

An Additional Tool for Financing Higher Education

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Preface

As the stimulus funding from the federal government disappears in FY2012, the following question will become more acute: will the Commonwealth have the resources and the will to become a full partner in this endeavor or will the de facto privatization of our public system of higher education continue?

Yan Zheng and Dan Hix, State Council of Higher Education in Virginia, writing in “2010-11 Tuition and Fees at Virginia’s State-Supported Colleges and Universities.”

In December 2009 Brennan O’Rear began his research on private funding of higher education students. This paper is an intermediate product of his work. Although the research here does not forecast the need for private capital or how best to finance that need, it does have an extensive history of previous efforts. Many of the plans attempted differently to resolve the issue of risks of education loans with the need for low interest rates. That remains the critical issue in student loans.

The U.S. Department of Education released data on loan defaults to support their policy of restricting federal loans to students in for-profit colleges and universities who are expected to earn enough to be able to repay the loans. The proposed regulations are known as “gainful employment.” The underlying issue is being able to identify the risks associated with field of study, college or university attended, life style choices—specifically where employed, other employment, and student performance. The analysis of longitudinal data from lenders, guaranty agencies and now the U.S. Department of Education contributes to improved understanding of the ability to benefit from higher education, now often labeled “return on [the students] investment.”

Human Capital Contracts (HCC) were among the early efforts to design a private loan program that met the needs of students, the colleges and universities, and lenders and servicers. O’Rear provides the details of this specific private financial aid program. What this report does not do is analyze economic benefits for the student and the associated financial risks of lenders and insurers.

Knowing about previous efforts to finance education with private capital may contribute to the needed conversations in a time of fiscal stringency.

Jim Farmer
Oklahoma City, Oklahoma

We can ill-afford to squander our intellectual capital by neglecting the development of those highly endowed individuals who are best fitted to assume positions of leadership...To identify exceptional individuals, to provide opportunity for their development, to stimulate them to their highest achievement, to assure that their potentialities become actualities, are both an obligation...and an opportunity.

- Martin Jenkins, 1950¹

¹ Quoted in (Plucker 2010, 34).

Higher education is immensely beneficial, both to the graduate and to American society; however, capital has not been made sufficiently available to assure equitable access for all students. In the wake of the 2007-2009 recession, the trend seems to be moving further in the direction of inequity and lack of access. There is a critical need, then, to establish new channels by which to bring capital into higher education.

The following paper discusses this present necessity, and proposes a timely solution: the human capital contract, a little-known but important financial innovation which could supplement existing programs to bring equitable higher education access within reach of lower income students. It shows that human capital contracts can be both financially sustainable and socially beneficial, and should be considered as a means to bring needed funds into higher education. Finally, it recommends actions that policy makers, universities, and donors can take to encourage the development and availability of human capital contracts.

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Why is this important?

Higher education is immensely beneficial, both to the graduate and to American society.

The benefits of higher education may be divided into benefits that accrue generally to society and specifically to graduates.²

The degree of social benefit stemming from higher education is debated. Some economists minimize these social benefits because they are difficult to quantify,³ while others insist that higher education produces broad social value.⁴ The social benefits of higher education, the latter argue, include national economic competitiveness,⁵ rapid technological adoption,⁶ a robust civil society,⁷ the “‘advancement of knowledge,’ economic growth, greater fluidity in the labor markets, [and a] ...drop in the crime rate thanks to higher levels of instruction.”⁸ From the perspective of a policy maker, such benefits equate lower burdens on publically subsidized services such as unemployment insurance and healthcare in addition to higher aggregate income tax revenue.⁹

While the size of external benefits is debated, agreement that higher education confers concentrated and tremendous advantages on individual degree holders nears consensus. The Department of Education avers unequivocally: “education and training beyond high school is no longer discretionary for those who aspire to full social and economic participation in American life.”¹⁰

A student incurs implicit and explicit costs in order to garner such education. At minimum, she must forfeit all or part of her income during this period, including potential interest from such income, and other potential opportunities. She or her family must pay or borrow the cost of tuition, fees, and associated expenses.¹¹ On average, however, a graduate benefits considerably - both financially and non-financially - from her degree.

A graduate’s non-pecuniary rewards may be even greater than her financial ones. A considerable literature documents these benefits, which include 50% lower incidence of

² This division is at the root of a debate regarding who should ultimately pay for higher education. Appendix A of this paper briefly reviews this literature. Many economists endorse systems in which students ultimately pay for higher education, with some exception for marginalized groups.

³ (see Oosterbeek 1998)

⁴ (see Acemoglu 2000)

⁵ (Mankiw 1992)

⁶ (Foster 1996)

⁷ (Coleman 2009)

⁸ (Eicher 1998, 37)

⁹ (Acemoglu 1999)

¹⁰ (Department of Education Advisory Committee on Student Financial Assistance 2001)

¹¹ (Friedman, Capitalism and Freedom 1962, 118)

unemployment, greater lifetime health, and a long list of positive life satisfaction indicators, even when controlled for other factors.¹²

Financially, graduates benefit from education because they encounter greater labor market opportunity throughout their careers, and particularly later in life.¹³ Indeed, one recent working paper from the National Bureau of Economic Research asserts a “general consensus that in the United States and other developed countries: 1) the monetary returns to annual adult income from spending one year in...college are about 7 to 12 percent, on average; 2) returns are generally higher among individuals from more disadvantaged backgrounds; and 3) returns have generally increased since the 1980s.”¹⁴ Government data support such claims, suggesting an average financial benefit of \$1.2 million dollars per Bachelor’s degree, with even greater benefits accruing to Master’s, Doctoral, and professional degree-holders.¹⁵ Furthermore, because the real income difference between students who attend postsecondary school and those who do not has widened substantially over the past several decades, there is not only greater opportunity for postsecondary graduates, but also a trend towards greater *exclusivity* of that opportunity.¹⁶

There is significant evidence, then, that higher education is immensely beneficial both for graduates and for society.

However, capital has not been made sufficiently available to assure equitable access for all students.

While its benefits are great, the high up-front cost of higher education has become a major concern for students, families, and policy makers. Over the 25 years ending in 2009, tuition and fees increased – on average – 439 percent, or nearly three times as quickly as median household income.¹⁷ Thus, from the perspective of all but the richest families, “the share of household income required for tuition and fees has increased.”¹⁸

Unfortunately, the families that are not able to shoulder this up-front cost alone sometimes find it difficult to access sufficient capital from others. In 1996, 41% of Americans from the top socioeconomic quartile achieved Bachelor’s degrees, while only 6% from the lowest quartile did so.¹⁹ Figures that factor in the legacy of parental education are even more sobering. According

¹² Note that the unemployment figure is not controlled for other variables. Among the variables for which correction is important is the disproportionate number of well-to-do students who complete postsecondary degrees. For a review (Oreopolous 2009). For unemployment figures, see (Hurley, Considerations for State Colleges and Universities in a Post-Recession America November, 2009, 3)

¹³ For dramatic evidence of this lifetime wage effect across occupation groups, see (Gourinchas 2002, 68).

¹⁴ (Oreopolous 2009, 1)

¹⁵ According to Day and Newburger (2002), US Bachelor’s degree recipients earned the 1999 equivalent of \$900,000 dollars more over a forty year working lifespan than their counterparts who possessed only a high school degree. Note that adjustment for inflation is the author’s own, based on the Consumer Price Index (Bureau of Labor Statistics 2010) <http://www.bls.gov/cpi/>.

¹⁶ (Mishel 2007)

¹⁷ (Lexington Institute 2009)

¹⁸ (National Advisory Committee on Affordability 2002, 7)

¹⁹ (Department of Education Advisory Committee on Student Financial Assistance 2001, 5)

to a recent study by Bowen, Chingos, and McPherson, “68% of students from families in the top income quartile with at least one parent having received a college degree earned a bachelor’s degree by age 26 compared with just 9% of those from families in the bottom income quartile with neither parent having received a college degree.”²⁰

Much scholarly literature demonstrates that such inequalities are not entirely due to differences in college preparation.²¹ It seems that despite the best efforts of institutions and policy makers, some students who wish to attend higher education, and who qualify on the basis of merit, are still unable to do so because of capital constraints.

This reality – what economists term ‘underinvestment in human capital’ - can also be inferred by comparing the rates of return on human capital to that of other assets with similar risk characteristics. From this perspective also, there seems to be substantial empirical evidence for underinvestment in human capital.²²

The difficulty is that when inadequate capital is present to meet demand for higher education from qualified but undercapitalized students, there is a danger that the talents of these students may not translate as they could into social and professional contributions. The Department of Education echoes this concern: “Across the country and within states...Americans’ opportunities for higher education remain unevenly and often unfairly distributed, and fail to reflect the distribution of talent in American society.”²³ Much economic literature documents the costs of underinvestment in human capital, which are not only dear, but can be remarkably subtle and varied.²⁴

Why aren’t existing efforts sufficient?

While the benefits of higher education are clear, and many institutions contribute to shouldering the burden of its high cost, some qualified students cannot pursue their educational goals because of a system of funding for higher education that has yet to provide full equality of access for lower income students.

“At the level of post-compulsory schooling, respecting equity implies that personal resources must not be an obstacle to study.”²⁵ Many institutions significantly contribute to the goal of equity in postsecondary educational access. The up-front costs shouldered by students and their families are complemented by subsidies from universities (in the form of scholarships and tuition discounts), state and federal grant programs and school subsidies, state and federal tax shelters for individual students and institutions, state and federally subsidized loan programs, and - often as a final resort - unsubsidized, privately sourced loans. This long list of options

²⁰ (Bowen, Chingos and McPherson 2009, 8)

²¹ See, for example (Bowen, Chingos and McPherson 2009), (Department of Education Advisory Committee on Student Financial Assistance 2001), and (The Education Trust 2009).

²² See (Friedman, Capitalism and Freedom 1962, 118), (Palacios 2004, 22-29), and (Oosterbeek 1998).

²³ (National Advisory Committee on Affordability 2002, 4)

²⁴ See (Mincer, Human Capital and the Labor Market 1989), (Mincer, Investment in U.S. Education and Training 1994) and (R. Shiller 2003, 8)

²⁵ (Eicher 1998, 38)

suggests the major and sustained effort undertaken by private and government institutions to expand equitable access to higher education. Nonetheless, underinvestment in human capital persists. The struggle on the part of federal, state, postsecondary institution, and private sector actors to make equitable access to higher education a reality remains far from its goal.

Federal & State Grants

While the federal government has shifted to an emphasis on loans rather than grants, states have de-emphasized grants for the least privileged in favor of grants for the most meritorious.²⁶ As a result of such shifts, federal and state grant aid for underprivileged students has historically failed to keep pace with tuition increases.²⁷

Higher Education Institutions

Higher education institutions support underprivileged and meritorious students by providing or guaranteeing their loans and through cross-subsidization. The extent to which a postsecondary institution can provide or guarantee loans depends on existing endowments, the rate of their growth, and general credit conditions. When endowments are battered by market volatility and general credit conditions deteriorate, institutions of higher education may have difficulty providing or guaranteeing loans.

In addition to providing and guaranteeing loans, institutions cross-subsidize their students through differential pricing. By charging high tuition prices to some students, they can offset discounts and scholarships given to others. At some point, however, higher education institutions encounter decreasing marginal returns on such discounting programs because there are not enough students paying full price to subsidize the students paying partial-prices. When this happens, universities must either lower the tuition discount rate, raise the full-price of tuition, or (as economies of scale permit) increase the volume of students.²⁸ If they opt to raise tuition, the full price of tuition eventually becomes so high that few students can afford it, also mitigating the institution's ability to cross-subsidize.²⁹ If they opt to increase the volume of students, some universities may find themselves having to relax admissions standards, jeopardizing competitiveness and brand equity. Neither of these options is attractive to many postsecondary institutions.

Thus, while higher education institutions offer students considerable assistance, their ability to provide discounts, subsidies, and loans is limited by endowment size, credit availability, admissions standards, and decreasing marginal returns.

²⁶ (National Advisory Committee on Affordability 2002, 7)

²⁷ (FinAid 2010) and (National Advisory Committee on Affordability 2002)

²⁸ According to a 2009 presentation by consultant Kathy Kurz of Scannell & Kurz, tuition price and prestige are highly correlated. Thus, maintaining a high price for the purposes of prestige, and a high discount rate for the purposes of student access has become routine at some universities (College Board 2009, 52).

²⁹ Reflecting these various options, average tuition discount rates differed substantially by sector in 2006, from 10% among public community colleges (where full tuition tends to be too low to support much cross-subsidization) to 33% among private Bachelor's degree institutions (where full tuition prices are high enough to afford greater cross-subsidization) (The Delta Cost Project 2009, 16).

