

Taxes, Subsidies, and Knowledge:

A Reply to Professor Oei

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Abstract

In this article, Professor Simkovic responds to critiques of The Knowledge Tax.

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Introduction

In *The Knowledge Tax* I argued that federal taxes and subsidies in aggregate likely disadvantage investments in higher education relative to other investments.¹ When it comes to investments in higher education, the tax rates are higher and the tax base is larger. The returns to education—a boost to earnings—are taxed at a taxpayer’s highest ordinary income tax rates and are also subject to payroll taxes. In addition, tuition and student loan interest are largely non-deductible, whereas most costs of producing income are presently deductible or capitalized and subsequently recovered.

Although various subsidies to higher education exist, in practice these provide relatively small benefits and usually do not offset the tax disadvantages of investments in education *relative* to many other investments. Like education, many of these other investments also enjoy subsidies.

Tax disadvantages to higher education could lead to substitution away from investments in higher education and toward other investments. Assuming no negative externalities to higher education, this substitution would be an inefficient distortion. At a given level of investment, an inefficient allocation between human, physical, and financial capital would lead to suboptimal economic growth.

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Unless otherwise noted, all citations to statutory provisions in this article refer to the United States Internal Revenue Code.

¹ Michael Simkovic, *The Knowledge Tax*, 82 U. CHI. L. REV. 1981 (2015).

Underinvestment in higher education would be reflected in unusually high *pre-tax* risk-adjusted, marginal rates of return to higher education compared to other investments. Consistent with distortionary taxation, the data shows that the returns to higher education have remained persistently high.²

Professor Shu-Yi Oei recently critiqued *The Knowledge Tax*.³ Professor Oei questions whether higher education is at a tax and subsidy disadvantage compared to other investments. She focuses on supply-side subsidies to higher education and the exclusion of foregone earnings from taxation.

Professor Oei also questions the extent to which higher education and other investments are substitutes. And she questions the extent to which decisions about investment in higher education respond to economic incentives rather than psychological or behavioral factors, and echoes my own call for additional research on behavioral responses to specific policy levers.

These are important issues, and I welcome the opportunity to expand on the discussion that appears in *The Knowledge Tax*.

I. *Non-taxation of foregone earnings*

At least some students who enter university could instead have worked longer hours in a paid job and earned more money during their school years if they had not entered university. If they had worked, their additional earnings would have been taxed. The money they could have earned but did not—their foregone earnings—are one of the costs of higher education. This cost—the money they did not earn—is not taxed.

In *The Knowledge Tax*, I addressed the claim that higher education is tax advantaged because foregone earnings are not taxed.⁴ This critique targets one of the two prongs of the argument in *The Knowledge Tax*—non-deductibility of costs and the larger tax base for higher education—but does not address the second prong of higher tax rates.

Investments in human capital are heterogeneous with respect to the relative importance of foregone earnings—in other words, time—and cash outlays for tuition and the like—in other words, money. Foregone earnings are the primary cost of apprenticeships, PhDs, and on-the-job training, in which trainees accept low wages in return for valuable training.⁵ By contrast, non-deductible tuition fees and books are probably the primary cost of high-end bachelor's degrees, professional degrees and terminal master's degrees.⁶ Foregone earnings should not be calculated by assuming that attending college or graduate school means working zero hours while not attending school means working full time. Most

² Marginal returns are harder to observe than average returns and risk adjustment is not precise, but under a wide range of reasonable assumptions, the *risk adjusted marginal* returns to higher education appear to be unusually and persistently high, and a tax and subsidy differential can help explain this gap.

³ Shu-Yi Oei, *Supply, Demand, and the Taxation of Knowledge: A Response to Professor Simkovic*, 83 U. CHI. L. REV. DIALOGUE (2016).

⁴ Simkovic, *supra* note 2 at 2010, 2042–43.

⁵ John M. Barron & Mark C. Berger, *Do Workers Pay for on-the-Job Training?*, 34 J. HUM. RESOURCES 235–252 (1999); Peter Cappelli, *Why Do Employers Pay for College?*, 121 J. ECONOMETRICS 213–241 (2004).

