

Supply, Demand, and the Taxation of Knowledge

A Response to Michael Simkovic, *The Knowledge Tax*, 82 U Chi L Rev 1981 (2015).

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INTRODUCTION

In *The Knowledge Tax*, Professor Michael Simkovic tackles the question of why rates of return on higher education are higher than rates of return on other types of investments, such as equity and real estate.¹ Dissatisfied with existing explanations advanced by labor economists, the additional account that he offers is distortionary taxation: specifically, we tax higher education less favorably than other investments, thereby driving down demand for higher education relative to alternatives.² This creates an under-supply of labor and buttresses education's rate of return.

The Knowledge Tax characterizes its contributions as follows: First, it identifies a new, tax-based explanation for why pretax rates of return on higher education are higher than rates of return on other investments.³ Second, by conceptualizing higher education as a discretionary investment for which other investments may be substitutes, the article subverts the traditional labor-capital distinction of optimal tax theory, calling into question the usual wisdom that labor should be taxed more heavily than capital. The optimal tax literature generally suggests that the fact that capital is more mobile than labor means that taxing capital creates greater distortions.⁴ To the contrary, *The Knowledge Tax* argues that if education is also a discretionary investment for which there are substitutes and whose returns are taxed as labor

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¹ See generally Michael Simkovic, *The Knowledge Tax*, 82 U Chi L Rev 1981 (2015).

² Id at 1984–85.

³ Id at 1981, 2035.

⁴ See id at 2007–10 (describing the traditional optimal tax conclusion that capital should be taxed less heavily than labor).

income, then the traditional optimal tax conclusion that labor should be taxed more heavily becomes problematic.⁵

The effect of distortionary tax policy on human capital investment is a topic that has been investigated by economists since Professor Michael Boskin modeled the impact of taxes on the choice between human and physical capital investments in 1975.⁶ Thus, the main contribution of *The Knowledge Tax* is not so much its insights regarding the impact of distortionary taxation on human as opposed to traditional capital investment but rather the connection that it draws between distortionary taxation and high rates of return on higher education, coupled with its doctrinal discussion of the relevant tax rules and associated policy recommendations.⁷ My sense, though, is that once we move from existing theoretical models to policy prescriptions, then empirics and nuances become important. And here *The Knowledge Tax* could do more to answer some of the critical questions that arise. For example, is higher education really taxed unfavorably as compared

⁵ Simkovic, 82 U Chi L Rev at 2009–10 (cited in note 1).

⁶ See, for example, Michael J. Boskin, *Notes on the Tax Treatment of Human Capital* *4–10 (NBER Working Paper Series, Nov 1975), archived at <http://perma.cc/E7SK-MRD3> (modeling the choice between investing in human or in physical capital, exploring tax incidence issues and the differential tax treatment of human and physical capital, and noting that income tax reduces both the return and the cost of human capital investment because the principal input into human capital investment is untaxed forgone wages). Other economists have followed suit. See, for example, Marc Nerlove, et al, *Comprehensive Income Taxation, Investments in Human and Physical Capital, and Productivity*, 50 J Pub Econ 397, 398–99, 406 (1993) (discussing how, under certain assumptions, a comprehensive income tax that applies to both labor and capital income discriminates against human capital investments relative to physical capital investments); Philip A. Trostel, *The Effect of Taxation on Human Capital*, 101 J Polit Econ 327, 327, 337–46 (1993) (finding a “significant negative effect of proportional income taxation on human capital,” in contrast to prior literature); James J. Heckman, *A Life-Cycle Model of Earnings, Learning, and Consumption*, 84 J Polit Econ S11, S12, S27–29 (1976) (showing that “[s]ince an income tax depresses the rate of interest and lowers the cost of borrowing, and since forgone-earnings costs of investment may be written off when incurred, higher tax rates encourage human capital investment and may raise the present value of lifetime earnings”). See also Dennis Zimmerman, *Education Tax Credits, Higher Education, Federal*, in Joseph J. Cordes, Robert B. Ebel, and Jane G. Gravelle, eds, *The Encyclopedia of Taxation & Tax Policy* 100, 101 (Urban Institute 2d ed 2005) (noting that “forgone earnings, scholarships, and government grants represent a larger share of an individual’s human capital investment than do most students’ direct outlays, such as tuition, and these investments are effectively deducted when incurred because they are never included in income in the first place,” and thus that human capital may actually be taxed more favorably than physical capital). While human capital investment as described in this literature could include elements other than higher education (such as on-the-job training), educational investment is a significant component of human capital investment. Thus, this literature is central to the higher education choices that Simkovic describes.