Federal Loans & Grants

Many federal programs subsidize loans to students and families willing to borrow to finance higher education. Through the Federal Direct Student Loan Program, dependent students can borrow up to \$27,000 (independent students up to \$45,000) over the course of their Bachelor's degree.³⁰ However, Sallie Mae, one of the largest private lenders, recently reported that average four year tuitions exceed a typical \$31,000 federally subsidized loan package by \$111,500 for private schools, and \$29,800 for public schools.³¹ More conservative estimates by Fitch Ratings peg the gap at approximately \$50,000 for a typical private school undergraduate.³²

The federal government offers additional programs to assist with this difference. The Pell grant program, the largest federal grant program targeting needy students, offers a maximum \$5,550 in grants per year.³³ In addition, the Perkins loan program offers a maximum of \$4,000 per year of subsidized loans to undergraduates.³⁴

Parents may choose to go into significant debt to support their children using another subsidized loan, the Parent PLUS loan. Those who are ready to do so should be aware that such loans will not pay such additional education-related costs as internship expenses, however.³⁵ Many families, particularly those families averse to taking on the risk and burden of large loans, remain beyond the reach of such efforts. Other families may have difficulty with the application process, which – though recently updated – critics deride as “byzantine and opaque.”³⁶

Private Loans

While federal grant and lending programs significantly reduce inequality of access, 14% of all students find it necessary to turn to private loans to make up the gap.³⁷ These students typically borrow 60% in federal loans and 40% in private ones.³⁸ The latter portion is growing quickly, however. Over ten years, private student loan volumes grew at an annual rate of 8.4%, greater than three times the rate of federal loan volumes.³⁹ Thus, while private student loans made up 5% of financial aid in 2003, their percentage contribution had nearly tripled by 2007.⁴⁰

Private lenders are quite limited in their ability to fund students whose families have little income and possess few assets. While “federal student loans are underwritten based on need...private education loans are underwritten based on a credit evaluation of the borrower and/or co-

³⁰ (Department of Education 2010)

³¹ (SLM Corporation 2010)

³² (Fitch Ratings 2009)

³³ (Department of Education 2010)

³⁴ (Department of Education 2010)

³⁵ (Department of Education 2010)

³⁶ (Farrell 2010)

³⁷ Note that 26% of 2007-8 private loans borrowers chose private loans over federal loans, perhaps reinforcing criticisms of the application process for federal loans as overly complex. (The Project on Student Debt 2009)

³⁸ (Kantowitz 2009, 2)

³⁹ (Fitch Ratings 2009, 3) and (The Project on Student Debt 2009, 1)

⁴⁰ (The Project on Student Debt 2009)

borrower and risk-based pricing.”⁴¹ Such underwriting can exclude or price out students without credit who lack a qualified co-borrower.

The lack of equitable funding – partially, but far from fully, made up by government and postsecondary institution subsidization - may account in part for the fact that while 41% of high school graduates come from low-income backgrounds, only 30% percent of college freshmen do.⁴²

While Universities, federal and state governments, and private lenders do a great deal to enable all students to pursue their higher education goals, their ability in each case is limited. The 2007-2009⁴³ recession has aggravated this reality.

Why now?

Institutions and governments are less able to provide equitable access, particularly in the wake of 2007-2009 recession.

Postsecondary Institutions

Donations and postsecondary institution endowment income suffered considerably during the 2007-2009 recession and its aftermath. According to the Council for Advancement and support of Education, donations to universities have grown by 7.1% per year over the past twenty years. However, the 2008-2009 academic year saw a 3.9% *decline* in donations, with another 11.9% drop in 2009-2010.⁴⁴ In that same year, endowments suffered a record 22.3% decline in value, according to the Council for Aid to Education.⁴⁵

While some postsecondary institutions have attempted to use federal research revenue to bring in more capital, there is evidence that this tactic may actually increase instructional costs, rather than supplement them.⁴⁶ Furthermore, it has been suggested that some departmental (rather

⁴¹ (Fitch Ratings 2009, 6)

⁴² (The Education Trust 2009, 7)

⁴³ This paper uses the phrases “2007-2009 recession” to denote the economic contraction that began in December, 2007. There is some debate over the precise end-date of the contraction. While the National Bureau of Economic Research Business Cycle Dating Committee confirms that the recession began in December of 2007, the Committee has not as of this writing declared a date at which the contraction ended. See (National Bureau of Economic Research Business Cycle Dating Committee 2010). NBER uses a complex set of variables to date recessions and expansions, an approach with which some economists disagree. See (Chan 2010). Economists using the simpler GDP growth rate declare the recession that began in 2007 to have concluded in the third quarter of 2009. See (BBC News 2009).

⁴⁴ (Hurley 2010)

⁴⁵ (CAE 2010)

⁴⁶ According to the Delta Cost Project: “Research grants almost never pay for their full costs, instead requiring institutions to bear part of the cost, either overtly or covertly. The cost of faculty time goes up significantly, through reduced teaching loads. Institutions, as well as states and students, pay for this, so costs per student increase even as the amount of faculty time available for teaching goes down. Institutional leaders and policy

than externally funded) research may be partially responsible for the increase in tuition prices, leading commentators to recommend that cuts rather than increases in departmental research be examined as a means to lower tuition prices.⁴⁷

President Obama and others have called on postsecondary institutions to “do their part” to stem rising tuition prices.⁴⁸ Non-profit and consulting organizations are currently working with many postsecondary institutions to heed the call. Initiatives such as the Delta Project are exploring means by which to lower costs while maintaining quality in a context of increasing enrollments. However, it is widely observed that an entrenched culture hampers higher educational institutions’ ability to focus on costs and measurable outcomes – particularly when this objective is perceived as competing with other goals.⁴⁹

The combination of rising enrollments, buffeted endowments, contracting donations, and an entrenched culture averse to cost accounting limits the ability of postsecondary institutions to increase their current efforts so as to significantly enhance equitable student access.

State Schools and Subsidies

In the area of state funding for higher education, existing trends already made a decline likely. The recession of 2007-2009 only compounded the certainty of state higher education budget cuts.

71% of full-time equivalent students were enrolled at public two and four year colleges in 2006, while 29% were enrolled at private colleges.⁵⁰ Since a significant portion of funding for public colleges originates in the state budget, a very substantial proportion of higher education revenue is affected by changes in state funding for higher education. Thus, recessions – and their dampening effect on state tax revenue – have historically translated into higher tuition prices and fewer grants at these schools.⁵¹

“The growth in the state share of education spending” must ultimately arise “at the expense of other responsibilities of state governments or through the growth in state revenues.”⁵² For public colleges and universities, higher education has – in the past - been the “balance wheel in state finance.”⁵³ When state budgets have declined, higher education has tended to be one of the areas that first suffers budget cuts.

makers share responsibility for supporting this ‘mission creep,’ as does the federal government, which has limited reimbursements for the indirect costs of research administration for years.” (Jones and Wellman 2009, 3)

⁴⁷ See (Jones and Wellman, Rethinking Conventional Wisdom about Higher Education Finance 2009, 3) and (Bauerlein 2009).

⁴⁸ (DBRS 2010)

⁴⁹ See (The Delta Cost Project 2009).

⁵⁰ (National Center for Education Statistics 2008)

⁵¹ (National Advisory Committee on Affordability 2002)

⁵² (Murray 2007, 329)

⁵³ (National Advisory Committee on Affordability 2002, 8)

Even had there not been a recession, other spending priorities – notably healthcare and public safety – would have put pressure on postsecondary education allocations at the state level.⁵⁴ The growth of Medicaid in particular has put pressure on state budgets, increasing by 7.9% in fiscal year 2009 alone. Some state universities have expressed concern that recent federal healthcare legislation may increase the burden on states, further squeezing higher education.⁵⁵ Such new costs may compound the difficulty states already face in meeting pension and retiree healthcare promises, which the nonpartisan Pew Center on the States measures to equal \$1 trillion.⁵⁶ The aggregate effect of significant growth in other politically sensitive areas of state budgets has been a crowding out of higher education funding.

The growing number of pensioners may affect state funding for higher education politically as well as financially. It is notable that demographers have found less interest among the elderly for higher education support, particularly in those states where younger people tend to be of a different ethnic background than older ones.⁵⁷ Given that demographers predict a significant aging of the national population as baby boomers retire, such attitudes may prove detrimental to postsecondary education's political capital at the state level.

Aggravating these longer-term trends, the 2007-2009 recession hit state revenues particularly hard. Unprecedented declines in major tax collection resulted in state revenue declines of 7.5% in 2009, with major contractions in sales and income taxes. Never before had states suffered year-over-year quarterly revenue declines for five consecutive quarters. In response, thirteen states have completely exhausted their "rainy day" funds, while furloughs and drastic spending cuts have become commonplace. Significant though temporary federal support relieved some of the tightening that higher education would have experienced. States filled 30-40% of their fiscal year 2010 budgets with federal stimulus funds.⁵⁸ Despite this temporary support, overall state spending declined 4.8% in fiscal year 2009, and an additional 4% for fiscal year 2010.⁵⁹

California was probably the State whose budget was most dramatically hit by the recession. A \$24 billion budget shortfall in 2009 resulted in an unprecedented and unexpected cut of more than \$800 million in funding to the University of California. Programs were immediately shut down, and faculty laid off in response.⁶⁰ The Pew Center on the States has recently published a report arguing that ten states are close to a "California-level" budgetary crisis, with several others in fiscal peril.⁶¹ This report contends that a combination of unbalanced economies, expenditures and revenues out of line, institutionally limited legislators, and procrastination regarding tough decisions may spell hardship for state-run and state-funded entities in the near future.

⁵⁴ (Jones and Wellman, Rethinking Conventional Wisdom about Higher Education Finance 2009, 4)

⁵⁵ (Hurley, State Outlook: Fiscal and State Policy Issues Affecting Postsecondary Education 2010, 3)

⁵⁶ (The Pew Center on the States 2010)

⁵⁷ (Murray 2007, 336 and 341)

⁵⁸ (Hurley 2010, 4)

⁵⁹ (Hurley November, 2009, 3)

⁶⁰ (Lewin 2009)

⁶¹ (PCS November, 2009)

While states have the option of raising taxes, many have been reluctant to do so in the wake of a recession, particularly on highly visible income, corporate, and sales taxes. Instead, many have resorted to borrowing on the municipal bond market, widespread use of furloughs, and smaller stopgaps, such as product-specific tax increases for tobacco, alcohol, and gambling.⁶²

As of this writing, the most recent available data shows an uptick in revenue for states overall, though 34 of the fifty continue to suffer revenue contraction.⁶³ Despite these green shoots, longer-term prospects for state funding of higher education remain grim, particularly among those states in which budget competition intensifies concomitant with growing demand for other state services.⁶⁴

Federal Loans

Though federal subsidies for higher education have recently increased, the long-term ability of the federal government to significantly enhance equitable access to postsecondary schooling is also in question. Overly optimistic budgets, fast-rising enrollments, and a looming deficit throw into question the federal government's medium and long-term capacity to expand student access to higher education.

President Obama's 2011 budget forecasts a 6% annual demand growth rate for federal student loans. Analysts at Sallie Mae note that actual loan volume grew 12% annually from 2002-2008.⁶⁵ The President's budget, therefore, may need to be adjusted to accommodate greater demand for federal loans than anticipated. This is particularly true given projected growth in enrollment.

Enrollments are currently at an all time high. In 2008, the National Center for Education Statistics (NCES) had predicted three possible total enrollment numbers for that year, 18.0 million, 18.6 million, and 19.3 million students. The actual figure for 2008 was published in 2010 as 19.1 million students.⁶⁶ If the "high alternative" NCES projections continue to be the most accurate, more than 21.3 million students will be enrolled in the fall of 2018. Unless accompanied by concomitant spending cuts in other areas, or tax increases, state and federal higher education budgets are likely to be further stretched by fast-rising enrollment.⁶⁷

Over the long-term, considerations of how and to what degree higher education can be federally subsidized will depend on enrollment growth, tuition prices, and – as all federal budget allocations – the availability of federal funding. According to reports published this year at the largest centrist think-tank, the Brookings Institution:

Due to economic weakness and the recent stimulus bill, this year's U.S. budget deficit will be larger than at any time since World War II. The longer-run picture is even bleaker,

⁶² (Hurley November, 2009, 6)

⁶³ (Rockefeller Institute of Government 2010)

⁶⁴ (Jones, State Shortfalls Projected to Continue Despite Economic Gains; Long-Term Prospects for Higher Education No Brighter 2006).