⁶ Many master's degrees are awarded to those who aborted their PhD programs. Such master's degrees generally do not involve cash outlays for tuition.

post-secondary students work a substantial number of hours in paid employment while in college or graduate or professional school,⁷ and many young uneducated workers struggle to find full-time work. A back of the envelope analysis suggests that among college students, foregone earnings may average around \$5,000 to \$10,000 per year, while among graduate and professional students, foregone earnings may average around \$10,000 to \$20,000 per year.⁸ Tuition and related direct expenditures are typically higher than this.⁹

I intentionally focused on formal, tuition-funded higher education in *The Knowledge Tax*—rather than human capital writ large—precisely because formal higher education is the form of human capital investment for which the case for distortionary taxation is strongest, and which has well documented, unusually high returns.

All else being equal, disadvantageous tax treatment of formal, tuition-funded higher education may not only cause substitution to physical or financial capital, it could also cause substitution to less efficient methods of investing in human capital such as apprenticeships and on the job training. The pre-tax returns to these forms of investment are generally estimated to be much lower than the returns to formal education.¹⁰ Therefore the evidence of underinvestment in formal higher education is not necessarily generalizable to other forms of human capital.

With respect to high-end, tuition-funded higher education, the benefits of non-taxation of foregone earnings appear to be relatively small compared to various tax disadvantages. Economic analyses from thirty or forty years ago suggesting otherwise are based on a time

⁷ In 2011, 72 percent of students who were enrolled in college worked—20 percent full time and 52 percent part time, but generally for a substantial number of hours and a substantial portion of the year. JESSICA DAVIS, SCHOOL ENROLLMENT AND WORK STATUS: 2011 11–14 (2012), <http://census.gov/content/dam/Census/library/publications/2012/acs/acsbr11-14.pdf> (last visited Mar 3, 2015).

⁸ I conducted this analysis using cross-tabulations of 2013 American Community Survey data from IPUMS. U.S. Census Bureau, American Community Survey 2013, IPUMS-USA, University of Minnesota, www.ipums.org. To estimate foregone earnings for college attendance, I restricted the sample to those age 18 to 24 who had not had a child within the last year, who had at least a high school diploma but less than an associate's or bachelor's degree, and who were either attending college or not enrolled in school. I compared the average earnings of those enrolled in college to those who were not enrolled in school, within race and gender.

The approach to estimating foregone earnings of graduate and professional school attendance was similar, except that I restricted the sample to those age 21 to 26 who had not had a child within the last year, who had a bachelor's degree, and who were either attending graduate or professional school or not enrolled in school. I compared the average earnings of those enrolled in graduate or professional school to those who were not enrolled in school, within race, gender, and college major.

An obvious shortcoming of this analysis is that it does not adequately account for selection into additional education, which could suggest greater earning ability even at a lower level of education, higher returns to education, or, at least for some students, could be a refuge from limited employment prospects with a lower level of education. More sophisticated analyses would be helpful. However, this crude cross-tabulation represents an improvement over analyses that assume full-time employment for those not enrolled in school and no employment for those enrolled.

⁹ U.S. Department of Education, National Center for Education Statistics (2015). Digest of Education Statistics, 2013 (NCES 2015-011), Table 330.10, https://nces.ed.gov/programs/digest/d13/tables/dt13_330.10.asp; Table 330.50, https://nces.ed.gov/programs/digest/d13/tables/dt13_330.50.asp; The College Board, Trends in Higher Education: Trends in Pricing, Table 7: Published and Net Prices in 2015 Dollars by Sector, Full-Time Undergraduate Students, 1990-91 to 2015-16, <http://trends.collegeboard.org/college-pricing/figures-tables/average-net-price-over-time-full-time-students-sector>; Michael Simkovic & Frank McIntyre, *The Economic Value of a Law Degree*, 43 J. LEGAL STUD. 249, 281 (2014).

¹⁰ For a skeptical view of the returns to job-training, see Dominique Goux & Eric Maurin, *Returns to Firm-Provided Training: Evidence from French Worker-Firm Matched Data*, 7 LABOUR ECON. 1–19 (2000); James J Heckman, *Policies to Foster Human Capital*, 54 RES. IN ECON. 3–56 (2000).

when tuition was much lower, unskilled labor was relatively more valuable,¹¹ education took longer to complete,¹² and discount rates were higher.¹³ In sum, such dated analyses do not reflect present realities.

