (i.e., that this preference is strong enough to be the primary driver of school choice).

4. Much research is consistent with these findings (as reviewed in the paper) and indeed several proposals for improving the impact of competition in education markets surround:

*   Making schools' and universities' value added more transparent to households, such that value added may become the key driver of school choice, and

These points have been made empirically and theoretically, and have led to much investment including in the calculation and dissemination of information on value added.[5]

5. However, MacLeod and Urquiola's (2018) framework shows that in fact it can be *rational* for households to choose schools based on absolute achievement rather than value added. This raises that there may be limits to how effectively the above interventions may ultimately affect market competition. It also provides insight into why at time governments (e.g. Chile, North Carolina) seem to be intent on distributing information on absolute achievement—to some extent that may be what parents want.[6]

6. To be precise, consider individual i who attends school s in period 0 and obtains outcome w_{1is} in period 1. This outcome could be any post-schooling result, such as college placement after high school, starting wage after college, life-time earnings, marriage quality, etc. In that sense the framework is relevant to schools or universities, although some of the motivation given below is more natural for universities, since it refers mainly to labor markets.

7. Suppose outcomes are a function of skill, θ:

$$w_{1is} = f(\theta_{1is})$$

and that student i enters school s with skill θ_{0is} and leaves with skill θ_{1is}. If students prefer schools with higher value added, they choose a school s over s' if $\theta_{1is} - \theta_{0is} > \theta_{1is'} - \theta_{0is'}$. If

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[3] These papers are mainly based on regression discontinuity rather than experimental designs. See for instance Hoekstra (2009), Saavedra (2009), Jackson (2010), Pop-Eleches and Urquiola (2013), and Abdulkadiroglu et al. (2014).

[4] This paper is forthcoming in the Annual Review of Economics. See also MacLeod and Urquiola (2013), MacLeod and Urquiola (2015), and MacLeod et al. (2017) for related development.

[5] See for instance Chetty et al. (2014a, 2014b), Imberman and Lovenheim (2016), Chabrier et al. (2016), and Angrist et al. (2017).

[6] See for instance Hastings and Weinstein (2008).

they prefer schools with high absolute achievement, they choose a school s over s' if w_{lis} $> w_{lis'}$. If the latter is true, then the implication that competition will reward schools with higher value added, or that it will generate pressure for all schools to improve their value added, is no longer immediate. For example, competition could lead schools to focus on selecting talented or wealthy students to ensure good average outcomes, rather than focusing on improving their value added.

8.   Why would households choose schools based on absolute achievement rather than value added? MacLeod and Urquiola (2018) show this follows from three ingredients labor and education economists have highlighted since Friedman (1955):

1.   First, in large part education is an *investment* into human capital (Becker, 1964). Hence, households use schools to purchase an asset rather than a consumption good, and this asset is only assigned a value in subsequent arenas like labor markets. As a result, a student's school choice depends on her beliefs regarding how agents like employers will value her skills.

2.   Second, labor markets can feature wage *premia*: individuals of a given skill level may receive higher wages if they match to more productive firms (e.g., Card et al., 2018). Hence, schools can provide two commodities that affect the value of human capital: skills and job match quality.

3.   Third, *distance*, broadly construed, influences school choice and the placements schools produce. Households often prefer schools close to home (e.g., Abdulkadiroglu et al., 2017), and firms may opt to recruit at schools that are nearby or will yield many promising candidates (e.g., Weinstein, 2017). Further, firms' concern for distance may reflect household preferences; for example, if high ability students prefer a certain school, firms may in turn prefer to recruit there. While MacLeod and Urquiola (2018) focus on labor markets, similar considerations arise in other venues in which human capital is valued, like marriage markets or college admissions.

9.   To elaborate, the first of these three ingredients is explicit in expression (1), i.e., one reason people go to school is to render themselves more desirable in subsequent markets. To operationalize the second and the third ingredient, MacLeod and Urquiola (2018) assume that firms are of different productivities, and that they only recruit at some schools. This is also consistent with recent empirical work. Firms tend to focus recruitment at some schools, and as has been pointed out in economic and sociological work, school networks are one way in which people find jobs. For another illustration, Hoxby and Avery (2013) show that colleges do not spend equal amounts of time trying to recruit students at all high schools—in fact most focus their energy on only a few that are known to produce a large enough number of the type of students they wish for.

10.   MacLeod and Urquiola (2018) show that when these three ingredients are present, households may rationally choose a high absolute achievement school over a high value added school. For example, they may favor a school that selects the smart students over one that teaches well, because they know that good firms will tend to recruit at the fancier school. In other words, the intuition is twofold. First, households realize that schools provide two services—value added in terms of skills, and pathways to outcomes such as jobs—and they are willing to tradeoff performance in one for the other. Second, firms wish to hire highly skilled workers, but they do not care where that skill originates, i.e., whether it comes from innate ability or from school value added. Judge Antonin Scalia, an

American Supreme Court Justice, transmitted this intuition when he was asked where he usually hired his clerks. He answered:

> *By and large, I'm going to be picking from the law schools that basically are the hardest to get into. They admit the best and the brightest, and they may not teach very well, but you can't make a sow's ear out of a silk purse. If they come in the best and the brightest, they're probably going to leave the best and the brightest, OK?*

11.   In short, the combination of the three highlighted ingredients can mean that school or university markets can get "stuck" in scenarios in which institutions with lower value added experience greater demand. MacLeod and Urquiola (2018) note that such dynamics help explain why the benefits of incumbency are so marked in education: Once a firm/school establishes itself as the destination for certain types of recruiters, students will have incentives to use its services, even if its competitors supply higher value added.

12.   To summarize, economists have long realized that education can be seen as investment. When one sees it in this way and takes into account that there are frictions in labor markets, one gets two results. First, further reason to believe that competition alone is unlikely to be a silver bullet. Second, indication that while it makes sense for governments, regulators, and academics to calculate and disseminate information on school productivity, that alone may also be insufficient to optimize school market performance.

13.   What else can policy makers do? In MacLeod and Urquiola's (2018) model one lever is to ensure that schools can freely entry the market. Another is to limit selection of students into schools. This is being explored in different countries via various mechanisms. Chile, for example, is introducing centralized choice schemes, and the U.S. requires that charter schools use admissions lotteries. Such measures would indeed limit some of the mechanisms highlighted above. But at the same, time they may come at the cost of other adverse effects on educational performance.

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