⁶⁵ (SLM Corporation 2010)

⁶⁶ (National Center for Education Statistics 2009)

⁶⁷ (National Center for Education Statistics 2008)

with a clearly discernible uptick in the perceived likelihood of default on some Treasury debt.⁶⁸

Others are less sanguine. One former US Comptroller General, for instance, predicted in January, 2010 that “the single largest expense for the federal budget in 12 years will be interest on the federal debt.”⁶⁹ Such prognostications, made by respected economists and accountants, combine with ballooning enrollments and overly optimistic budgetary expectations to bode poorly for the federal government’s medium and long-term capacity to significantly expand support to students seeking higher education.

Private Loans

Funds for the origination of private student loans are sourced in the private capital markets, and enjoy no government repayment guarantees.⁷⁰ Of the \$794 billion dollars of loans outstanding as of June 30, 2009, more than 20% were non-federally subsidized, private loans.⁷¹ The availability of private loans dropped precipitously in the wake of the credit crisis that began in 2007. These are not expected to be available to the degree that they were before the 2007-2009 recession for some years. In order to clarify the reasons that private lenders will not be able to significantly expand equitable access to higher education under the current model, a basic understanding of student loans is required. For those readers who may be unfamiliar with capital sourcing for private student loans, a brief explanation is found in Appendix B.⁷²

Correctly and prudently performed, pooling, securitization, tranching, insurance, and rating techniques enable student loan purchasers to confidently customize their purchase to their exact risk and return preferences. Such confidence and security attract more capital with which lenders can sell their existing loans, and speed the availability of new capital for students.

While many techniques have been designed to attract buyers, they will still fail to do so when capital providers are less confident regarding the likelihood of repayment. Lenders’ inventories, in turn, will grow, increasing their uncertainty and lowering the volume of money they are able to borrow. As a result, fewer new loans can be made, and loans will tend to be made more conservatively, squeezing out those borrowers perceived as riskier. Just such a scenario unfolds as of this writing.

⁶⁸ (Brookings 2010)

⁶⁹ (Walker 2010)

⁷⁰ Note that loans sourced under the Family Federal Education Loan (FFEL) program were exceptional in that they were privately sourced, but government guaranteed. The Health Care and Education Reconciliation Act of 2010 eliminated the FFEL program, effective June 30, 2010.

⁷¹ Aggregate loan figures are from (SLM Corporation 2010) and (Kantrowitz 2009). It should be noted that these seemingly large numbers belie the relatively marginal contribution of private student loans to the ABS sector. Approximately 5% of ABS issued in 2009 were backed by private student loans. See (DBRS 2010) and (Asset-Backed Alert 2010).

⁷² Readers familiar with the lending industry are asked to indulge the simplification of this broad brush explanation, which omits the distinctions between loan origination, servicing, and collection, the distinction between for profit and non-profit security issuance, and other important factors judged beyond the scope of this paper.

Student loan investment returns have been abysmal, performing well below expectations. In May, 2010, nearly 13% of private student loans securitized in 2004 were in default, with approximately 11%, 8%, and 7% in default for loans securitized in '05, '06, and '07, respectively.⁷³ Overall defaults as a percentage of loans in repayment have risen steadily for three years, dramatically topping out in 2009. They remain 2.6 times higher than their 2006 lows, with delinquencies (late payments) at all-time highs.⁷⁴

High-risk (or “subprime”) loans, such as those made to students without co-signers, are faring even worse. Sallie Mae projects that 40% of their subprime loans will default; First Marblehead, which securitized loans for many of the largest banks, projects 48%. These companies alone project a combined \$5.2 billion in subprime student loan defaults.⁷⁵

While the 2007-2009 recession may have ended, student loan returns are expected to worsen in the medium-term. One rating agency writes:

Despite showing signs of improvement in the fourth quarter of 2009, performance on existing private student loan ABS throughout 2010 may well continue a long term trend of deterioration as a new slug of graduates enter repayment in a very challenging economic environment characterized most notably by a weak job market.⁷⁶

From lower loan performance follows lower loan volume. Over two years, private student loan volumes have contracted 20-30%.⁷⁷ In a single academic year, 2007-2008, student lending capacity dropped between \$6 and \$7 billion.⁷⁸ The Education Resources Institute, the largest guarantor of private student loans, filed for bankruptcy in 2008, joining a list of operational curtailments and bankruptcies at EFP, Campus Door, CLC, and My Rich Uncle, four of the largest student lenders.⁷⁹

To mitigate the crisis, the US Government intervened in late 2008, subsidizing the securitization of 2007 and 2008 student loans through the Term Asset-Backed Securities Loan Facility (TALF). While this support assisted lenders, it ended in March, 2010.⁸⁰ Today, a backlog of unsecuritized loans remains on lenders' books, stalled by a moribund SLARS and sluggish SLABS

⁷³ (DBRS May 7, 2010)

⁷⁴ (DBRS 2010)

⁷⁵ (Blog 2010)

⁷⁶ (DBRS 2010)

⁷⁷ (SLM Corporation 2010, 28)

⁷⁸ (Paying for College Blog 2008)

⁷⁹ (Fitch Ratings 2009) and (Paying for College Blog 2008).

⁸⁰ (DBRS 2010), (Fitch Ratings 2009), and (Federal Reserve Bank of New York 2010)

markets.⁸¹ Compared to the dramatic resurgence of other types of securitized loans, student loan volume has only begun to grow modestly.⁸²

At fault is both the general contraction in credit and faltering confidence among capital providers in the ability of US postsecondary students and their families to repay their student loans. One ratings agency expresses this reluctance and its ramifications succinctly:

At the most basic level, few lenders have access to capital to operate private student lending businesses. Those that can lend have already tightened underwriting standards and will continue to refine their risk tolerance. So long as the condition of U.S. consumers remains pressured, unemployment remains elevated, and performance on existing private loan portfolios remains weak, investors will be cautious about participating in the ABS market for private student loans.⁸³

A state-level official was more frank in his recent summation, saying that many banks “are not in the mood right now to lend large sums of money.”⁸⁴ In fact, many of the capital providers holding SLABS have had difficulty re-selling them, and are pressuring their issuers to commit their capital not to new student lending, but instead to buying back these disappointing financial products.⁸⁵

In the coming months and years, private student loans may have to be otherwise structured in order to win back investors. Rating agency and market analyst Fitch, Inc. “believes lenders will need to convince investors that underwriting criteria is effective enough to identify and exclude the riskier borrowers and schools that yielded significant deterioration in their portfolios in 2007 and 2008.”⁸⁶ Lenders are working to mitigate these difficulties, taking on a “clear initiative...to tighten credit underwriting” and to require universities to guarantee against loan losses.⁸⁷ Such actions limit the likelihood that private capital can reach students who would otherwise not attend college in the near-term. Less reversible changes may extend this limitation into the long-term.

Credit analysts question the viability of the entire student loan SLABS market, threatening credit downgrades,⁸⁸ and predicting that fundamental, “structural” change may undermine student access. The following three quotations give a sense of the seriousness of this threat to private student lending:

⁸¹ For example, whereas Sallie Mae completed three ABS issues in 2006 totaling greater than \$5 billion, they completed only one issuance in 2007, raising \$2.2 billion, and have attempted no issuances since (Fitch Ratings 2009). In 2009, \$9.5 billion of student loans were issued, with \$6.8 billion in SLABS originated as of mid-June, 2010. See also (Ackerman 2010) and (Fitch Ratings 2009).

⁸² Auto loan ABS volume, for example, grew by 152% between 1Q09 and 1Q10; 66% more than student loans over the same period (DBRS 2010).

⁸³ (DBRS 2010)

⁸⁴ (Ackerman 2010)

⁸⁵ (DBRS 2010) and (Ackerman 2010)

⁸⁶ (Fitch Ratings 2009, 5)

⁸⁷ (DBRS 2010, 2)

⁸⁸ (Fitch Ratings 2009, 1)

Given the specificity and complexity of the underlying loans themselves and overall transaction structures, the longevity of the asset class is seriously in question.⁸⁹

...ABS spreads are not likely to return to pre-2007 levels, which means that many lenders that have temporarily cut origination volume may need to reassess the long-term risk/return attributes of the business. Based on these dynamics, the private student loan market will find a new equilibrium; however, this may not align with public policy interests and could necessitate further legislative action to restore a healthier balance of financing for this asset class.⁹⁰

2010 and beyond, the demand for private student loans will remain robust as college tuition continues to escalate and federal loan limits remain comparatively low. However, the number of lenders of private student loans and their capacity to lend will remain limited.⁹¹

Overall, tightened general credit conditions have combined with poor student loan repayment performance to create a contraction in private student lending that limits the likelihood that traditional private sector loans will offer the influx of capital necessary to bring about equitable access to US higher education in the medium or long-term.

Given the limited and – in many cases - decreasing ability of postsecondary institutions, states, the federal government, and the private sector to supply adequate capital for higher education, particularly in the aftermath of the 2007-2009 recession, it seems clear that alternative, supplementary approaches to funding higher education merit exploration.

Human Capital Contracts: a viable additional tool.

While consigned for years to academic obscurity, one such approach has been dusted off in the past several years, with an increasing number of economists and entrepreneurs considering and experimenting with its potential: the human capital contract.⁹²

HCCs: The Concept

A human capital contract (HCC) is an equity-like instrument that permits a student to sell a portion of her future income to a capital provider in exchange for education-related funding. In its most basic form, an HCC would read something like:

⁸⁹ (DBRS 2010, 1)

⁹⁰ (Fitch Ratings 2009, 10)

⁹¹ (DBRS 2010, 2)

⁹² This paper identifies the instrument under consideration as a human capital contract (HCC) after the primary promoter of its use, Miguel Palacios. Other entrepreneurs and economists have used different terms to describe similar instruments. Roy Chapman names them *Collateralized Students' Obligations*, while Robert Shiller employs the broader descriptor *income-linked loans*. MyRichUncle, founded by Vishal Garg and Raza Khan, used the term *Preprime student loan*. See (Palacios, Human Capital Contracts 2002), (Lane 1996), (R. Shiller 2003), and (MRU Holdings, Inc. 2006).

I, (student) promise to pay (loan originator) x% of my income above y minimum every p period over t years. In exchange for this promise, (loan originator) grants (student) \$n.

Why would students and capital providers be interested in such a contract? HCCs are attractive to capital providers because they could offer comparable risk to traditional student loans, but much higher returns. They are attractive to students because – unlike traditional private student loans – they can be made available to students regardless of their family background, and pose significantly less risk of distress to students.

Traditional private student loans are underwritten on the basis of student and co-signer credit scores, liabilities, and assets, often perpetuating cycles of privilege and poverty by shutting out lower income borrowers who have bad or no credit and few assets.⁹³ Unlike a traditional loan, an HCC pays capital providers on the basis of a student's future income, not her current assets. Thus, capital providers assessing HCCs may be less concerned by a student's lack of assets and credit, and more interested in her grades, course of study, and future plans. For this reason, more private capital is likely to be available for underprivileged borrowers through HCCs than through traditional student loans.

Recall that the monthly payment on an HCC is calculated as a percentage of a graduate's earnings above a minimum threshold. It could be thought of, then, as a funding method designed to adjust automatically to adverse conditions, with the goal of vastly reducing the likelihood of graduate distress, forbearance, or default. Risk is reduced because the payments due on HCCs automatically decline when a student's income declines. Thus, graduates who encounter unexpected economic hardship would be less likely to find themselves in distress as a result of the method by which they financed their higher education.

HCCs would attract the necessary private capital by requiring that higher-earning graduates pay the same percentage of their incomes above the minimum that they would have owed had their income been lower. Thus, while some lower-income graduates might pay less money than they were originally granted, higher-income graduates would end up paying more than the initial grant.

By investing in a group of HCCs, the capital provider has the potential not only of "downside" risk (as with a traditional student loan) but also "upside" return (as with an equity investment). This equity structure should be more attractive to capital providers, as the risk and long duration of student loans is made up for by opportunity for larger than expected returns.

It should be noted that many loan programs currently offer income-contingent repayment schemes. The Federal Income-Based Repayment program⁹⁴ is one recent example. Australia, New Zealand, South Africa, and the United Kingdom have similar government subsidized programs that allow for payment to fluctuate with the level of graduate income.⁹⁵ Extant income-

⁹³ Recent data presents a grim portrait of the asset position for lower income families. While the median savings rate in 2007 was 57.8%, only 33.7% of the bottom 20% of households by income had savings in 2007. For this quintile, then, 66.3% had no household savings whatsoever in 2007. (Federal Reserve Board 2009)

⁹⁴ (Project on Student Debt 2010)

⁹⁵ (Chapman and Shavit 2010)

contingent loan programs require government subsidization, however, because investors generally would not recoup their investment at a competitive interest rate if such income contingent loans were funded purely through the private capital markets. HCCs are more likely to pay off investors because higher-income earners continue to pay a *percentage* of their income not just up to the amount they borrowed, but for the full period of the contract. Privately funded HCCs could thus supplement government subsidized programs at no additional government cost or risk.