Moreover, the non-taxation of foregone earnings is broadly available for many substitute investments. For example, an individual who works fewer hours in the formal labor market and spends more time improving the value of property he or his family owns¹⁴—without compensation for his labor—will not pay taxes on his foregone earnings, just like a student. However, unlike a student, the individual or family that invests time in boosting the value of physical property will also benefit from advantageous tax rates on gains. Similarly, tax benefits are available to those who work at startups for low wages, but receive a share of equity or options.¹⁵

II. Supply side subsidies and the margin of investment

Professor Oei raises another important question—whether integrating subsidies as well as taxes into the analysis changes the conclusion that investments in higher education are disadvantaged. *The Knowledge Tax* considered higher education tax expenditures as well as federal subsidies such as Pell Grants.¹⁶ In aggregate, even after taking these subsidies into account, the tax treatment of higher education appears to be disadvantageous compared to many other investments especially at the *margin* where investment decisions are made.

¹¹ Simkovic, *supra* note 2 at 2036 (showing the decline in real earnings for men with a high school diploma or less and increase in real earnings for those with a bachelor's degree or more).

¹² Within race and institution type, 4-year, 5-year and 6-year completion rates have increased. NAT'L CTR. FOR EDUC. STATISTICS, U.S. DEPT. OF EDUC., DIGEST OF EDUCATION STATISTICS tbl.376 (2012), available at http://nces.ed.gov/programs/digest/d12/tables/dt12_376.asp; AMERICAN BAR ASSOCIATION, *Enrollment and Degrees Awarded 1963-2012 Academic Years*, in SECTION OF LEGAL EDUCATION AND ADMISSIONS TO THE BAR (2014), available at http://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/enrollment_degrees_awarded.authcheckdam.pdf

¹³ BD. OF GOVERNORS OF THE FED. RESERVE SYS. (U.S.), FED. RESERVE BANK OF ST. LOUIS, *10-Year Treasury Constant Maturity Rate* [DGS10], FED. RESERVE ECON. DATA, <https://research.stlouisfed.org/fred2/series/DGS10/> (last updated August 28, 2015).

Because the tax benefits of non-taxation of foregone earnings are front-loaded, while the disadvantages of non-deductibility of interest, non-recovery of tuition expenditures, and higher tax rates are back-loaded, higher discount rates make the advantages relatively more valuable and the disadvantages relatively less important.

¹⁴ Among those age 18 to 24 with at least a high school diploma but no associate or bachelor's degree, and who were not currently enrolled in school, approximately 43 percent lived in homes that were owned either by themselves or a family member. However, only around 4 percent live in a home owned by themselves or their spouse. U.S. Census Bureau, American Community Survey 2013, IPUMS-USA, University of Minnesota, www.ipums.org.

Among those age 21 to 26 with a terminal bachelor's degree who were not enrolled in graduate school, a similar proportion lived in a family-owned home and around 11 percent lived in a home they or their spouse owned. *Id.*

¹⁵ Ronald J. Gilson & David M. Schizer, *Understanding Venture Capital Structure: A Tax Explanation for Convertible Preferred Stock*, 116 HARV. L. REV. 874, 910 (2003); Victor Fleischer, *Taxing Founders' Stock*, 59 UCLA L. REV. 60 (2011) *cf.* Gregg D. Polsky & Brant J. Hellwig, *Examining the Tax Advantage of Founders Stock*, 97 IOWA L. REV. 1085 (2011) (arguing that founder's stock is not a subsidy because of offsetting tax consequences for the company)..

¹⁶ Simkovic, *supra* note 2 at 2018–2026.

Much of U.S. public spending on higher education comes from state governments supporting state institutions.¹⁷ These subsidies probably do not scale proportionately with increased marginal demand for higher education.

For example, public universities might have appropriations that do not directly increase with enrollments or costs. This leaves public universities facing increased demand with the following options¹⁸: (1) increase prices (if the state legislature will allow it) and privatize more of the costs;¹⁹ (2) cap enrollments in popular and expensive classes; (3) sacrifice quality to keep costs down.²⁰ Many students find resource rationing at public universities unacceptable, and therefore voluntarily sacrifice the state school subsidy to opt for more accessible or higher quality private universities. Similarly, many federal demand-side subsidies such as Pell Grants or the American Opportunity Credit will only scale along the margin of additional students wishing to attend college, but not along the margin of students desiring higher quality and more expensive college education or advanced degrees.

To the extent the analysis in *The Knowledge Tax* focuses on investment decisions at the margin, real world supply-side subsidies may not affect those decisions nearly as much as taxes or hypothetical subsidies that would scale on the margin.