⁷ See Simkovic, 82 U Chi L Rev at 1995–2003, 2010–35 (cited in note 1).

to other investments? Are higher education and other investments actually substitutes? How might such substitutability differ for different types of higher education investment, such as college versus graduate school? More broadly, how do people decide to pursue higher education at all? Are all tax incentives or disincentives created equal, or are some particularly salient? How do supply-side tax provisions (that is, tax incentives affecting educational institutions and donors) factor into the analysis? These questions must be investigated before we can formulate sound policy.

In this invited response essay, I explore some of the issues raised but left open by *The Knowledge Tax*. I largely accept the factual premise on which Simkovic's argument is based—that pretax rates of return on higher education are higher than returns on equity⁸—but question some aspects of his argument and develop other aspects. I make three basic points.

First, it is not clear that higher education is, in fact, taxed less favorably than traditional investments. As others have pointed out, a potentially significant component of human capital investment—forgone earnings—is not taxed at all.⁹ Furthermore, Simkovic's analysis focuses on the tax rules affecting demand for higher education while largely ignoring those that might affect supply. But surely in a market as idiosyncratic as the one for higher education, supply-side tax provisions play a nontrivial role. The impact of tax incentives on the supply of higher education needs to be more thoroughly understood before we can assess the relative treatments of human and other capital.

Second, Simkovic's analysis rests on the assumption that higher education and capital investment are substitutes, but it is not clear the extent to which this is the case. The market for education is distinctive, and an economic analysis like the one that Simkovic presents may not provide an accurate picture of real-

⁸ See *id.* at 1995–2003. See also Claudia Goldin and Lawrence F. Katz, *The Race between Education and Technology* 50–53 (Belknap 2008) (noting the rise in education premiums in the second half of the twentieth century). But see James J. Heckman, Lance J. Lochner, and Petra E. Todd, *Earnings Functions and Rates of Return* *20 (IZA Discussion Paper Series, Jan 2008), archived at <http://perma.cc/YE9V-NMQ3> (suggesting that high estimated psychic costs to schooling are one reason why rates of return to high school are high while dropout rates are also high).

⁹ See Trostel, 101 J Polit Econ at 328 (cited in note 6); Heckman, 84 J Polit Econ at S12, S28 (cited in note 6); Boskin, *Notes on the Tax Treatment of Human Capital* at *4 (cited in note 6).

world decisionmaking. This question of how higher education decisions are actually made is foundational to Simkovic's argument,¹⁰ so it could have been explored in greater depth.

Relatedly, to the extent that tax considerations play a role in the decisions of potential students, we need a theory of which tax incentives matter. Lumping together "the taxation of higher education" to contrast it with the taxation of traditional investments is an effective rhetorical move if one wants to wrestle the optimal tax elephant, but the salience revolution is upon us. As this growing body of literature reveals, not all tax incentives are created equal, and depending on design, timing, and other features, some are likely to be more salient than others.¹¹ *The Knowledge Tax* left me craving a typology of *which* tax rules are likely to matter at the time people decide whether to pursue higher education, which ones are likely to go unnoticed, and how design considerations may affect the effectiveness of various tax provisions. Parts I through III address each of these points in turn.¹²

I. IS HIGHER EDUCATION TAXED UNFAVORABLY?

The Knowledge Tax argues that higher education is taxed more heavily than physical investments, but it is not clear that this is actually the case. Professor Simkovic points out that taxation of business investments permits cost recovery through deductions, depreciation, or basis recovery on sale, and that appreciation generally receives favorable long-term capital gain treatment on sale.¹³ He argues that features such as favorable rates for qualified dividends, stepped-up basis on appreciated assets bequeathed at death, tax deferral for tax-advantaged retirement

¹⁰ See Simkovic, 82 U Chi L Rev at 1985–95 (cited in note 1) (analyzing higher education choice as a type of investment).

¹¹ See, for example, Andrew T. Hayashi, *The Legal Salience of Taxation*, 81 U Chi L Rev 1443, 1446–51 (2014); David Gamage, *On the Future of Tax Salience Scholarship: Operative Mechanisms and Limiting Factors*, 41 Fla St U L Rev 173, 174–76, 181 (2013); Lilian V. Faulhaber, *The Hidden Limits of the Charitable Deduction: An Introduction to Hypersalience*, 92 BU L Rev 1307, 1307–11 (2012); Jacob Goldin, *Sales Tax Not Included: Designing Commodity Taxes for Inattentive Consumers*, 122 Yale L J 258, 260–66 (2012); David Gamage and Darien Shanske, *Three Essays on Tax Salience: Market Salience and Political Salience*, 65 Tax L Rev 19, 20–22 (2011); Deborah H. Schenk, *Exploring the Salience Bias in Designing Taxes*, 28 Yale J Reg 253, 261–63 (2011); Brian Galle, *Hidden Taxes*, 87 Wash U L Rev 59, 62–65, 72–77 (2009). See also note 54.