Attractive to students and investors and requiring no government cost or risk, HCCs may uniquely supplement federally guaranteed loans, institutional financial aid, state grants, and other funds, allowing students of many backgrounds, including underprivileged students, to pursue ambitious but expensive higher education goals and promising job opportunities with the confidence that they will not be penalized if their incomes turn out to be lower than they had anticipated.

HCCs: Securitization

How might human capital contracts be structured? Traditional loan originators, such as commercial banks, could originate HCCs. These could then be held until maturity by the banks themselves, sold to specialized intermediaries, or bundled and securitized. Just as with student loan asset-backed securities today, securitized HCCs would have lower risk and a lower purchase price than any one individual HCC.

HCCs might be securitized to reflect their specific risk characteristics. For example, they could be bundled by sector exposure, grouping graduates whose educations made them likely candidates for employment within the same industry. HCCs might also be bundled by institution or other grouping.

However composed, HCC asset-backed securities would differ from traditional SLABS in that they would not be based on level repayment loans. As a result, HCC asset-backed securities would likely face lower gross default and delinquency rates than standard, level-repayment loans due to better debt management on the part of graduates. However, they might also have longer payment periods (“weighted average lives”) than standard level-repayment plans.⁹⁶

Unlike today’s SLABS, they would also likely have greater return variability, depending on their structure. Such return variability is likely to attract analysts eager to apply top financial and economic acumen to accurately predict the future returns of HCC-based SLABS. These predictions would alter investor interest, ultimately impacting the “prices” at which HCCs are available to particular students.

The “price” of a student loan can be defined as combining the duration of the loan with the interest rate per year that a student must repay in addition to the loan principle. The price of an HCC can be defined as the percentage of income above a minimum that the student would promise to forfeit *per dollar* of funds granted. “Price” may also fluctuate as a function of the length of time the student would be obligated by the HCC to pay the originator. It seems likely,

⁹⁶ See (DBRS 2007) for further discussion of the effects of non-level repayment on SLABS returns.

then, that HCC price information would grow to reflect much information regarding future incomes, including their weighted likelihood and probable growth curves. Such information may prove useful to students and others, and is discussed further below.

HCCs: History and Precedents

HCCs are not a new financial innovation. In 1953, American Nobel-laureate economist Milton Friedman published pioneering research demonstrating that income is variable, dependent on individual choices, labor market conditions, and chance.⁹⁷ Building on this research, Friedman invented the concept of HCCs as a means to finance higher education in this context. He introduced his idea two years later.⁹⁸ Friedman lamented several impediments to its implementation, however, and proposed that the federal government assist with lowering the private administrative costs thereof.

Building on Friedman's idea in the private context, Nobel-laureate James Tobin proposed an income-contingent tuition postponement option for Yale University in 1971. This program was instituted for students who wished to postpone tuition repayment. They would agree to repay as a class, each participant on the basis of her income, until all loans were paid off. By structuring the program as such, however, many students perceived no end in sight to the repayment process. They often underreported and underpaid their loans, which the University was reluctant to aggressively collect. As a result, by 1999, the loans from this program remained unpaid. Higher income earners who had continued to dutifully pay bore the burden of other high-income earners who free-rode and simply refused to pay. Thus, the 'experiment' was judged a failure.⁹⁹

Some observers recognized, however, that the Yale experiment did not accurately reflect Friedman's original idea because it constituted a single, large income-contingent loan to an entire class of students, rather than a series of individual, differentially priced investments in students' future incomes. In 1996, accountant and entrepreneur Roy Chapman attempted to resurrect the original idea of HCCs as a means by which individual students might finance their higher education. Chapman's model, however, included a cap that would maximize student payouts at 120% of the average amount paid by other students within the same pool. Even so-limited, Chapman's models projected an 8% real return on such instruments.¹⁰⁰ Chapman believed changes in federal law were necessary to make his modified HCCs viable in several states. While his efforts garnered positive press, and several members of Congress championed his cause, neither the desired legislation nor Chapman's venture materialized.

Despite these setbacks, Friedman's original idea continued to attract economists and entrepreneurs, intrigued at how HCCs might be refined to meet the needs of contemporary higher education financing.

⁹⁷ See (Friedman, Choice, Chance, and the Personal Distribution of Income 1953). Note that Friedman detailed this consideration, and considered its ramifications for policy the following year. See (Friedman and Kuznets, Income from Independent Professional Practice 1954)

⁹⁸ (Friedman, The Role of Government in Education 1955)

⁹⁹ See (Yale University 1971), (Bukeley 1999), and (Noah 1999).

¹⁰⁰ (Lane 1996)

In 2001, entrepreneurs Vishal Garg and Raza Khan became the first entrepreneurs to make HCCs a reality. Co-founders of *My Rich Uncle* (MRU), they provided both traditional student loans and HCCs that were structured on a purely merit, rather than credit, basis. According to their postsecondary institution, field of study, year, and grades, undergraduate students could access up to \$50,000 through MRU at payment rates of 1%-4% of 15 years of future income, with an initiation fee of 2.5%.¹⁰¹ The 15-year payment duration was extended while payments were deferred for students who returned for further schooling or joined volunteer organizations. In addition, payments were calculated “based on any income the individual receives or one-half of the family’s combined gross income,” with MRU receiving whichever was greater.¹⁰²

MRU successfully promoted the investment opportunity inherent in HCCs. “The return on a college education is almost twice that of an equity investment, reasoned Garg, “one out of 10 companies may succeed; here, we are investing in high-quality undergraduate and graduate students, most of whom will succeed.”¹⁰³ The company aspired to show that the power and volume of private capital markets could be marshaled to enable students through equity-like investment. An early supporter, IT entrepreneur Michael Robertson, summed up this potential:

“The goal here is to prove out a model where there are mutual funds investing in education. We have a real opportunity to change the way people are funding education.”¹⁰⁴

Within weeks of beginning, such logic won \$165 million in financing, ballooning with demonstrated success to \$600 million by 2006.¹⁰⁵ In 2007, MRU was the fourth largest provider of private student loans in the US. MRU pioneered variations on HCCs, working to more closely align student and capital providers’ interests.

Unfortunately for Messieurs Garg and Khan, the 2008 credit crisis did not spare their venture. By November, it became impossible for MRU - along with so many lenders - to finance its operations. Joining hundreds of American banks and lending companies, MRU filed for Chapter 7 bankruptcy in February, 2009.¹⁰⁶

Garg and Khan were far from alone in their passion for the potential of HCCs, however. While MRU was still growing, a Fellow at the University of Virginia’s Darden Graduate School of Business Administration, Miguel Palacios, significantly expanded on HCCs’ theoretical and mathematical basis. Beginning in 2002, Palacios’ substantial contribution culminated in a 2004 book on the subject, in which chapters are devoted to ethical considerations, alternate approaches, and pricing model alternatives.¹⁰⁷

¹⁰¹ (collegescholarships.org 2003)

¹⁰² (Schevitz 2003, 2)

¹⁰³ (Schevitz 2003, 1)

¹⁰⁴ (Schevitz 2003, 3)

¹⁰⁵ (MRU Holdings, Inc. 2006) and (Kamenetz 2006)

¹⁰⁶ (Wikipedia 2010)

¹⁰⁷ See (Palacios, Human Capital Contracts 2002), (Palacios, Options for Financing Lifelong Learning 2003), and (Palacios, Investing in Human Capital 2004).

Shortly after Palacios published his initial work on HCCs, eminent economist Robert Shiller of Yale University published The New Financial Order,¹⁰⁸ a wide-ranging call to democratize risk mitigation technology in order to improve the general welfare. The book included a discussion of income-linked loans for individuals. Shiller argued that administrative costs and challenges need not be impossible barriers for contemporary entrepreneurs. Most importantly, he linked his own 1998 mathematical work, which described the necessary structure and function of macro markets for broadly impactful, long-term risk management,¹⁰⁹ to HCCs. Shiller argued that much of the income risk young people face relates to the sectors in which they choose to gain expertise. He also published the insight that options based on HCCs could be used by students to guard against sectoral income risk.¹¹⁰

Economists continue to refine and expand the idea of HCCs. In a 2008 seminar at Clemson College, professor Rhonda Burke further elucidated the mathematical basis for pricing options based on human capital contracts, for example.¹¹¹

Over the fifty-seven years since their invention, two major attempts have been made at private, for-profit implementation of HCCs, one of which did not achieve what was judged to be necessary legislation, and the other of which – though tremendously successful – was a short-lived casualty of the 2007-2009 recession. Given the theoretical and practical power of HCCs demonstrated by Friedman, refined by Palacios, Shiller, and Burke, and put into practice by Garg and Khan, and given the unprecedented need for capital in higher education, now may be exactly the time for policymakers and entrepreneurs to consider and learn more about the potential of HCCs.

HCCs might be financially sustainable, but would they be socially beneficial?

As with any innovation or idea, there exist dangers – that the innovation may fail to perform its function, that it may negatively affect the current system, or that it may create unexpected external results. It is essential, then, that economists, policy makers, and entrepreneurs take a thoughtful approach, considering diligently the likely affects and potential ramifications of such an innovation. At minimum, the litmus test of financial innovations should be to make sure that they are not only feasible but also do minimal harm. As documented above, HCCs are promising as a potential instrument by which to bring needed capital into higher education. But what would “minimal harm” or “social benefit” mean in the context of higher education funding?

The following section considers ten criteria by which to prevent harm and ensure social benefit in higher education financing, documenting why these criteria might be important, and how HCCs measure up on their basis.

¹⁰⁸ (R. Shiller 2003)

¹⁰⁹ (R. J. Shiller, *Macro Markets* 1998)

¹¹⁰ Shiller has also co-authored a consideration of the sectoral indices that might be most useful for creating such options. See (Shiller and Schneider, *Labor Income Indices Designed for Use in Contracts Promoting Income Risk Management* 1995).

¹¹¹ (Burke 2008)

To minimize the likelihood of harm, a new financial innovation in higher education should involve:

1. **No increase in risk borne by the student and her family**
2. **No increase in the burden of debt shouldered by the student and her family**
3. **No creation of inefficiency in student choices or in the provision of higher education**
4. **No creation of labor market inefficiency**
5. **No arbitrary subsidies**
6. **No discouragement of students or families**
7. **No increased tax burdens**
8. **No higher tuitions**
9. **No undermining essential non-market educational outcomes**
10. **No limitation of graduate choices.**

We proceed through these criteria one by one.

1. No increase in the burden of debt shouldered by the student and her family

Students and their families who borrow to finance higher education face considerable debt burden. Two thirds of 2007-2008 Bachelor's degree recipients graduated with an average \$23,186 dollars of student debt. The sizes of such debts are rising quickly, at an annual average of 5.6%.¹¹²

Student borrowers could once hope for forbearance – a lender-permitted deferment – as a means to temporarily hold off on student loan payments. Before the 2007-2009 recession, forbearance sometimes helped struggling students to fend off bankruptcy through difficult times. In slow economies, however, lenders often reason that it is better to have more students in default and a few still paying than most in forbearance, only later to slide into default. Thus, lenders grant fewer and shorter forbearances. This is precisely what occurred during the last recession, and continues at the time of this writing.

...delinquency rates rebounded in 2008, as lenders pulled back on forbearance, after realizing the economic downturn would have a more prolonged impact on a borrower's ability to pay, particularly given the significant increase in the unemployment rate. Borrowers receiving forbearance are being awarded shorter grace periods to ensure they do not get out of the habit of paying every month.¹¹³

Even if paid on time, private student loans are lent at variable rates reaching as high as 18%.¹¹⁴ The variability of such interest rates is based on the global and national availability of capital, shifts which may be arbitrary to the individual borrower. Thus, borrowers who are in financial distress may find themselves with high and increasing interest rates, particularly when – as in the 2007-2009 recession –unemployment grows concomitant to a credit contraction.

¹¹² (Kantrowitz 2009)

¹¹³ (Fitch Ratings 2009, 6)

¹¹⁴ (The Project on Student Debt 2009)

Unlike conventional private student loans, however, HCCs would not increase the amount of debt shouldered by students and their families. In fact, as a supplement to federal and state support, HCCs could reduce private debt burdens *despite* rising tuitions. Since payments due on an HCC are computed on the basis in excess of a minimum amount, students who are unemployed would be under little or no obligation to pay their HCCs during their time of unemployment.

There is a second, more subtle type of debt burden that traditional student loans create, and HCCs do not. Many economists argue that lower income families and students “experience debt as a psychological barrier which may refrain them from attending postsecondary education.”¹¹⁵ Whether or not this is so, lower income students are more likely to avoid or lower their exposure to debt by working one or more jobs while attending school. Indeed, some financial aid programs such as the Federal Work-Study Program actually encourage students to combine employment with full-time study.¹¹⁶ Other students attend school part-time in order to earn enough income to make ends meet.

