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The costs and benefits of enrolling in an academically matched college

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ABSTRACT

In response to increased efforts to raise college completion rates through improved academic match between students and their colleges, we examine the costs and benefits to students of following such advice as well as the impact on postsecondary institutions. We analyze data from the National Postsecondary Student Aid Study, the College Board, the National Student Clearinghouse, and the Integrated Postsecondary Education Data System to estimate the impact of improved academic match on students' predicted net price and bachelor's completion probabilities. The results indicate that undermatching low-income students across the distribution of academic ability would experience a substantial boost in bachelor's degree completion probability – 13.5% points, on average – if they attended a college that better matched their academic credentials. Given this average effect and the number of undermatched low-income students who are minimally "treated" under our simulation, we predict that an additional 3500 low-income students per cohort would complete a bachelor's degree. We find that moving all undermatched low-income students into "safety" colleges would not overly burden this set of institutions, which, on average, would only need to increase the size of first-year cohorts by less than 1%. Moreover, such colleges would experience no change in average SAT scores and overall graduation rates. One estimate of the financial impact on colleges is substantial (i.e., on average, $6.5 M–7.5 M annually per cohort per institution that has a simulated net gain in enrollment) if institutions cover full tuition and fees for these additional low-income students.

1. Introduction

Empirical research on the returns to postsecondary education provides considerable consensus that college confers numerous advantages for both individuals and society. Not only do individuals with a college degree earn higher wages than their peers without a college degree, they also lead healthier lifestyles, experience greater job satisfaction, and engage in more civic activity (Baum, Ma, & Payea, 2013; Oreopoulos & Petronijevi, 2013; Oreopoulos & Salvanes, 2011).

Although arguments in opposition to postsecondary education are less common than those in favor, there is always a lively debate as to whether higher education is a good investment for everyone, particularly for more academically modest, lower-income students who would, in many instances, need to take out loans to finance their postsecondary endeavors. There are concerns that many of these students will not be able to recoup the money they spend on higher education, particularly if they do not successfully complete their degree programs. These concerns are not without merit; over the past decade (2004–05 to 2014–15), published tuition and fees faced by the typical student increased by nearly 25% in

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inflation-adjusted dollars at private nonprofit four-year institutions. The corresponding increase was greater than 40% at public four-year institutions (Baum & Ma, 2014a).[1] These increases are not a blip in the college pricing trend; they were preceded by two decades of steadily rising prices. In fact, between the 1984–85 and 2014–15 academic years, tuition and fees more than tripled at the nation's public four-year institutions and more than doubled at private nonprofit four-year institutions, even after adjusting for the effects of inflation.[2]

Because institutional "sticker prices" are featured prominently in major sources of college information, such as guidebooks and websites, it is tempting to latch onto these numbers and assume that they represent what the typical student pays. This assumption is unfounded. A conservative estimate is that only one-third of full-time college students pay the full sticker price (Scott-Clayton, 2011). Between 2003–04 and 2013–14, grant aid from all sources nearly doubled, increasing from $64.5 billion to $122.7 billion (Baum & Ma, 2014b).[3] As a result of this increase in grant aid, the "net price" that students actually pay for tuition and fees, after accounting for grant aid from all sources as well as tax credits and deductions, has actually fallen by $1810 over the past decade at private nonprofit four-year institutions and has increased by just $740 at public four-year institutions.[4] While these averages certainly mask variation across different students and institutions, the long run trends are a useful means of anchoring the discussion with students and families.

Students and parents alike overestimate the cost of college tuition, and parents from relatively low-income backgrounds are more prone to estimate these costs inaccurately (Grodsky & Jones, 2007; Horn, Chen, & Chapman, 2003). This tendency to overestimate college tuition is compounded by a lack of awareness and understanding about financial aid and the steps required (e.g., FAFSA completion) to receive it (Kantrowitz, 2009). These factors may create a scenario in which sticker prices play a prohibitive role in the college choice process for families whose net price may, in fact, be manageable. If we were able to successfully convey more accurate information about net price to low-income families, would that solve the problem? The answer depends on how those families weigh the costs against the benefits of choosing specific colleges.

Once a student decides to enroll at a postsecondary institution, whether or not she is better off for having attending college likely depends on the attributes of the college in which she enrolls. College attributes are not only important for the reasons related to tuition and debt levels referenced above, but are also related to students' chances of completing their degree program and enjoying success in the labor market. Numerous studies over the past decade have presented compelling research evidence on the importance of attending a more academically selective college, particularly a college that is well-aligned to a student's own academic background. College selectivity and academic match are linked to better postsecondary outcomes like persistence, degree completion, and labor market experiences.[5] Many of these relationships have been established causally.[6]

When the above factors are combined, the message heard by students and their families potentially becomes more muddled and complicated than ever. On the one hand, students are advised to attend more selective colleges that match their own academic credentials and are told that they are more likely to complete a degree in a timely fashion and enjoy better labor market outcomes as a result. But these more selective colleges typically carry larger sticker prices (and potentially larger net prices, too) than the institutions these students would otherwise attend. Thus, following such advice comes with additional stress and uncertainty about which college to attend, how to pay for it, and how to manage eventual debt loads. In the first half of this paper, we clarify and quantify the tradeoff students face between chances of degree completion and net price. In particular, we focus on how these tradeoffs vary with family income and college selectivity. The results indicate that low-income students throughout the distribution of academic ability have the most to gain (in terms of on-time completion) at the lowest additional expense from enrolling in an academically matched college, but that the predicted increases in completion probability per additional dollar spent are dramatic even for high-income students who would likely pay the full cost of attendance.

In the second half of this paper, we examine important issues on the supply side of the higher education market. The research literature on postsecondary academic match has also generated some well-founded concern about whether colleges and universities have the capacity and resources to accommodate more students if messaging around match successfully changes student application and enrollment decisions. Chingos (2012) demonstrates that, if institutional capacity is in fact fixed, bachelor's degree attainment rates would increase only slightly from improving the academic match between students and colleges. Similarly, Bastedo and Jaquette (2011) suggest that any attempt at improving match would amount to a game of musical chairs where some overmatched students would move to less selective colleges as undermatched students would move to more selective colleges, with no real gain in overall college completion rates. Like Chingos, this argument relies on an assumption of fixed capacity at colleges and universities and an implied zero sum game.

To examine whether fixed college capacity is likely to be a substantial constraint, we simulate the number of low-income students that would be induced into and out of various types of postsecondary institutions under a push toward improved academic match without assuming fixed college capacity, and then put those figures in the context of current enrollment at these institutions. The results indicate that modest improvements in academic match for low-income

[1] Calculated from Table 2A, page 17 (Baum & Ma, 2014a).
[2] See Fig. 6 on page 16 (Baum & Ma, 2014a).
[3] See Fig. 4 on page 15 (Baum & Ma, 2014b).
[4] See Figs. 12 and 13 (pages 23 and 24) (Baum & Ma, 2014a).

[5] See Black & Smith (2006) Bowen, Chingos, & McPherson (2009), Brewer, Eide, & Ehrenberg (1999), Dale & Krueger (2002, 2011), Dillon & Smith (2013), Hoekstra (2009), Hoxby (1998), Hoxby & Turner (2013), Long (2008), Radford (2013), Roderick, Nagaoka, Coca & Moeller (2008), and Smith, Pender, & Howell (2013).
[6] See Cohodes & Goodman, 2014, Goodman, Hurwitz, & Smith (2014), Hoekstra (2009), and Kurlaender & Grodsky (2013).