¹² For a related commentary that makes points consistent with some of those explored in this Essay, see Daniel Shaviro, *Tax Policy Colloquium, Week 2: Michael Simkovic's The Knowledge Tax* (Start Making Sense, Jan 27, 2016), archived at <http://perma.cc/2DWC-JD7M>.

¹³ Simkovic, 82 U Chi L Rev at 2011–14 (cited in note 1).

accounts, and various tax advantages for real estate investments also come together to create a comparatively favorable tax regime for investment income.¹⁴ According to Simkovic, this favorable regime for traditional investments contrasts with a less favorable set of rules for taxation of higher education returns.¹⁵ Progressive taxes on labor income result in earnings premiums being taxed at higher average and marginal rates, which exacerbates the costs of shifting income from early to later years.¹⁶ Such progressivity is not offset by capitalization of costs and other basis recovery, as is the case with traditional investments.¹⁷ Furthermore, deductions for higher education expenditures are limited, so cost recovery is less favorable than for traditional investments.¹⁸

As noted, the idea that the differential taxation of human and physical capital may distort investment decisions is not new, and the effects have previously been modeled by economists.¹⁹ While some have argued that human capital is, in fact, treated more harshly than physical capital, others disagree.²⁰ Simkovic chimes in on the side of those who think human capital is taxed unfavorably. However, most of these analyses (Simkovic's included) have focused on the demand side—that is, on the tax rules affecting returns to labor. *The Knowledge Tax* briefly touches on, but does not really discuss, the ways in which higher education is potentially treated more favorably than other investments once provisions affecting the supply of education (such as the charitable contribution deduction and the nonprofit exemption for higher education institutions) are taken into account.²¹ But such supply-side tax provisions are surely material enough that their effects ought to be carefully analyzed. The federal tax exemption for higher education institutions is a major tax expenditure.²² The tax

¹⁴ Id at 2013–18.

¹⁵ Id at 2018–26.

¹⁶ See id at 2026–27.

¹⁷ Simkovic, 82 U Chi L Rev at 2018–20 (cited in note 1).

¹⁸ See id at 2018–26.

¹⁹ See note 6.

²⁰ Compare Boskin, *Notes on the Tax Treatment of Human Capital* at *4–10 (cited in note 6), and Nerlove, et al, 50 J Pub Econ at 398–99 (cited in note 6), with Zimmerman, *Education Tax Credits* at 101 (cited in note 6), and Heckman, 84 J Polit Econ at S27–29 (cited in note 6).

²¹ Simkovic, 82 U Chi L Rev at 2024–26 (cited in note 1).

²² See 26 USC § 501(c)(3). See also Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2014-2018*, JCX-97-14, *29 (Aug 5, 2014), archived at <http://perma.cc/9H5M-KRDZ>.

deduction for charitable contributions is also a significant incentive for donations to higher education institutions.²³ Together, these provisions facilitate donations to higher education institutions, subsidize the provision of higher education, and may allow higher education to be supplied at below-production prices by at least some institutions.²⁴ Put differently, it is possible that returns to higher education may be high because at least some subset of higher education is obtainable at a discount as a result of subsidies delivered through the tax code.²⁵

Moreover, save for a brief discussion in an appendix entitled “Timing Issues,”²⁶ *The Knowledge Tax* does not address head on what has long been discussed in the economics literature: that much of human capital investment is paid for via forgone—and thus untaxed—wages.²⁷ The idea is that because forgone wages and on-the-job training are not taxed, they are effectively exempted expenses that face a zero tax rate.²⁸ Meanwhile, investments in physical capital are paid out of after-tax income and cannot be immediately expensed but rather must be depreciated or otherwise subjected to eventual basis recovery.²⁹ Once the zero rate on forgone wages is taken into account, it remains an open question whether the taxation of physical capital is comparatively unfavorable.

²³ See 26 USC § 170.

²⁴ See Gordon C. Winston, *Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education*, 13 J Econ Persp 13, 20 (Winter 1999).

²⁵ See Kellie Woodhouse, *Discount Much?* (Inside Higher Ed, Nov 25, 2015), archived at <http://perma.cc/4Y79-8LSE> (providing examples of universities that “leverage large endowments” to offer tuition discounts to students); George Psacharopoulos, *The Returns to Investment in Higher Education*, in Maria Eliophotou Menon, Dawn Geronimo Terkla, and Paul Gibbs, eds, *Using Data to Improve Higher Education: Research, Policy and Practice* 121, 127, 133–34 (Sense 2014) (noting that returns depend not only on benefits of education but also on how much of the cost is borne by the individual, and discussing incidence of public spending); Charles T. Clotfelter, *The Impact of Tax Reform on Charitable Giving: A 1989 Perspective* *6–7 (NBER Working Paper Series, Mar 1990), archived at <http://perma.cc/SJ3A-697H> (suggesting that decreases in tax rates decrease the rate of charitable giving to nonprofits).