Unfortunately, there is evidence that such a combination of work and school is likely to lower a student’s grades. One recent study, for example, concluded that a thirty hour work week combined with school lowers students’ average grade point average (GPA) by one full mark.¹¹⁷ Other studies have shown that the combination of full or part-time work and school increases a student’s risk of dropping out of school altogether.¹¹⁸ Clearly, each of these effects lowers a student’s likely future income, as she may never achieve her degree¹¹⁹ or – in the event that she does graduate – may do so with a less competitive GPA than her differently funded peers.

Risk averse students need not work in order to avoid HCCs in the same way that they may do so to avoid traditional private loans because HCCs do not put students at the same kind of financial risk as traditional private loans. As documented above, the income-contingency of HCCs means that they are generally less risky for students than traditional private loans. If students supplement federal, state, and family contributions with HCCs, they may not need to work - or work as much - during school, secure that they are neither adding to their burden of debt nor using up potential study time with temporary employment.

2. No increase in risk borne by the student and her family

The risks we face today are substantial, even if we do not easily measure them from day to day because they either unfold slowly over the course of our lives or descend quickly but rarely as part of low likelihood, cataclysmic events.¹²⁰ Human capital is one of the largest assets most people possess, yet few are fully conscious of the risks that threaten it.

¹¹⁵ (Oosterbeek 1998, 23)

¹¹⁶ (Department of Education 2009)

¹¹⁷ (DeSimone 2008, 25)

¹¹⁸ See (Public Agenda 2009, 5-18).

¹¹⁹ It is notable that cases in which a student take on traditional private student debt to finance their education and do **not** graduate are likely to be quite distressing, as they may then face the prospect of having risky debt, no income, no assets, and few lucrative job prospects. It seems clear that such outcomes are socially undesirable.

¹²⁰ See (R. Shiller 2003, 8)and (Taleb 2010)

Human capital is not distributed evenly over the lifecycle. Nearing retirement, the share of assets made up by human capital will decline as the share made up by other assets increases. At the point of entering college, however, a student's human capital typically makes up the preponderant majority of her assets. She must decide how to use her time and other resources to cultivate this human capital in a context of what economists call "incomplete information."

Students lack information regarding many determinants of their future income. Their health, their family's future needs, and the skills and expertise that society will need in the future are unknown.¹²¹ Other students' choices will also affect a student's salary.

[Students] are incapable of...assessing the advantages their training will bring them. These advantages, and more especially the benefits in the form of higher earnings on account of their diplomas, are for most of them future benefits and therefore uncertain, since they depend to some extent on the behavior of the other students. Prospects of high earnings in a present situation of poverty of the graduates of a given discipline can greatly diminish if many candidates react in the same way to this information. (Eicher 1998, 37)

At best, then, students must make an educated guess as to how to cultivate their human capital.

Incomplete information is part of the reason that economists believe human capital is underfunded. Lenders, as well as students, must negotiate significant lack of information regarding the income prospects of their students (and thus the returns on their student loans). In order to attract capital providers to buy such loans, lenders must either limit their lending to students or lend at comparatively high interest rates. Such increased interest rates put students at greater risk of forbearance and default, however. Incomplete information is thus detrimental to traditional private student loan borrowers both because it increases their interest payments and likelihood of default while decreasing the availability of capital with which to finance their educations.

The combined effect of large debts, rising expected debt, variable interest rates, and less flexible lenders is that when choosing careers, partnerships, research areas, and potential further schooling (among other choices), many students must weigh the necessity of servicing college debt as a primary consideration, putting aside potentially promising but risky ventures for all but the most certain opportunities. By using HCCs, students considering career, internship, and research choices could take thoughtful risks, knowing that if things did not work out as planned, college debt would not deny future opportunities or force them into bankruptcy.

Students who use HCCs are much less exposed to the risk of forbearance and default than students using traditional private loans to finance their educations. This is because capital providers, who are more capable of diversifying and hedging, take on the risk to the stream of HCC payments related to individual student income fluctuations. While capital providers are still subjected to the (much lower) risk of default that stems from borrower mismanagement or other forms of borrower distress, percentage payments from graduates who earn larger incomes

¹²¹ See (Friedman, Choice, Chance, and the Personal Distribution of Income 1953)

could more than compensate for such risk. Further, as lenders will need to consider such factors as grades, school attended, and field of study in “pricing” HCCs (determining the percentage and length of future income required per \$1,000 of funds granted), they will have more information at their disposal with which to choose precisely the HCCs to which they wish to gain exposure. Capital providers could choose, hedge, and diversify their HCC related risks, many of which would be cancelled out by high-earning graduates in the same pools. As such, while HCCs tend to reduce student risk and increase (precisely understood) capital provider risk, they may well increase capital provider return as compared to traditional student loans.

It is not in the scope of this paper to discuss potential long-term innovations that may become possible given the widespread use of HCCs. It is notable, however, that economists Rhonda Burke, Ryan Schneider, Robert Shiller, and Miguel Palacios have demonstrated the financial viability of options derived therefrom.¹²² Such options could further assist students in mitigating risk, including sectoral income risk. Properly designed, these economists argue that options based on HCCs could mitigate student risk at minimal cost to students or capital providers, and at minimal risk of abuse by students or capital providers.

3. No creation of inefficiency in student choices or in the provision of higher education.

Those students who are risk averse or risk seeking – common errors depending on the way a student’s situation is framed¹²³ – will put more emphasis in their decision-making on potentially positive or negative outcomes, ensuring their irrational use of incomplete information. This combination of incomplete information and risk bias may cause them to make decisions that – though less or more risky – are neither personally nor socially optimal. Thus, for example, when Shiller writes that when risk is perceived as great, “we may tend to work cynically instead, treading water, staying in an unsatisfactory job, pretending to achieve, fearing to venture out into the rapids where real achievement is possible,” he might equally be describing the science student who studies only the “safest” biology subfield – certain, she believes, to guarantee a good job – rather than the more esoteric subfield that most interests her.¹²⁴ Students using HCCs to complement other means of financing their higher educations would not have the same degree of risk to fear, and thus might take thoughtful risks which may benefit them and society.

Students who supplemented their education funding through HCCs would also have greater information at their disposal when making choices. Price information offered by providers of HCCs regarding schools and fields of study, among other factors, might be important in some students’ decisions. While the purpose of undertaking higher education is far from merely financial for most students, many do consider future income as one factor in determining their college and course selections.¹²⁵ By considering HCC “prices” offered by commercial banks at various universities for students in various fields of study, students would indirectly access highly informed statistical research regarding the likely future incomes of graduates from such

¹²² See (Burke 2008), (Shiller and Schneider, Labor Income Indices Designed for Use in Contracts Promoting Income Risk Management 1995), (R. J. Shiller, Macro Markets 1998), and (Palacios 2004).

¹²³ See (Kahneman and Tversky 1979)

¹²⁴ (R. Shiller 2003, 8)

¹²⁵ Lower income students seem to be disproportionately interested in postsecondary education as a means to “connect with a career.” See (College Board 2009, 50).

schools and programs. “More important,” Palacios points out, “such comparisons will reveal information about the economic value of certain fields of study *compared to their cost*.”¹²⁶ HCCs would thus provide critical information for students regarding average graduate incomes vis-à-vis the cost of educational programs, further informing student educational decisions.

Higher education might thus become more efficient by enhancing the information with which students make choices. Institutions of higher education might also benefit from this type of information.

According to the non-partisan Delta Cost Project on College Spending:

Our country needs to increase capacity *and* improve performance in higher education. We can’t allow the funding crisis to justify rollbacks in access or quality. [Higher education] and policy leaders need to be making strategic investments in the future through reallocation of existing resources as much, or more, as from new revenues. That means paying attention to spending – both to improve management of costs and to persuade the public that higher education deserves to be a priority for continued public investment....But...there has been little progress in translating cost data into information that can be used either to inform strategic decision making or to show the public how institutions spend their money.¹²⁷

More controversially, some bankers contend that the combination of private lending based on student and cosigner credit and government subsidization has actually enabled some of these inefficiencies by fueling a tuition bubble in higher education.¹²⁸ While it is outside the scope of this paper to determine whether and the extent to which this may be true, it is certain that any higher education financing innovation should not hinder efforts on the part of the higher education community to increase spending efficiency while maintaining quality.

If HCCs would have any effect on higher education efficiency, it would be to assist universities in comparison of cost efficiency for vocational preparation programs. By revealing information regarding the likely future incomes of students, HCCs would enable universities to compute average future income per degree¹²⁹ per dollar of instructional cost, and compare the same among various programs. While some programs, such as those that intensively employ laboratories, are justifiably likely to be more expensive, such a metric could – along with others - inform universities in their strategic decision making and positioning.

4. No creation of inefficiency in the interface between students and potential employers

It is important that any innovation in the financing of higher education not create labor market inefficiencies that distort the interface between graduates and potential employers. For example, a financial innovation that encourages the preparation of students for work that has been made

¹²⁶ (Palacios, Human Capital Contracts 2002, 5)

¹²⁷ (The Delta Cost Project 2009, 5)

¹²⁸ See, for example, (Kakaty 2009).

¹²⁹ Note that consideration of costs per degree, rather than merely costs per student, is advocated in (Jones and Wellman 2009, 4).

redundant by technological change would be socially detrimental because it would tend to expend societal resources on training and preparation that would not be useful to society.

HCCs are quite safe from this risk. As noted above, the “price” (percentage of income per \$1,000 granted) of HCCs would be different for different students, depending on their statistically likely future income as calculated by the originator of the HCC. HCC originators would likely factor in fields of study and intended career paths into the calculation of such prices. If it is assumed that careers paths offering high average wages tend to require those skill sets that are highest in demand, then HCC prices would tend to inadvertently make students aware of those career paths most in demand by employers. Thus, if anything, HCCs would improve rather than be detrimental to labor market efficiency.

5. No arbitrary subsidies

When Milton Friedman considered broad government subsidies proposed for all students, he responded as such:

...this would involve rationing in some essentially arbitrary way the limited amount of investment among more claimants than could be financed. Those fortunate enough to get their training subsidized would receive all the returns from the investment whereas the costs would be borne by the taxpayers in general – an entirely arbitrary and almost surely perverse redistribution of income. (Friedman, *Capitalism and Freedom* 1962, 122)

One of the drawbacks of subsidies such as institutional tuition discounts, merit and need-based grants, and government-supported loan programs is that they offer assistance to those who need it at the point when they are enrolling in college. Only years later is it apparent which students go on to become low income earners and which go on to become high income earners. If those who go on to become high income earners could have accessed their future income earlier, they would not have needed the subsidy. HCCs allow for such access. Using HCCs, low income earners are ultimately subsidized by high income earners. High income earners, however, receive no subsidy. Put another way HCCs enable what economists term “consumption-smoothing” for high income earners. HCCs enable these households to maximize their quality of life by balancing spending and saving over the course of a lifetime. In sum, unlike other programs, HCCs do not provide arbitrary subsidies to lucky high income earners, but only to low income earners who have a long-term need for higher educational support.

6. No discouragement of families

As already noted, the prospect of massive debt may be a psychological barrier for low income families. This possibility seems intuitive when the household incomes are compared to amounts of debt. The average bachelor degree recipient from a household with \$25,000 of annual income emerges from college roughly \$25,000 in debt.¹³⁰ Such realities can be highly discouraging to low income families with children who aspire to higher education.

Stated tuition may also be inadvertently discouraging. While some universities use tuition price to communicate prestige, Kevin Menk, Managing Partner of institutional consulting firm Strategic

¹³⁰ (Kantrowitz 2009)

Resources LLC points out that “stated tuition can sometimes result in immediate rejection” while “other [potential applicants] recognize that it is just the ‘starting price.’”¹³¹ Indeed, research from Strategic Resources, LLC shows that approximately 30% of households reject potential colleges on the basis of stated tuition alone. In many cases, students who may not be aware that tuition can be heavily discounted reject colleges that may interest them without mentioning them to their parents. “I don’t want to ask them to help pay that much,” they reason.¹³² Such naiveté may contribute to the significant gap in college achievement between lower and higher income individuals.

HCCs could mitigate some of the discouragement experienced by students and families struggling to find a way to afford college. Even if only used as a supplement for federal, state, and institutional aid, HCC originators would surely publically market the fact that students with no assets or income could qualify for HCCs. Such marketing might even spur some discouraged families to learn more about the various funding options by which college could be within reach.