In other words, many of the subsidies to higher education are inframarginal, and therefore not well situated to correct distortionary taxation at the margin of investment. Imagine if most businesses would typically spend \$10,000 per month on rent if rent were deductible, with virtually all businesses spending between \$5,000 and \$15,000. But instead of a deduction at a 25 percent tax rate, the benefit businesses received was a 50 percent credit up to \$5,000 in spending (i.e., a \$2,500 maximum credit). A few businesses spending less than \$5,000 might spend more, but most businesses would face no marginal tax benefit to higher spending on rent (above \$5,000). We would therefore expect overall spending on rent to go down compared to the efficient level under a deductibility regime. Ironically, at the new lower spending levels on rent, the public subsidies to rent would appear quite generous, because a substantial proportion of the total (lower) spending would be publicly funded. Taking into account supply and demand side subsidies, the OECD estimates that tertiary education expenditures in the U.S are around 35% public and around 65% private.²¹

¹⁷ The specific example of a supply-side subsidy Professor Oei mentions—the deduction for charitable contributions to educational institutions—is explicitly addressed in *The Knowledge Tax* and is modest. If averaged across all students, tax expenditures for the charitable contribution deduction would equal roughly \$225 per student per year, although in practice most of the benefits are concentrated at a few elite, exclusive institutions. *Id.* at 2025, 2038. These subsidies probably do not scale along the margin of investment for most students, who can only gain admissions at institutions that depend primarily on tuition. Even at elite institutions, subsidies from charitable donations grow with the amount donated and the tax revenue foregone, not with growth in the number of students or the quality of education demanded.

¹⁸ This assumes no low hanging fruit of greater efficiencies, which universities facing stiff competition for student enrollments and limited budgets presumably attempt to implement regardless of tax and subsidy levels.

¹⁹ At public universities, tuition recently surpassed state subsidies as a source of revenue. GOV'T ACCOUNTABILITY OFF., HIGHER EDUCATION: STUDENT STATE FUNDING TRENDS AND POLICIES ON AFFORDABILITY (2014), <http://www.gao.gov/assets/670/667557.pdf>

²⁰ Completion rates are lower at public universities than at private non-profit universities after controlling for race. See *supra* note 12. While this may partly reflect differences in student populations, it likely also reflects superior resources at more expensive institutions free of publicly imposed rationing and price controls.

²¹ OECD, EDUCATION AT A GLANCE 2013 207 (2013), http://www.oecd-ilibrary.org/education/education-at-a-glance-2013_eag-2013-en.

Higher education remains a relatively small fraction of public expenditures. Aggregating direct expenditures at the federal²² and state and local levels²³ and federal tax expenditures,²⁴ the public spent around \$7.7 trillion in total in 2013. Of this sum, approximately 3 percent (\$240 billion) was spent on higher education.

The public may subsidize investments that compete with higher education as much if not more than it subsidizes higher education. Healthcare and the military are each a larger share of public expenditures than higher education. Tax expenditures on housing dwarf those on higher education. If we view the gap between taxation of capital and taxation of labor as a subsidy to investment, the aggregate size of that investment subsidy is likely going to be much larger than subsidies specific to higher education. Notably, subsidies in many non-education areas scale with the level of investment, and therefore influence decision making on the margin.

III. Subsidy incidences

While it is difficult to accurately estimate subsidy incidences, the equation in *The Knowledge Tax* demonstrates that under reasonable assumptions about the level of tax and subsidy disadvantage, tax disadvantages could explain a large portion of the difference in returns between higher education and other investments.²⁵ The explanation is simple and fits the data and economic theory reasonably well.

Professor Oei suggests that some non-education subsidies or tax benefits may be complementary rather than competitive with higher education.²⁶

As a general matter, selective changes in taxation will produce both wealth effects and substitution effects for households.²⁷ For example, if the government reduced taxes on interest income, the substitution effect could cause households to substitute interest-bearing investments for other investments. However, the wealth effect could cause households to invest more in all investments, since they would have higher incomes after taxes.

²² In direct outlays, the federal government spent around \$3.5 trillion dollars in 2013 and 2014, with only around 0.3% of this (around \$10 billion) going to subsidize higher education. Office of Management and Budget, Historical Tables, Table 3.2-Outlays by Function and Subfunction, <https://www.whitehouse.gov/omb/budget/Historicals>. This estimate treats federal student loans as profitable because repayments of interest and principal are likely to exceed funding and administrative costs. In practice, the government often charges less than a private lender would, and this below-market price would be considered a subsidy under “fair value” accounting. Thus, under fair value accounting, federal expenditures on higher education could be higher. Fair value accounting would also increase estimates of subsidies through other programs, such as government mortgage and small business lending programs.