²⁶ Simkovic, 82 U Chi L Rev at 2042–43 (cited in note 1).

²⁷ See Zimmerman, *Education Tax Credits* at 101 (cited in note 6); Boskin, *Notes on the Tax Treatment of Human Capital* at *4 (cited in note 6).

²⁸ For example, if a college graduate who chose to go to business school immediately after college would have earned \$100,000 if she had started working instead, then that \$100,000 should be treated as part of the cost of business school. Because forgone wages are not taxed, the \$100,000 cost is effectively tax-exempt.

²⁹ Boris I. Bittker and Lawrence Lokken, 1 *Federal Taxation of Income, Estates and Gifts* ¶ 23.1.3 at 23-8 (Warren, Gorham & Lamont 3d ed 1999) (noting that while a capital outlay cannot be immediately deducted from taxable income, the outlay is recovered via depreciation deductions over the asset’s useful life).

In his appendix discussion, Simkovic downplays the importance of forgone earnings, at least with respect to “high-end bachelor’s, master’s, and professional degrees.”³⁰ He argues that forgone wages are less likely to be a significant factor here because earnings and job opportunities for such “young and inexperienced workers” are limited, making direct education expenditures the more significant expenses.³¹ However, while it is certainly the case that wages for those without a college degree may be low, this may be less true for those with a college degree who are deciding whether to start work immediately or to enroll in graduate school. Moreover, one wonders whether those in the market for such high-end degrees may be least likely to be affected by unfavorable taxation of human capital, if such taxation exists.³²

The broader point is that, along with supply-side tax provisions, the impact of tax-exempt forgone earnings seems central to the distortionary taxation analysis. This calls for a more robust analysis of how such tax-exempt forgone earnings might affect different categories of higher education consumers differently, how supply-side provisions come into play, and how both of these factors interact with features such as progressivity, ordinary tax rates, and limited deductions and credits for higher education to ultimately determine whether human capital investment is, in fact, taxed unfavorably.³³

Finally, one must also be careful to disaggregate tax provisions that appear to favor investments in traditional capital investments but that may be dependent on the decision to pursue higher education. For example, Simkovic characterizes certain provisions allowing tax-advantaged treatment of retirement accounts (such as 401(k) plans, 403(b) plans, 457 plans, and IRAs)

³⁰ Simkovic, 82 U Chi L Rev at 2042 (cited in note 1).

³¹ *Id.*

³² It is worth noting that, contrary to Simkovic’s claim that forgone wages are less important now because college completion rates have increased and completion times have decreased, the data suggest that the picture may be more complex for more-recent cohorts. See Doug Shapiro, et al, *Completing College: A National View of Student Attainment Rates; Fall 2009 Cohort* *17, 58–61 (National Student Clearinghouse Research Center, Nov 2015), archived at <http://perma.cc/5B4Z-DDPT>. To be fair, though, it might also be the case that those who pursued higher education during the 2008 recession may have had fewer alternative earnings or job prospects. See Bridget Terry Long, *The Financial Crisis and College Enrollment: How Have Students and Their Families Responded?*, in Jeffrey R. Brown and Caroline M. Hoxby, eds, *How the Financial Crisis and Great Recession Affected Higher Education* 209, 215–27 (Chicago 2015) (finding generally that college enrollment increased at a faster pace during the recent recession than in previous recessions).

³³ See Boskin, *Notes on the Tax Treatment of Human Capital* at *4, 7–10 (cited in note 6) (introducing the notion that earnings forgone when pursuing higher education are not taxed).

as favoring traditional investments.³⁴ However, the degree to which a taxpayer benefits from these provisions may be at least partially dependent on whether that taxpayer pursued higher education in the first place. So, for example, to the extent that some of these retirement incentive provisions are “upside down” and yield greater benefits at higher income levels, they may depend on an earnings potential that correlates with higher education levels. The more nuanced approach would be to parse these effects, rather than lumping all provisions into two rough boxes—those appearing to favor higher education and those appearing to favor other capital investments.

To sum up: In measuring the relative harshness of the regimes for taxing human and other capital, it is important to fully evaluate the impact of supply-side provisions and untaxed forgone earnings and to examine how this might differ for various types of higher education decisions. We must also be sure that provisions that appear on first blush to favor traditional investments are not themselves dependent on prior human capital investments. These factors potentially complexify the analysis and ought to be squarely addressed.³⁵

II. HOW DO PEOPLE DECIDE TO INVEST IN HUMAN CAPITAL?

Explaining demand for higher education is a tricky exercise.³⁶ If there is, in fact, an undersupply of educated labor, this could be due to a couple of different factors. First, too few people may be

³⁴ Simkovic, 82 U Chi L Rev at 2015–16 (cited in note 1).