7. No increased tax burdens

One disadvantage of the current federally subsidized lending regime is that the government shoulders the risk that students default on their loans. An attractive quality of HCCs is that they would incur neither additional government spending nor additional government risk. Individuals who wish to opt out of HCCs can choose not to participate in the risk-sharing, whereas taxpayers cannot opt out of the government risk-sharing program. HCCs thus pass the test of no increased tax burdens.

8. No higher tuitions

As noted above, some contend that the combination of private lending based on student and cosigner credit and government subsidization has fueling a tuition bubble in higher education, enabling the perpetuation of ingrained institutional inefficiencies. To the degree that this may be the case, HCCs are unlikely to aggravate such a problem. While widespread use of HCCs as a supplement to present funding techniques would bring more capital into higher education, it would also tend to direct financially driven students towards schools offering higher value education in terms of likely future income returns. Imagining a purely financially driven student for the sake of example, Palacios outlines how this might occur:

...(T)wo students attending different schools might be offered human capital contracts with different prices but end up committing the same percentage of income to cover all expenses. This will be the case only if investors’ expectations regarding future earnings are *proportional* to the total expenses that students incur. For instance, if human capital contracts for school A are twice as expensive as those for school B (which means that investors see twice as much potential earnings in school B), but school B is twice as expensive as school A, the percentage of income that students will have to commit in either

¹³¹ (Kurz 2009, 56)

¹³² (College Board 2009, 56)

case will be the same. In that case, the student has an incentive to attend the school *with the highest expected income* rather than the cheapest one.¹³³

Thus, those students who are most financially driven would prioritize the information HCCs offer regarding future incomes above other considerations. If the actions of such students had any effect on tuitions, it would be to lower them by creating more transparent competition among universities for such students.

9. No undermining essential non-market educational outcomes

Some readers may object to HCCs out of concern that they might not pay for students to attend schools and programs that do not result in higher graduate incomes. As there may be socially important programs that do not pay for themselves in terms of future income, such objections have merit. However, HCCs are a supplemental form of education funding, and need not exclude other funding forms. Students attending such programs could employ the same means of financing them that they do now.

Nevertheless, some of these current funders, such as higher education institutions and foundations, could significantly amplify the “returns” on their social investment.¹³⁴ For example, if the Smith Foundation (or University) wishes to fund students who study philosophy, it might use its funds to offer ten full scholarships for promising philosophy students. To amplify the number of philosophy students funded, however, the Smith Foundation (or University) could fund twenty HCCs. Of these, twelve students might go on to make high enough income to pay back the cost of their educations, while eight might not. Thus, the Smith Foundation would be able to support twenty philosophy students rather than ten, while leaving a safe margin (in this case, 2 students or 10%) with which to assure the program’s sustainability.

Foundations, alumni associations, and institutions of higher education could thus use HCCs to target and amplify support for those programs that, though they benefit society, may not be compensated in the labor market.¹³⁵

10. No limitation of graduate choices.

Some critics object to HCCs on the basis that they consider HCCs a form of “indentured servitude.”¹³⁶ This argument is flawed, however, in that it conflates payment with choice of work. Students who supplement their educational funding with HCCs are free to quit school at any time, just as other students are. Further, graduates so financed may work in whatever field they choose, or not to work at all. These freedoms are essential to HCCs’ ethical solvency. Any effort on the part of capital providers to interfere with graduate work choices should be looked on with suspicion, just as efforts by employers to “lock” employees into work during the years following an employer-paid education. So long as capital providers leave graduates free to make work

¹³³ (Palacios, Human Capital Contracts 2002, 5)

¹³⁴ For a more extensive discussion of this idea, see (Palacios, Investing in Human Capital 2004, 65 & 78).

¹³⁵ This idea should be credited to Miguel Palacios, who explains in much greater detail than appropriate to the scale of this paper how such aid savings could work. See (Palacios, Investing in Human Capital 2004).

¹³⁶ See (Schevitz 2003, 2), for example.

choices just as anyone else, HCCs do not constitute indentured servitude and empower, rather than trap, students so financing their postsecondary education.

1. **No increase in risk borne by the student and her family**
2. **No increase in the burden of debt shouldered by the student and her family**
3. **No creation of inefficiency in student choices or in the provision of higher education**
4. **No creation of labor market inefficiency**
5. **No arbitrary subsidies**
6. **No discouragement of students or families**
7. **No increased tax burdens**
8. **No higher tuitions**
9. **No undermining essential non-market educational outcomes**
10. **No limitation of graduate choices.**

Against every one of these criteria, human capital contracts meet the test of minimal harm, and – in many cases – significant social benefit.

Policy recommendations by actor

Given these benefits, and given the timeliness and necessity thereof, both the public and private sector should act to speed their development and widespread availability. Federal policy makers, institutions of higher education, alumni, and philanthropists can each contribute to this process.

Federal Policy Makers

Federal policy makers can do a great deal to speed the development and availability of HCCs. Of primary importance is to clarify the rights and responsibilities of participants in HCCs, including students, graduates in repayment, originators, servicers, collectors, and owners of HCC-based securities. In addition, federal policy makers may wish to consider the creation of a national, publically accessible registry of de-individuated HCCs in order to encourage their fair pricing.

Federal policy makers can clarify five questions:

1. Under what circumstances can an investor or institution buy an HCC, or a cash flow deriving therefrom?

The securitization of proceeds from student loans funded by MRU suggest that current financial practices allow for investment in HCCs.¹³⁷ It is unclear, however, whether and what limitations on such investments would be for unsophisticated investors and specially regulated investors,

¹³⁷ In May, 2006, MRU launched its PrePrime loan product, which offered credit on the basis of projected future income. On July 9, 2007, MRU announced the securitization of \$200 million of student loans, including loans whose worth were valued using these PrePrime metrics (MRU Holdings 2007). On July 3, 2008, MRU announced a further \$140 million securitization of similar loans (PRNewswire-FirstCall 2008).

such as mutual funds and pension funds. Until these issues are clarified, some investors may be hesitant to purchase HCC-backed securities.

2. What is the federal legal status of HCCs?

As already noted, some have expressed uncertainty with regards to how HCCs would be treated in the state judicial system. “[Entrepreneur Ray Chapman’s company] HCR claimed that because certain states prohibit the assignment of future income, residents of those states could challenge the validity of the contract in state courts.”¹³⁸ While such legal concerns did not deter Garg and Khan at MRU, Chapman introduced a plan to clarify the legal standing of HCCs at the federal level. The proposal was endorsed by notable Congressional allies, such as Rep. Lindsey Graham (R-S.C.): “To me, this plan is the free enterprise system at its best; it’s a good way to fill in the gaps [not covered by existing forms of financial aid].”¹³⁹ By clarifying the national legal standing of HCCs, policy makers would pave the way for their widespread availability.

3. What is the status of an HCC in cases in which the student or graduate declares bankruptcy?

As of this writing, private student loan debts are not generally dischargeable in bankruptcy.¹⁴⁰ Currently pending legislation in the Senate and House proposes to widen the criteria for student loans eligible for bankruptcy discharge.¹⁴¹ HCCs should not be affected by such legislation, as HCCs are not a debt in the traditional sense. They are an equity-like form of income-contingent loan. Palacios expresses this point neatly. He argues that “because students pledge a percentage of their future income, creating a framework that recognizes the right of the investor to those earnings is extremely important.”¹⁴² Whether or not other student loans become dischargeable, any new legislation should carefully exclude equity-like instruments from dischargeability.

4. If authorized by the student, what information regarding student income can originators, servicers, and collectors access?

A fourth way that legislation could support the development and availability of HCCs is to assure that, with the student’s permission, HCC originators and servicers can access graduate income information. HCC originators should have the right (as authorized by the student) not only to access tax records, but also employment agreements so as to protect capital providers from students who might attempt to subvert the HCC by failing to report non-cash income (such as stock options).

¹³⁸ (Palacios, *Human Capital Contracts* 2002, 8)

¹³⁹ (Lane 1996, 2)

¹⁴⁰ See S.256, *The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005*, effective October 17, 2005 (109th Congress of the United States of America 2005).

¹⁴¹ S. 3219, *The Fairness for Struggling Students Act*, and H.R. 5043, *The Private Student Loan Bankruptcy Fairness Act* were both introduced April 15 of 2010. As of this writing, both remain in committee (NextStudent Student Loan Blog 2010). See also (DBRS May 7, 2010).

¹⁴² (Palacios, *Human Capital Contracts* 2002, 9)

5. Do payments made on HCCs qualify for the same tax treatments as payments made on traditional student loans?

It is important that HCCs compete on an “even playing field” with traditional student loans. Currently, individuals earning less than \$70,000 annually can take a partial tax deduction on their student loan payments.¹⁴³ Regulators should ensure that equivalent tax treatment be awarded to HCC payments.

In addition to addressing these five questions, federal legislators may also wish to consider cost effective ways to pro-actively support the fair and reliable pricing of HCCs. One approach would be the creation of a national central registry of de-individuated human capital contracts. This would facilitate the availability of rich, meaningful data regarding student repayment. Such data would likely facilitate lower priced, more varied, consistently available HCCs, and speed the development of socially beneficial options derived therefrom.¹⁴⁴

Higher education institutions

Institutions of higher education can also support the development and availability of HCCs for their students. Already, colleges and universities commit substantial percentages of their revenue to tuition discounting. The same institutions should consider using surplus revenue to offer HCCs to students with financial need.

As reviewed above, a transition towards partial or full use of HCCs rather than tuition discounting would accomplish the ethical goal of only subsidizing those who truly need the subsidy (those whose later income is not sufficient to comfortably pay tuition costs) without causing lower income graduates distress. While better targeting subsidies, the funding of HCCs by higher education institutions would also buy greater student access per dollar of aid. This is because higher income earners would effectively pay back the money granted them and more. Thus, the higher education institution would only “lose” aid money on low-income graduates. Some of these losses would be made up for by high-income earners’ gains. The funds saved through this structure could be used to offer HCCs to more students than could be offered the equivalent amount of traditional aid. Thus, universities that wish to enhance access, lower tuition discount rates, and better target aid subsidies should consider HCCs as a complement or alternative to tuition discounting.

Alumni & Philanthropists

Alumni and other donors to higher education may similarly wish to stretch their contributions over more students – perhaps focusing on extending access to one school’s students or students in fields of study that do not pay for themselves by increasing graduate income, but are socially beneficial. Such funding could empower even more students who would not otherwise be able to access higher education.

¹⁴³ (irs.gov 2009)

¹⁴⁴ For a discussion of how the development of such options might enhance HCCs, see (R. Shiller 2003, 140-142). For more information on the potential structure of income indices, see (R. J. Shiller 1998, 58-72).

Conclusion

- Because HCCs promise to bring students sustainably closer to the goal of equitable access to higher education without social detriment or government subsidy and
- Because higher education is currently in increasing need of supplementary funding:

Now is the time for policy makers and market actors to bring human capital contracts into reality.

Appendix A: Who pays for higher education?

A. Who can pay for higher education?

Several groups currently contribute to US higher education: government, employers, charitable organizations, and students.¹⁴⁵ A fifth category, university endowment and investment income, has also become a small but important source of revenue devoted to instruction.¹⁴⁶

Employers, charities, and endowments importantly contribute to higher education. However, they are unlikely to make up the preponderant percentage contributions. Among these, employers have the greatest power to invest in students. Evidence suggests, however, that employers will tend to pay only for training that is applicable to the student's job, and not easily transferred to other jobs.¹⁴⁷ While charitable organizations do play an important role in financing education, it is unlikely that these organizations would ever be able to meet more than a modicum of aggregate student demand. Finally, volatile revenue from endowments rarely represent more than a small proportion of a postsecondary institution's operating revenue.

Thus, students and the government are those who are most likely to pay the ultimate costs of higher education.¹⁴⁸

B. Among these, who should pay?

A considerable debate – both scholarly and political – has sought to determine which of these groups should ultimately shoulder the cost of higher education in the United States. Those who claim that the greatest benefits of higher education are enjoyed by society as a whole take the position that governments should bear the ultimate cost. Others acknowledge the benefits to society as a whole, but claim that the greatest benefits of higher education are concentrated in the individual student. Therefore, they reason, graduates should shoulder the burden of ultimately paying for their educations rather than taxpayers.

There is significant evidence in favor of social benefit from higher education. However, in Europe and elsewhere, many economists and policy makers have concluded that it is most equitable for students to bear the majority of ultimate higher educational costs. They offer four reasons:

1. because students receive the most benefit as a result of these expenses
2. because government subsidies would otherwise be arbitrarily rationed,
3. because being the ultimate payer gives students greater control
4. because being the ultimate payer makes students more responsible decision-makers.