²³ In 2013, state and local governments spent approximately \$3.4 trillion dollars in total. Approximately 5% to 6% of this (\$160 billion to \$190 billion) was spent subsidizing higher education. U.S. CENSUS BUREAU, 2013 CENSUS OF GOVERNMENTS: FINANCE - SURVEYS OF STATE AND LOCAL GOVERNMENT FINANCES, <http://www.census.gov/govs/local/index.html>. These figures were calculated by subtracting higher education revenues from higher education expenditures and (for the larger estimate) capital outlays.

²⁴ Federal tax expenditures in 2013 total around \$1 trillion. Of this, around \$35 billion, or 3.4 percent, was spent on higher education. ANALYTIC PERSPECTIVES 2015. Office of Management and Budget, *Fiscal Year 2015: Analytical Perspectives; Budget of the U.S. Government* Table 14-1, <https://goo.gl/GcfzKk>

²⁵ Simkovic, *supra* note 2 at 2003–2006.

²⁶ It is also possible that some “higher education” subsidies—for example research grants—may have beneficial spillovers to industries besides and functions higher education.

²⁷ Ignoring the effects on public finances.

Similarly, tax reductions that do not explicitly target higher education could increase investment in higher education, and tax increases could reduce investment in higher education.²⁸ However, it seems likely that taxes and subsidies that are more closely tied to higher education are likely to produce a larger change in higher education investment than changes in taxes and subsidies that may be somewhat complementary.

Thus, the model in *The Knowledge Tax* need not necessarily predict that an increase in taxes on investments other than higher education would lead to an increase in investment in higher education. Instead, the model predicts that such a policy change would not lead to as large a fall in education investment as in the investments that were taxed.

I hope that future researchers will test these theoretical predictions empirically and build on the foundation laid out in *The Knowledge Tax*.

IV. Substitutes for Higher Education

Professor Oei questions whether it is appropriate to compare tax rates on higher education to investments that are taxed more favorably and to assume substitution effects between higher education and tax-favored investments. The basis of this critique is that many students who have the option of borrowing to attend college or graduate school may not have the simultaneous option of making other investments that require a large amount of capital.

Investments do not have to be direct substitutes for taxation of one to affect the level of investment in the other.

An individual student may not have a realistic choice between attending college and investing in a hedge fund or private equity fund or starting a small business. However, that student's parents and grandparents probably have access to a variety of investment options such as housing²⁹ and securities.³⁰ Parents and grandparents can decide how much financial support to provide during college or graduate school, versus how much to invest in other assets and leave to their descendants as an inheritance. Family support will likely affect students enrollment decisions—not only the choice of whether or not to attend college, but also the choice of quality and cost of institution to attend.³¹

Even parents and grandparents may not have the option of investing in a hedge fund or private equity fund or small business—at least not directly. But hedge funds, private equity funds, small business owners and their investors typically have the option of purchasing publicly traded securities or residential housing as well as purchasing illiquid investments to which most households do not have access. When households choose between higher education, securities, and housing, they affect the price and returns to securities and housing for all investors. The price and return impact of a single household's choice is likely to be negligible, but in aggregate, those choices can have a very large impact. Changes in the re-

²⁸ Again, this assumes that revenues are not used to fund higher education or complementary public spending.

²⁹ FHA mortgages are available with a minimum down payment of 3.5 percent. Thus, an individual with only \$7,000 could purchase a \$200,000 house. FHA Loan Down Payment Amounts, http://www.fha.com/fha_article?id=210 (last visited Jan 14, 2016).

³⁰ A margin account can be opened with as little as \$2,000. FINRA Rule 4210(b)(4), available at <https://www.finra.org/sites/default/files/Industry/p122203.pdf>. Diversified mutual funds and ETFs are available with similarly minimal upfront investments.

³¹ Simkovic, *supra* note 2 at 1994–1995.

turns to housing and securities will affect decisions by other investors—those whose investment options overlap with the typical household, but also include options to which typical households do not have access. And indeed, there is empirical evidence of spillovers between returns to household real estate investments and college enrollment decisions.³²

Thus, through a chain of indirect connections, incentives and decisions at one point in the capital market can affect returns and investment levels at another seemingly unconnected point.

In other words, an assumption of an efficient capital market is often useful shorthand for describing the aggregate effects of policies, even if it is not necessarily literally true at a more granular level.