³⁵ A more fundamental point bears mentioning: if one takes seriously the idea that government expenditures may be delivered directly through grant and in-kind programs or indirectly through tax expenditures, then one should wonder whether we can cleanly segregate the tax analysis from a discussion of government grants and higher education subsidies. See, for example, David A. Weisbach and Jacob Nussim, *The Integration of Tax and Spending Programs*, 113 Yale L J 955, 961–66 (2004) (exploring the problem of whether to implement a government program through direct expenditures or the tax system); Anne L. Alstott, *The Earned Income Tax Credit and the Limitations of Tax-Based Welfare Reform*, 108 Harv L Rev 533, 536–44 (1995) (exploring normative tensions in the decision whether to deliver income transfers through the earned income tax credit or through traditional welfare). See also generally Stanley S. Surrey, *Pathways to Tax Reform: The Concept of Tax Expenditures* (Harvard 1973). The analysis in *The Knowledge Tax* raises deeper questions of what counts as a tax provision in the higher education context, a point that has been recognized elsewhere in the literature. See, for example, John R. Brooks, *Income-Driven Repayment and the Public Financing of Higher Education*, 104 Georgetown L J 229, 258–62 (2016) (arguing that government income-driven student loan repayment programs may be reconceptualized as direct grants paired with taxes on future income). This nagging question underlies the entire analysis, but it is a topic for another day.

³⁶ Professor Simkovic’s discussion focuses on US tax rules, so I confine my discussion to the US higher education market.

choosing to pursue higher education in the first place. Alternatively, a high dropout rate (what the literature terms low “persistence”) may be a cause. Each of these explanations could in turn depend on a number of different variables, and the variables themselves are likely to differ based on program and degree type. Depending on which explanation dominates and the type of program at issue, the distortionary taxation story could prove a better or worse fit.

A. Decision to Pursue Higher Education

With respect to the initial choice to pursue higher education, the literature suggests that this is a decision that unfolds in stages, that several factors might be in play, and that the significance of each factor might vary over time. Factors such as the strength of parental support and encouragement, the influence of peers, the student’s own achievement level, the existence and level of financial aid, and the impact of teachers and guidance counselors may exert varying degrees of influence at different stages of the decisionmaking process.³⁷ Studies suggest that behaviors of individuals in high-income households may differ from those of individuals in low-income households³⁸ and that the higher education decisionmaking process may vary across demographic lines.³⁹ The literature also suggests that knowledge about

³⁷ See, for example, Don Hossler, Jack Schmit, and Nick Vesper, *Going to College: How Social, Economic, and Educational Factors Influence the Decisions Students Make* 21–30 (Johns Hopkins 1999). In a nine-year longitudinal study of postsecondary educational decisionmaking among a sample of Indiana high school students, researchers found differences in factors that influenced decisions and outcomes of students in the ninth grade and in the twelfth grade. Researchers also found that strong parental support and encouragement were the most important factors in determining whether students went to college. See *id.* at 21–30, 101–13.

³⁸ See, for example, Mohamad Hamadeh and Roy Khoueiri, *Demand Elasticities for Higher Education in the United States*, 5 *Intl J Bus & Econ Persp* 60, 65 (Fall 2010) (finding that price and income elasticities of demand are higher in public institutions than in private institutions, reflecting the higher price and income sensitivity of individuals in lower income brackets).

³⁹ See, for example, Eric Grodsky and Catherine Riegle-Crumb, *Those Who Choose and Those Who Don’t: Social Background and College Orientation*, 627 *Annals Am Acad Polit & Soc Sci* 14, 21–31 (Jan 2010) (finding that parental education, race or ethnicity, and nativity predict whether students have lifelong expectations of attending college). See also generally Susan P. Choy, *Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment*, in John Wirt, et al, *The Condition of Education 2001* *xviii (Department of Education, 2001), archived at <http://perma.cc/RFD9-5NYQ> (finding that postsecondary students whose parents did not go to college are disadvantaged with respect to postsecondary education access, after controlling for various factors); William N. Evans and Robert M. Schwab, *Finishing High School and Starting College: Do Catholic Schools Make a Difference?*, 110 *Q J Econ* 941 (1995) (finding that attending

the returns to education may be imperfect, particularly at the time students decide whether to pursue higher education.⁴⁰

In short, the decision to pursue higher education is a complex one, and it is not clear that everyone who chooses higher education does so consciously or rationally.⁴¹ It is certainly possible that distortionary taxation may play a role in determining demand for higher education, but the important question for purposes of tax policy design is how exactly tax considerations interact with other decisional factors to create specific outcomes.

B. Persistence

An undersupply of educated labor may also be due to a lack of persistence among those who choose higher education. The US education system may be broadly characterized as one with high levels of entry but also high levels of dropout.⁴² Dropout rates may vary based on a number of factors, including whether the student is pursuing education full- or part-time.⁴³

Catholic high school generally increases a student's probability of completing high school and entering a four-year college).