¹⁴⁵ (Palacios, Options for Financing Lifelong Learning 2003)

¹⁴⁶ A few smaller institutions, such as Berea College, are substantially funded on this volatile basis. (Kaplan 2010)

¹⁴⁷ (Becker 1993)

¹⁴⁸ (Palacios, Options for Financing Lifelong Learning 2003)

The British *Dearing Committee* articulated this first argument in 1997:

There is overwhelming evidence that those with higher education qualifications are the main beneficiaries from higher education in the form of improved employment prospects and pay. Individuals who benefit in this way are not drawn proportionately from the socio-economic groups that currently fund higher education through general taxation. We conclude, therefore, that graduates in employment should make a greater contribution to the costs of higher education in the future. While we believe the economy as a whole, and those who employ graduates, are also substantial beneficiaries, even though these benefits have proved elusive to quantify, the greatest benefit accrues to graduates themselves. On average, they receive an excellent return for their investment in higher education...it is right to turn to graduates in work to contribute more of the costs to their higher education.¹⁴⁹

Enhancing the Committee's contention, others advance the second contention - that governments would have to restrict a 100% subsidy to education in some manner, and that this restriction would be arbitrary. In 1962, economist Milton Friedman observed:

...this would involve rationing in some essentially arbitrary way the limited amount of investment among more claimants than could be financed. Those fortunate enough to get their training subsidized would receive all the returns from the investment whereas the costs would be borne by the taxpayers in general – an entirely arbitrary and almost surely perverse redistribution of income.¹⁵⁰

Still other economists add that students have more control over the curricula of their studies when they shoulder the ultimate costs of their education, and that they tend to be more careful in their decisions regarding their own resources than in decisions regarding the resources of others.¹⁵¹

The case for students as ultimate funders of higher education may offer persuasive arguments. Nevertheless, even some economists who agree with this general approach nevertheless contend that subsidies are essential. They claim that government and private sector subsidies are important to “attract certain groups who have been systematically marginalized from educational opportunities.”¹⁵²

Thus, of the five groups that most contribute to higher education funding, two – the government and students – are likely to pay. Many policy makers and economists argue that the latter should ultimately pay the cost of higher education, though some qualify that the government should subsidize marginalized groups.

¹⁴⁹ It is notable that, though instantiated under Conservative leadership, the Dearing Committee's recommendations were generally adopted by the subsequent New Labour government. (Williams 1998, 81)

¹⁵⁰ (Friedman, *Capitalism and Freedom* 1962, 122)

¹⁵¹ (Eicher 1998)

¹⁵² (Palacios, *Options for Financing Lifelong Learning* 2003)

Appendix B: A brief explanation of private student loan capital sourcing.

From the perspective of a lender, a loan is an asset. It represents the right to a stream of future payments which may or may not be paid in full or on time. Lenders typically borrow money at a lower rate in order to lend it at a higher rate. The difference or “spread” between these two rates represents the lender’s revenue. Lenders sell loans they have made to capital providers in order to pay back money they have borrowed, book profit, and begin the cycle anew.

Student lenders typically sell their loans in the private capital markets – from domestic and global investors who determine that student loan acquisition is in their investment interest. In order to attract such investors, lenders generally aggregate and package their loans in such a way that the risk and return profiles of these packages are attractive to capital providers. This packaging aims to clarify and reduce risk, and may include pooling, securitization, tranching, insurance, third party ratings, and other specialized packaging techniques.

1. Pooling: Once lenders have originated a large volume of loans, they pool them together. By pooling a group of loans, capital providers who buy the rights to the payment stream associated with that group of loans mitigate their exposure to the uncertainty of any one loan.
2. Securitization: Such pools are then broken into pieces. These pieces are termed student loan asset-backed securities (SLABS) or student loan auction rate securities (SLARS), depending on the manner in which they are sold.¹⁵³ Securitization enables capital providers to gain exposure to returns on large student loan pools with only a small investment.
3. Tranching: Securitized loans are often “tranching.” The stream of capital from the loans will first be paid to those investors who hold the lowest risk (and, typically, lowest return) tranche. Once these investors have been paid, remaining revenue is allocated to the next riskiest tranche, and so on.
4. Insurance: Low risk tranches may also be insured against default using a credit derivative, specialized insurer, or even government guarantee,¹⁵⁴ further lowering their risk of default.
5. Third party ratings: Finally, independent rating agencies rate the likelihood that each tranche of student loans will be paid on time, further informing capital providers’ purchase decision.

¹⁵³ Not all student loans are securitized. Some are sold directly by originators and intermediaries. Others have been structured as auction rate securities. Student loan auction rate securities (SLARS) have been an important structure by which student lenders source capital. Since February of 2008, however, the SLARS market – along with the rest of the ARS market – has “dried up,” with most issuers repurchasing ARS from clients amid an avalanche of lawsuits that continue as of this writing. See (NERA Economic Consulting February, 2008) and (Barlynne 2010).

¹⁵⁴ Some states use municipal bonds, guarantees, and other techniques to attract investors to state-sponsored loans. In addition, universities themselves often guarantee student loans, sometimes borrowing capital directly to finance current students. Such techniques continue to be used, but their future is uncertain. See (Ackerman 2010).

Appendix C: Works Cited

- 109th Congress of the United States of America. "Text of S. 256 [109th]: Bankruptcy Abuse Prevention and Consumer Protection Act of 2005." *govtrack.us*. January 4, 2005. <http://www.govtrack.us/congress/billtext.xpd?bill=s109-256> (accessed July 6, 2010).
- Acemoglu, Daron, and Joshua Angrist. "How Large Are Human-Capital Externalities? Evidence from Compulsory Schooling Laws." *NBER Macroeconomics Annual* 15 (2000): 9-59.
- Acemoglu, Daron, and Joshua Angrist. "How Large are the Social Returns to Education." *NBER Working Papers* (National Bureau of Economic Research), no. 7444 (December 1999).
- Ackerman, Andrew. "Student Loan Law has Lenders Wondering." *The Bond Buyer: the Daily Newspaper of Public Finance*, March 31, 2010.
- Asset-Backed Alert. "ABS Market Statistics." *Asset-Backed Alert: the Weekly Update on Worldwide Securitization*, June 10, 2010.
- Barlyne, Suzanne. "Credit Suisse to Pay \$9.8M in Auction Rate Case." *Dow Jones Newswires*, June 7, 2010.
- Bauerlein, Mark. *Professors on the Production Line, Students on their Own*. Working Paper 2009-01, Washington, D.C.: AEI Future of American Education Project, 2009.
- BBC News. "US Economy Out of Recession." *One-Minute World News*, October 29, 2009: URL: <http://news.bbc.co.uk/2/hi/business/8332773.stm>.
- Becker, Gary. *Human Capital, a Theoretical and Empirical Analysis, with Special Reference to Education*. Chicago: The University of Chicago Press, 1993.
- Blog, Student Lending Analytics. "The \$5.4 Billion Private Student Loan Problem." *Student Lending Analytics*. May 16, 2010. http://studentlendinganalytics.typepad.com/student_lending_analytics/2010/05/the-54-billion-problem.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+StudentLendingAnalyticsBlog+%28Student+Lending+Analytics+Blog%29 (accessed June 10, 2010).
- Bowen, William G., Matthew M. Chingos, and Michael S. McPherson. *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton: Princeton University Press, 2009.
- Brookings. *Budget Deficit*. June 2010. <http://www.brookings.edu/topics/budget-deficit.aspx> (accessed June 15, 2010).
- Bukeley, William M. "'Noble Experiment' Gone Awry." *The Wall Street Journal*, February 23, 1999.
- Bureau of Labor Statistics. *Consumer Price Index*. 2010. <http://www.bls.gov/cpi/> (accessed June 14, 2010).

Burke, Rhonda. "An Option for Financial Aid." *Seminar Series*. Clemson: Clemson University, 2008.

CAE. "Contributions to Colleges and Universities Down 11.9 Percent." *Council for Aid to Education*. February 3, 2010. http://www.cae.org/content/pdf/VSE_2009_Press_Release.pdf (accessed June 10, 2010).

Carroll, Christopher D., and Lawrence H. Summers. "Consumption Growth Parallels Income Growth: Some New Evidence." In *National Saving and Economic Preference*, by B. Douglas and Shoven, John B. Bernheim, 305-348. Chicago: University of Chicago Press, 1991.

Chan, Sewell. "U.S. Economist Dissents, Saying Recession is Over." *The New York Times*, April 12, 2010: B2.

Chapman, Bruce, and Yael Shavit. "A Better Way to Borrow." *Inside Higher Ed*, June 8, 2010: (Views).

Coleman, Liz. "Call to Reinvent Liberal Arts Education." Monterey, CA: The TED Conference, 2009.

College Board. "Price Point: Climbing Walls or Filling Seats." *Towards Higher Ground: New Visions, New Voices for the 21st Century*. Delray Beach, Florida, 2009. 49-61.

collegescholarships.org. *Funding Through My Rich Uncle*. 2003. <http://www.collegescholarships.org/loans/uncle.htm> (accessed May 25, 2010).

Day, Jennifer Cheesman, and Eric C. Newburger. *The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings*. Special Study, Washington, D.C.: U.S. Census Bureau, 2002.

DBRS. *Q1 2010 Private Student Loan Performance Report*. Quarterly, Toronto: DBRS, May 7, 2010.

DBRS. *Q4 2009 Private Student Loan Performance Report*. Structured Finance Performance Report, Toronto: DBRS, 2010.

—. "Direct Student Loan Lender - The U.S. Government." *Structured Finance Newsletter*, April 5, 2010.

—. "Shifting ABS Issuance." *Structured Finance Newsletter*, April 19, 2010.

DBRS. "Student Loan ABS." *Structured Finance Newsletter* (DBRS) 6, no. 6 (February 2010).

DBRS. *U.S. Non-Mortgage Asset-Backed Securities: Select Commentaries*. Toronto, ON: DBRS: Insight beyond the Rating., 2007.

Department of Education Advisory Committee on Student Financial Assistance. *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity*. Washington, DC: U.S. Department of Education Advisory Committee on Student Financial Assistance, 2001.

- Department of Education. *Federal Pell Grant*. 2010. <http://studentaid.ed.gov/PORTALSWebApp/students/english/PellGrants.jsp> (accessed June 10, 2010).
- . *Federal Student Loans - Stafford Loans (FFELs and Direct Loans)*. 2010. <http://studentaid.ed.gov/PORTALSWebApp/students/english/studentloans.jsp> (accessed June 10, 2010).
- . *Federal Work-Study (FWS) Program*. November 23, 2009. <http://www2.ed.gov/programs/fws/index.html> (accessed June 28, 2010).
- . *Student Loan Comparison Chart*. 2010. <http://studentaid.ed.gov/students/attachments/funding/PerkinsLoanInfo.pdf> (accessed June 10, 2010).
- DeSimone, Jeffrey S. "The Impact of Employment during School on College Student Academic Performance." *The National Bureau of Economic Research*, May 2008.
- Education Sector. "Cohort Default Rates: Bad News All Around." *The Quick and the Ed*, December 14, 2009.
- Eicher, Jean-Claude. "The Costs and Financing of Higher Education in Europe." *European Journal of Education* 33, no. 1 (Mar. 1998): 31-39.
- Farrell, Chris. "Should 'Private Equity' Pay for Junior's College?" *Bloomberg Businessweek*, March 19, 2010.
- Federal Reserve Bank of New York. "Term Asset-Backed Loan Facility: Frequently Asked Questions." April 1, 2010. http://www.newyorkfed.org/markets/talf_faq.html#5 (accessed June 15, 2010).
- Federal Reserve Board. *Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances*. Washington, D.C.: U.S. Government Printing Office, 2009.
- FinAid. *Pell Grant Historical Figures*. 2010. <http://www.finaid.org/educators/pellgrant.phtml> (accessed June 8, 2010).
- Fitch Ratings. *Private Education Loans: Time for a Re-Education*. Financial Institutions, U.S.A - Special Report, New York City: Fitch, Inc., 2009.
- Foster, A., and M. Rosenzweig. "Technical Change in Human Capital Return and Investments: Evidence from the Green Revolution." *American Economic Review* 86 (1996): 931-953.
- Friedman, Milton. *Capitalism and Freedom*. Chicago: University of Chicago Press, 1962.
- Friedman, Milton. "Choice, Chance, and the Personal Distribution of Income." *The Journal of Political Economy* 61, no. 4 (Aug. 1953): 227-290.

Friedman, Milton. "The Role of Government in Education." In *Economics and the Public Interest*, edited by Robert A. Solo. New Brunswick: Rutgers University Press, 1955.

Friedman, Milton, and Simon Kuznets. *Income from Independent Professional Practice*. New York: National Bureau of Economic Research, 1954.

Gourinchas, Pierre-Olivier and Parker, Jonathan A. "Consumption over the Life Cycle." *Econometrica* 70, no. 1 (Jan. 2002): 47-89.