Moreover, if higher education and other investments really were separate markets with a large segment of the population *only* having the option of investing in higher education—for example because student loans were more readily available than other forms of credit—all else being equal, we would expect the flood of captive investment into higher education to make the pre-tax risk-adjusted marginal returns to higher education *lower* than the returns to other investments without captive investors. But in fact, we observe the pre-tax returns to education to be unusually high.

Another version of the non-substitution critique would be that higher education and other investments are not substitutes because it is possible to borrow the full cost of higher education and simultaneously borrow against higher expected future income to make other investments.³³ In theory, this argument seems powerful—and indeed, in the long run, more highly educated individuals are likely to have higher incomes and consequently much higher levels of savings and investment. However, in practice in the short run, many students seem to behave as if their borrowing capacity is more limited.³⁴

V. Neoclassical and behavioral economics

The purpose of *The Knowledge Tax* is not to assert that the *only* explanation for underinvestment in higher education is differences in tax treatment and subsidies. Rather, *The Knowledge Tax* highlights that a simple neo-classical model can explain much of the observed data well, and that a simple and underexplored explanation is credibly at least *one* important driver. An economic model can remove higher education policy from the realm of anecdotes and narrow interest group politics and situate higher education in broader conversations about efficiency (relative to alternatives), investment, and economic growth.

As Professor Oei's response highlights, even demonstrating that higher education is at a disadvantage relative to other investments would be a substantial contribution to the scholarly literature. This would shift the policy question from *whether* we should subsidize higher education to *how* we should counter anti-education policies embedded in the tax system. Particular taxes and subsidies can best be understood within a broader context.

³² Michael F. Lovenheim, *The Effect of Liquid Housing Wealth on College Enrollment*, 29 J. LAB. ECON. 741 (2011). The article focuses on wealth effects, but it is a small move from wealth effects to assume substitution effects.

³³ Ian Ayres & Barry Nalebuff, *Diversification Across Time*, 39 J. OF PORTFOLIO MGMT. 73–86 (2013).

³⁴ Reluctance to borrow even when credit is available and borrowing seems sensible is sometimes called “debt aversion.” Simkovic, *supra* note 2 at 2033 n.267.

Neoclassical models are useful, not because they fully capture reality, but because they simplify it. Simplification makes analysis and prediction inexpensive while explaining enough of reality to be relevant. To be useful, a model sometimes need only make predictions that are likely to be directionally correct. Thus, even if some students do not respond to financial incentives or respond imperfectly, the model will make useful predictions as long as at least some students do respond in the direction economic theory predicts and few students systematically respond in the opposite direction. An economic model will still make useful predictions if factors besides finances are important to educational decisions as long as financial considerations are not completely irrelevant to all students.

More complex models can be useful if the costs of greater complexity are lower than the benefits of greater predictive accuracy. Neoclassical models remain the foundational baseline upon which behavioral models seek to build and improve. I look forward to research that builds on *The Knowledge Tax* in many of the directions that Professor Oei suggests.

However, some of Professor Oei's suggestions, which are presented as a challenge to a neoclassical model, actually support it. The neoclassical model assumes rising marginal costs and declining marginal returns to investment. In the absence of taxation, investment should cease just before the point at which marginal costs exceed marginal returns. Taxation and subsidies can move the margin, because decision makers focus on private benefits and costs, not social benefits and costs.

Professor Oei discusses information problems—some students lacking adequate information about the value of higher education. These problems can be understood as rising marginal costs. Educational institutions have an incentive to inform potential students of the value of their offerings, just as any provider of a service or investment seeks to educate potential customers or investors.³⁵ Similarly, students have an incentive to seek the best information. However, providing better information and disseminating it is costly. The leaders in marketing and outreach—some for-profit educational institutions—spend so much on sales and marketing that they seem to have limited resources to provide a quality education. We run into the classic problem of increasing marginal costs and decreasing marginal benefits.

Similarly, lower completion rates for non-traditional students could be understood as another instance of rising marginal costs—since costly interventions and improvements in educational quality can increase completion rates. Presumably if there were more resources available to institutions of higher education and their students, greater expenditures on outreach and retention efforts would be more feasible.

In sum, while nuance and complexity can be helpful, simplicity and theoretical elegance has its advantages.

³⁵ In some instances, there may be conflicts of interest that—in combination with information asymmetries—suggest a role for government intervention in improving efficiency. Michael Simkovic, *Risk-Based Student Loans*, 70 WASH. & LEE L. REV. 527 (2013).