⁴⁰ See, for example, Winston, 13 J Econ Persp at 15 (cited in note 24) (noting that there is "a considerable degree of ignorance of how [higher education investment] will turn out and whether the hoped-for future gains will indeed materialize" and that "[p]eople investing in human capital through a purchase of higher education don't know what they're buying—and won't and can't know what they have bought until it is far too late to do anything about it"); Julian R. Betts, *What Do Students Know about Wages? Evidence from a Survey of Undergraduates*, 31 J Hum Res 27, 49–50 (1996).

⁴¹ Grodsky and Riegle-Crumb, 627 Annals Am Acad Polit & Soc Sci at 15, 17 (cited in note 39) (comparing students who assume from a young age that they will attend college to those who make later conscious decisions to attend).

⁴² See Shapiro, et al, *Completing College* at *16 (cited in note 32) (reporting a 52.9 percent completion rate after six years for the fall 2009 college-going cohort); Grace Kena, et al, *The Condition of Education 2015* *184, 234–37 (Department of Education, May 2015), archived at <http://perma.cc/Z5CU-3HZD> (reporting college enrollment and dropout rates for American students); Cathy Wendler, et al, *The Path Forward: The Future of Graduate Education in the United States* *27–28 (Educational Testing Service, Apr 2010), archived at <http://perma.cc/KM3P-AN8H> (noting a 40 to 50 percent estimated noncompletion rate for doctoral students). See also Kartik Athreya and Janice Eberly, *The College Premium, College Noncompletion, and Human Capital Investment* *2 (Federal Reserve Bank of Richmond Working Paper Series, Feb 26, 2015), archived at <http://perma.cc/XD4M-XVYX> (noting that college enrollments are at a historic high while noncompletion rates are over 50 percent).

⁴³ See Xianglei Chen and C. Dennis Carroll, *Part-Time Undergraduates in Postsecondary Education: 2003–04; Postsecondary Education Descriptive Analysis Report* *27–47 (Department of Education, June 2007), archived at <http://perma.cc/T784-RART> (finding, consistent with prior reports, that part-time education enrollment is negatively associated with degree completion and persistence); Steven C. Riggert, et al, *Student Employment and Higher Education: Empiricism and Contradiction*, 76 Rev Educ Rsrch 63, 71, 75 (2006) (discussing empirical challenges in parsing the effects of part-time employment on educational outcomes).

If an undersupply of educated labor is due to a lack of persistence rather than an initial decision not to pursue higher education, this might make Simkovic's distortionary taxation argument less persuasive. High dropout rates could conceivably be caused by unfavorable taxation of human capital, but the analysis would have to take a different pathway. We would likely have to assume that students are initially unaware of the unfavorable tax treatment of human capital, discover the unfavorable treatment midstream, and then drop out to pursue capital investment alternatives. While this is certainly possible, it seems improbable. A high dropout rate is more likely explained by the fact that at least some students are unprepared for higher education. If the problem is a lack of qualified or prepared students, then distortionary taxation is likely to play a less significant role, and better tax treatment of human capital may not fix the undersupply of qualified students, at least in the short term.⁴⁴

C. Are They Substitutes?

Perhaps the most pressing question underlying the entire analysis is what alternatives people pursue if not higher education. Simkovic suggests that higher education investment and other capital investments are substitutes.⁴⁵ This is an ambitious argument, and it may be necessary to make his optimal tax point: if higher education and other investments are substitutes, and if investment in higher education is elastic with respect to unfavorable tax consequences, then the optimal tax result that labor should be taxed more harshly than capital would be called into question, because labor is more mobile than generally assumed.⁴⁶

But it is by no means clear that human capital investment and investment in other types of capital are, in fact, substitutes. It is quite likely that those not choosing to pursue higher education are instead choosing to work immediately. It is also plausible that students are substituting less expensive education choices for more expensive ones (for example, by choosing between public and private education, in-state and out-of-state education, community college and four-year college, trade school and college, part-time and full-time education, or studying in Canada as op-

⁴⁴ See Athreya and Eberly, *The College Premium* at *2 (cited in note 42) (finding that "potential students who do not already enroll tend to have a high risk of not completing college").

⁴⁵ Simkovic, 82 U Chi L Rev at 1983, 2016 (cited in note 1).

⁴⁶ See id at 2007–10.

posed to the United States). It seems less likely that most students (even college graduates making decisions about graduate school) are choosing to invest in stocks or real estate instead of going to school. *The Knowledge Tax* introduces a hypothetical involving a recent college graduate choosing between going to medical school and investing in real estate.⁴⁷ For many, however, the primary substitute for higher education investment is likely to be immediate labor (which is subject to current and ordinary wage taxation) or alternative (for example, less expensive) education choices, rather than alternative capital investments. Of course, it is possible that students are substituting immediate work in order to earn money to make investments in the future—but in that case, the analysis must still grapple with how taxation of that current labor income at ordinary and progressive rates interacts with taxation of later-made investments to influence taxpayer choices.