Hart, Oliver and John Moore. "A Theory of Debt Based on the Inalienability of Human Capital." *The Quarterly Journal of Economics*, 1994: 841-879.

Hurley, Daniel J. *Considerations for State Colleges and Universities in a Post-Recession America*. Washington, DC: American Association of State Colleges and Universities, November, 2009.

Hurley, Daniel J. *State Outlook: Fiscal and State Policy Issues Affecting Postsecondary Education*. Washington, D.C.: American Association of State Colleges and Universities, 2010.

irs.gov . *Tax Topics: Topic 456 - Student Loan Interest Deduction*. December 18, 2009. <http://www.irs.gov/taxtopics/tc456.html> (accessed July 6, 2010).

Jarboe, Kenan Patrick, and Roland Furrow. "Working Paper #03: Intangible Asset Monetization." *Athena Alliance*. April 2008. <http://www.athenaalliance.org/pdf/IntangibleAssetMonetization.pdf> (accessed July 6, 2010).

Jones, Dennis. *State Shortfalls Projected to Continue Despite Economic Gains; Long-Term Prospects for Higher Education No Brighter*. Issue Paper, Washington, D.C.: The Secretary of Education's Commission on the Future of Higher Education, 2006.

Jones, Dennis, and Jane Wellman. *Rethinking Conventional Wisdom about Higher Education Finance*. Washington, D.C.: Delta Project on Postsecondary Education Costs, Productivity, and Accountability, 2009.

Kahneman, Daniel, and Amos Tversky. "Prospect Theory: an Analysis of Decision Under Risk." *Econometrica*, 1979: 263-292.

Kakaty, Joe, interview by Jeff Wendt. *Q&A with Jeff Wendt* (October 2009).

Kamenetz, Anya. "The 5th Annual Fast 50 - 16. Student Loans." *Fast Company*, January 2006.

Kantrowitz, Mark. *Growth in Cumulative Education Debt at College Graduation*. Student Aid Policy Analysis, FinAid.org, 2009.

Kaplan, David A. "Running a College Like a Business." *Fortune Magazine*, April 28, 2010.

Kurz, Kathy. "Price Point: Climbing Walls or Filling Seats." *Towards Higher Ground: New Visions, New Voices for the 21st Century*. Delray Beach, Florida, 2009. 49-61.

- Lane, Randall. "Colsobs." *Forbes*, 1996: 44-45.
- Lewin, Tamar. "University of California Makes Cuts After Reduction in State Financing." *New York Times*, July 10, 2009.
- Lexington Institute. "November 5 Policy Forum: "The Future of Student Loans: A Policy Dialogue"." *Recorded Transcript*. Washington, DC: Lexington Institute, 2009.
- Mankiw, N.G., Romer, D, and Weil, D.N. "A Contribution to the Empirics of Economic Growth." *Quarterly Journal of Economics*, no. 107 (1992): 407-437.
- Mincer, Jacob. "Human Capital and the Labor Market." *Educational Research* 18, no. 4 (1989): 27-34.
- Mincer, Jacob. "Investment in U.S. Education and Training." *NBER Working Paper No. 4844*, 1994.
- Mishel, Lawrenche, Bernstein, Jared, and Allegretto, Sylvia. *The State of Working America 2006/2007*. The Economic Policy Institute, Ithaca: ILR Press, 2007.
- MRU Holdings. "MRU Holdings, Inc. Announces Economics on \$200 Million Private Student Loan Portfolio." *shareholder.com*. July 9, 2007.
<http://files.shareholder.com/downloads/MHOI/0x0x117294/2caddcc6-89e5-4563-97b4-03d3e866a56d/252643.pdf> (accessed July 6, 2010).
- MRU Holdings, Inc. *MyRichUncle Continues Its Momentum in Student Loan Industry by Launching the First-Ever True Student Loan*. Press Release, New York: MRU Holdings, Inc., 2006.
- Murray, Sheila E., Rueben, Kim, and Rosenberg, Carol. "State Education Spending: Current Pressures and Future Trends." *National Tax Journal*, 2007: 325-345.
- National Advisory Committee on Affordability. *Losing Ground: a National Status Report on the Affordability of American Higher Education*. San Jose, CA: The National Center for Public Policy and Higher Education, 2002.
- National Bureau of Economic Research Business Cycle Dating Committee. *US Business Cycle Expansions and Contractions*. April 12, 2010. <http://www.nber.org/cycles/cyclesmain.html> (accessed July 8, 2010).
- National Center for Education Statistics. *2008 Digest of Education Statistics, Table 220*. Washington, D.C.: NCES, 2008.
- National Center for Education Statistics. *Dealing with Debt: 1992-93 Bachelor's Degree Recipients 10 Years Later*. Postsecondary Education Descriptive Analysis Report, Washington, D.C.: US Department of Education, 2006.
- National Center for Education Statistics. *Digest of Education Statistics, 2009*. Table 190, Washington, D.C.: NCES, 2009.

- National Center for Education Statistics. *Projections of Education Statistics to 2018*. Washington, DC: NCES, 2008.
- NERA Economic Consulting. *Research Primer: Student Loan Auction Rate Securities*. New York, NY: Alacra, February, 2008.
- NextStudent Student Loan Blog. *Proposed Legislation Allows Discharge of Student Loans in Bankruptcy*. May 4, 2010. http://www.nextstudent.com/student-loan-blog/blogs/sample_weblog/archive/2010/05/04/Proposed-Legislation-Allows-Discharge-of-Private-Student-Loans-in-Bankruptcy.aspx (accessed July 6, 2010).
- Noah, Timothy. "Yalie Crybabies." *Slate Magazine*, February 23, 1999.
- Oosterbeek, Hessel. "An Economic Analysis of Student Financial Aid Schemes." *European Journal of Education* 33, no. 1 (1998): 21-29.
- Oreopolous, Philip and Salvanes, Kjell G. "How Large are Returns to Schooling? Hint: Money Isn't Everything." *NBER Working Paper Series* (National Bureau of Economic Research), no. 15339 (September 2009).
- Palacios, Miguel. "Human Capital Contracts." *Policy Analysis*, no. 162 (2002).
- . *Investing in Human Capital*. Cambridge: Cambridge University Press, 2004.
- Palacios, Miguel. *Options for Financing Lifelong Learning*. The World Bank Policy Research Working Paper 2994, Washington, DC: The World Bank Human Development Network, 2003.
- Paying for College Blog. "SLA Estimates \$5.8 - \$7.1 Billion Drop in Private Lending Capacity." *Student Lending Analytics*. November 6, 2008. http://studentlendinganalytics.typepad.com/student_lending_analytics/2008/11/assessing-the-damage-the-private-loan-gap.html (accessed June 15, 2010).
- PCS. *Beyond California*. Washington, D.C.: Pew Center on the States, November, 2009.
- Plucker, Jonathan A., Burroughs, Nathan and Song, Ruiting. *Mind the (Other) Gap: the Growing Excellence Gap in K-12 Education*. Bloomington, IN: Center for Evaluation & Education Policy, 2010.
- PRNewswire-FirstCall. "MRU Holdings Announces Pricing of \$140 MM Private Student Loan Securitization Transaction." *News Blaze*, July 7, 2008.
- Project on Student Debt. *IBRinfo*. 2010. <http://www.ibrinfo.org/about.vp.html> (accessed June 24, 2010).
- Public Agenda. *With Their Whole Lives Ahead of Them*. A Public Agenda Report for the Buill & Melinda Gates Foundation, San Francisco, CA: Public Agenda, 2009.

Rockefeller Institute of Government. *Overall State Tax Revenue is Up, But Losers Still Outnumber Gainers*. State Revenue Flash Report, The University of Albany, Albany, NY: The Nelson A. Rockefeller Institute of Government , 2010.

Roza, Marguerite. *Now is a Great Time to Consider the Per Unit cost of Everything in Education*. Paper presented at January 11, 2010 Conference entitled "A Penny Saved: How Schools and Districts Can Tighten Their Belts While Serving Students Better", Washington, D.C.: American Enterprise Institute for Public Policy Research , 2010.

Schevitz, Tanya. "'Rich Uncle' Bankrolls Students - for a Price / Grads Owe Percentage of Future Paychecks." *San Francisco Chronicle*, February 18, 2003.

Shiller, Robert J. *Macro Markets*. Oxford: Oxford University Press, 1998.

Shiller, Robert J., and Ryan Schneider. *Labor Income Indices Designed for Use in Contracts Promoting Income Risk Management*. Cowles Foundation Discussion Paper No. 1110, New Haven: Cowles Foundation for Research in Economics at Yale University, 1995.

Shiller, Robert. *The New Financial Order: Risk in the 21st Century*. Princeton: Princeton University Press, 2003.

SLM Corporation. *Q1 2010 Investor Presentation*. Accessible through the SEC's Edgar database at <http://www.sec.gov/Archives/edgar/data/1032033/000095012310046478/w78417fwp.htm>, Reston, VA: SLM Corporation, 2010.

Taleb, Nassim Nicholas. *The Black Swan*. 2. New York: Random House, 2010.

The Delta Cost Project. *Trends in College Spending: Where does the Money Come From? Where does it Go?* Washington, DC: The Delta Cost Project, 2009.

The Education Trust. *Charting a Necessary Path: the Baseline Report of Public Higher Education Systems in the Access to Success Initiative*. Washington, D.C.: The Education Trust, in association with the National Association of System Heads, 2009.

The Pew Center on the States. *The Trillion Dollar Gap: Underfunded State Retirement Systems and the Roads to Reform*. Washington, D.C.: The Pew Center on the States, 2010.

The Project on Student Debt. *Private Loans: Facts and Trends*. Oakland, CA: The Project on Student Debt, 2009.

The Project on Student Debt. *Student Debt and the Class of 2008*. Washington, D.C.: The Project on Student Debt , 2009.

U.S. PIRG. *Issues: Affordable Higher Education*. 2010. <http://www.uspirg.org/higher-education> (accessed June 8, 2010).

Walker, David. "Comeback America: Turning the Country Around and Restoring Fiscal Responsibility." San Francisco, California, January 25, 2010.

Wikipedia. *My Rich Uncle*. May 25, 2010. <http://en.wikipedia.org/wiki/MyRichUncle> (accessed May 25, 2010).

Williams, Gareth. "Current Debates on the Funding of Mass Higher Education in the United Kingdom." *European Journal of Education* 33, no. 1 (Mar. 1998): 77-87.

Yale University. *Yale Tuition Postponement Option*. Background Detail for Release Morning Papers, New Haven: Yale University, 1971.

Additional References

Carnevale, Anthony P., Nicole Smith and Jeff Strohl. (2010, 11 June) *Help Wanted: Projections of Jobs and Education Requirements Through 2018*. Washington DC USA: Center on Education and the Workforce, Georgetown University.

Francesca Di Meglio, Francesca.. (2010: 28 June). *College: Big Investment, Paltry Return*. New York NY USA: Bloomberg Businessweek. Retrieved from www.businessweek.com/bschools/content/jun2010/bs20100618_385280.htm.

Kantrowitz, Mark. (2010, 6 July). *Adjusting Default Rates According to Borrower Demographics*. New York NY USA: Monster Worldwide Inc. [Fastweb.com]. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/MNSTR_US/F100706K.pdf.

Kantrowitz, Mark. (2010, 28 Jun) *Blending US Bureau of Labor Statistics Occupation Wage Data with US Census Bureau Income by Educational Attainment Data*. New York NY USA: Monster Worldwide Inc. [Fastweb.com]. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/MNSTR_US/F100628K.pdf.

Kantrowitz, Mark. (2010, 15 July) *Default Rates by Institution Level vs. Degree Program*. New York NY USA: Monster Worldwide Inc. [Fastweb.com]. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/MNSTR_US/F100715K.pdf.

Kantrowitz, Mark. (2010, 17 August) *Relationship of Default Rates to Debt and Income*. New York NY USA: Monster Worldwide Inc. [Fastweb.com]. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/MNSTR_US/F100817K.pdf.

Kantrowitz, Mark. (2010, 20 October) *Summary of Gainful Employment Policy Analysis Papers*. New York NY USA: Monster Worldwide Inc. [Fastweb.com]. Available from www.immagic.com/eLibrary/ARCHIVES/GENERAL/MNSTR_US/F101020Kpdf.

PayScale, (2010: 28 June) *Which Colleges Are Worth Your Investment? Don't Compare College Costs, Compare the Return on Your Investments*. Seattle WA USA: PayScale Inc. [With unpublished data, see www.immagic.com/eLibrary/General/PAYSC_US/P100628R.pdf].

Zheng, Yan and Dan Hix. (2010/28 July). *2010-11 Tuition and Fees at Virginia's State-Supported Colleges and Universities*: Richmond VA USA: State Council of Higher Education Virginia.