Another plausible story is that sometimes *parents* are the ones deciding between making traditional capital investments and financing the education of their children.⁴⁸ For example, one could imagine that in some cases parents decide whether to save and invest for themselves or to pay for their children's higher education. But again, if this is the decisional pathway, a theory of how the decision is made (and a theory of *which* tax incentives are material to parents) seems necessary. So, for example, one might ask whether parents would find immediate tax incentives more salient in their decisionmaking, as opposed to the (ordinary, progressive, and hence unfavorable) taxation of their offspring's labor income down the road.⁴⁹

To summarize: the process by which the supply of educated labor is determined is complex. Before making policy recommendations, we need a nuanced account of how exactly the distortionary taxation story interacts with other factors determining higher education choices, as described by the economics and social science literature. Most pertinently, among those who choose not to pursue higher education, it is not clear whether they are substi-

⁴⁷ Id at 1983.

⁴⁸ See *How America Pays for College: Sallie Mae's National Study of College Students and Parents* *20–25 (Sallie Mae, 2014), archived at <http://perma.cc/4N2S-9ZA6>.

⁴⁹ See Caroline M. Hoxby and George B. Bulman, *The Effects of the Tax Deduction for Postsecondary Tuition: Implications for Structuring Tax-Based Aid* *16–19 (NBER Working Paper Series, Sept 2015), archived at <http://perma.cc/K7SU-22EV>; George B. Bulman and Caroline M. Hoxby, *The Returns to the Federal Tax Credits for Higher Education* *30–32 (NBER Working Paper Series, Jan 2015), archived at <http://perma.cc/225P-FET8>.

tuting traditional investments in so choosing. While the distortionary taxation theory is long-standing and interesting,⁵⁰ we still do not know how well it stands up to decisionmaking realities.

III. WHICH TAX RULES ARE SALIENT (AND WHICH ONES AREN'T)?

The Knowledge Tax also raises questions regarding which tax incentives matter. Asking whether taxation of labor as a whole is less favorable than taxation of other investments may be of limited help if the goal is to measure the effects of actual tax provisions on human capital investment and to recommend changes in the law. As the growing literature on tax salience tells us, we also need to know *which* tax provisions pertaining to human capital have the most influence on behavior at the point at which the higher education decision is made.⁵¹ Recent studies of how tax incentives shape higher education decisions have focused on the actual behavioral effects of discrete tax incentive provisions and how their design might be improved. These studies suggest that the design of each specific tax provision may matter a good deal—perhaps more so than the overall comparative harshness of the regimes for taxing human and other capital.⁵²

For example, we might generally expect direct grants at the time that the decision to pursue education is made (and at the time that tuition is due) to be more salient than later-available tax credits and more salient still than unfavorable rates on later-earned labor income. The literature suggests that students have imperfect ideas about what wages will look like after higher education, particularly at the point of deciding whether to invest in such education.⁵³ If students have imperfect notions of future wages, it seems likely that they will also lack good knowledge of how those wages will be taxed.

In a similar vein, recent studies have closely examined the impact of specific tax credits and deductions (namely, the Hope and Lifetime Learning Tax Credits and the tax deduction for

⁵⁰ See note 6.

⁵¹ See note 11.

⁵² See Schenk, 28 *Yale J Reg* at 264–70 (cited in note 11) (surveying the empirical tax-salience literature and finding that “the salience of a tax may affect economic decisions”); Amy Finkelstein, *E-ZTax: Tax Salience and Tax Rates*, 124 *Q J Econ* 969, 980–83 (2009) (showing that after the adoption of electronic toll collection in various states, the elasticity of demand for driving decreased); Bridget Terry Long, *The Impact of Federal Tax Credits for Higher Education Expenses*, in Caroline M. Hoxby, ed., *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It* 101, 137–42 (Chicago 2004) (finding no enrollment increase as a result of tax credits proposed to increase college enrollment).

⁵³ See, for example, Betts, 31 *J Hum Res* at 49–50 (cited in note 40).

higher education) on college attendance.⁵⁴ While a couple of papers suggest that the tax credits have had some effect in increasing higher education enrollment among certain populations,⁵⁵ others suggest that these tax-based aid programs have had no impact.⁵⁶ One 2015 study finds no evidence that the federal tax deduction for tuition increases higher education investment, and it suggests that this ineffectiveness may be due to issues of salience and design (such as timing and method of receipt).⁵⁷ Another study by the same authors suggests that the higher education tax credits have negligible effects on college attendance. The authors note that the absence of liquidity constraints among key beneficiaries, timing issues, and the lack of salience of the tax credits at the time when families make decisions are likely explanations for the tax credits' ineffectiveness.⁵⁸

These studies must be interpreted cautiously. On the one hand, they might suggest that the tax credits and deductions that currently exist are not sufficient to incentivize investment in higher education—which supports Professor Simkovic's argument. On the other hand, these studies may equally suggest that salience, design, and timing, rather than the overall burden on labor, may be the bigger problems and that relatively simple design tweaks may work better than a fundamental overhaul of human capital taxation.⁵⁹

Given the bent of recent scholarship, one wonders whether analyzing the actual behavioral effects of discrete tax provisions

⁵⁴ See, for example, Hoxby and Bulman, *The Effects of the Tax Deduction for Postsecondary Tuition* at *13–18 (cited in note 49); Bulman and Hoxby, *The Returns to the Federal Tax Credits for Higher Education* at *18–29 (cited in note 49); Sara LaLumia, *Tax Preferences for Higher Education and Adult College Enrollment*, 65 Natl Tax J 59, 75–87 (2012); Nicholas Turner, *The Effect of Tax-Based Federal Student Aid on College Enrollment*, 64 Natl Tax J 839, 852–55 (2011); Long, *The Impact of Federal Tax Credits* at 129–42 (cited in note 52). See also Steven Bednar and Dora Gicheva, *Tax Benefits for Graduate Education: Incentives for Whom?*, 36 Econ Educ Rev 181, 194–95 (2013) (examining the impact of 26 USC § 127, an exemption for certain employer tuition contributions, and other attendance incentives on graduate education persistence, enrollment, and funding choices).

⁵⁵ See LaLumia, 65 Natl Tax J at 75–87 (cited in note 54); Turner, 64 Natl Tax J at 852–55, 857 (cited in note 54).

⁵⁶ See Hoxby and Bulman, *The Effects of the Tax Deduction for Postsecondary Tuition* at *16 (cited in note 49); Bulman and Hoxby, *The Returns to the Federal Tax Credits for Higher Education* at *30 (cited in note 49); Long, *The Impact of Federal Tax Credits* at 129–42 (cited in note 52).

⁵⁷ Hoxby and Bulman, *The Effects of the Tax Deduction for Postsecondary Tuition* at *16–19 (cited in note 49).

⁵⁸ Bulman and Hoxby, *The Returns to the Federal Tax Credits for Higher Education* at *30–32 (cited in note 49).

⁵⁹ See, for example, id.; Hoxby and Bulman, *The Effects of the Tax Deduction for Postsecondary Tuition* at *16–19 (cited in note 49).

rather than aggregating all higher education tax provisions under a broad theoretical umbrella might be the more useful approach. *The Knowledge Tax* does nod to the possibility that various policy options may be more or less salient, but it does not take the analysis further.⁶⁰ A more robust delineation of which tax provisions are likely to affect behavior would be a valuable addition.

CONCLUSION

In arguing that investments in human capital and other investments are substitutes and that harsher taxation of labor than of capital may create an undersupply of educated labor, Professor Simkovic is attempting to speak to both the higher education literature and the optimal tax literature. *The Knowledge Tax* addresses an important topic that has potentially important ramifications with respect to inequality, economic growth, and competitiveness.⁶¹ It pulls together an immense amount of literature from across different fields, and its thesis is tantalizingly ambitious. Yet we already have economic models theorizing the relative tax treatments of human and other capital and predicting labor-supply effects, so the analytical framework has already been laid. The path forward requires robust analysis of tax laws and real-world taxpayer behavior in a manner that can support effective policymaking and rule design. We need data about how and why people (both parents and children) choose higher education. More specifically, we need to determine the extent to which human capital and other investments are substitutes; they may in fact be social complements. To the extent that tax incentives are salient in higher education decisionmaking, I suspect that this is, in part, a behavioral psychology and design question and not simply one of aggregate favorability. Thus, rather than conceptually lumping together the tax treatment of returns to labor, it would be helpful to have a taxonomy of which tax provisions matter to those making higher education decisions, which ones do not, and why. Further empirical research using methodologies such as interviews, surveys, and experiments may help us better understand the impact of taxation on higher education decisions.

Finally, my sense is that we still have not adequately answered the old question whether labor is in fact taxed more harshly than capital once features such as the zero rate on forgone

⁶⁰ Simkovic, 82 U Chi L Rev at 2031–32 (cited in note 1).

⁶¹ See generally Goldin and Katz, *The Race between Education and Technology* (cited in note 8).

wages and supply-side tax provisions are taken into account. *The Knowledge Tax* provides a largely theoretical demand-side account that focuses on how distortionary taxation affects demand for higher education. But it is difficult to make claims about demand for higher education without understanding how demand interacts with supply. I suspect, also, that the relative harshness of how human and other capital investments are taxed may vary for different types of higher education choices and for different consumers. Robust analysis of such differences would be a valuable contribution to the tax policy literature and ought to be the subject of future research.