

# **The Global Viability of Human Capital Contracts**

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## Statement of Purpose

The purpose of this paper is to examine whether human capital contracts (HCCs) can serve as viable options for financing higher education, and, if so, to determine how to best create an environment in which HCCs can be used effectively. Human capital contracts, initially proposed by Milton Friedman, are equity-like investments in which investors give students capital to finance their education in return for a portion of their future income over a given time period. If used, these could dramatically change the traditional structure of student loans, helping to address the problem of how to best finance higher education. To begin, it is important to address the value of higher education and to determine the accessibility of higher education around the globe.

Higher education is one of the most important things an individual can attain, as those who pursue higher education benefit economically, socially, and in terms of their mental and physical well-being. The most obvious reason to pursue higher education is arguably economic, as college graduates enjoy higher average incomes and lower unemployment rates compared to individuals who do not attend college.<sup>1</sup> Beyond this binary completed vs. did not complete college distinction, there is also a continuous correlation between years of education and the extent of the aforementioned measures, meaning that a greater amount of education is usually correlated with an increase in expected income and a decrease in unemployment.<sup>2</sup> Beyond the economic benefits, there are other advantages of going to college. Students are able to acquire a wealth of knowledge, challenge their beliefs, make unforgettable friends and connections, and discover their passions, among a host of other factors tied to coming-of-age. Indeed, a 2012 survey in Uxbridge, England found that people show a great affection for the time they spent at college, with three out of five people wishing to relive their college years.<sup>3</sup> Even more broadly, the Pew Research Center has found that overall happiness is correlated with educational attainment.<sup>4</sup>

Higher education also provides a number of health benefits, both mental and physical. Unemployment, reduced by higher education, poses a heavy mental health burden on individuals. Those who have attended college are more likely to perceive themselves to be in excellent or very good health.<sup>5</sup> And the discrepancies extend

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<sup>1</sup> [http://www.bls.gov/emp/ep\\_chart\\_001.htm](http://www.bls.gov/emp/ep_chart_001.htm)

<sup>2</sup> Ibid

<sup>3</sup> <http://www.dailymail.co.uk/femail/article-2216564/University-days-important-wedding-having-baby.html>

<sup>4</sup> <http://www.pewsocialtrends.org/2006/02/13/are-we-happy-yet/29-3/>

<sup>5</sup> NCES, 2004, Indicator 12 (based on National Health Interview Survey, National Center for Health Statistics, 2001)

beyond self-perception; education levels are also correlated with levels of healthy and unhealthy behavior. For example, college graduates are less likely to smoke or be incarcerated.<sup>6</sup> On the other end of the spectrum, workers with a low education level are more likely to need disability retirement and sick leave, due in part to a more unhealthy lifestyle as well as a more hazardous work environment.<sup>7</sup>

The economic, personal, and health benefits of education also extend from the individual to the societal level. When individuals earn more, they contribute more to government tax revenue. In addition, with lower levels of unemployment, ill health, and poverty, there is a decrease in the amount of people supported by government welfare programs. Well-educated people are more involved in their community: they vote, volunteer, and donate blood at higher rates than others.<sup>8,9,10</sup> Their children are more likely to be read to and have access to enriching educational experiences, which means that they often have higher cognitive skill levels and can concentrate more easily.<sup>11</sup> An individual's exposure to new ideas and knowledge during college is also invaluable to the propagation of more healthy social norms. For example, political scientists argue that education will be instrumental in the fight for women's rights and in changing gender roles.<sup>12</sup>

Considering how much value higher education provides to all involved, it is clear that it is vital for it to be very accessible to people in society. However, in many countries, there are numerous obstacles that people face to achieving higher education, and many revolve around the problem of finances. As further analyzed later in this report, the countries that were examined had problems with the accessibility of higher education that disproportionately affected people of low socioeconomic backgrounds. For example, in Chile, there is a noticeable gap between university attendance based on socioeconomic status.<sup>13</sup> The United States, Australia, Brazil, and Germany also have similar issues to varying degrees. Moreover, issues with financing education are growing due to rising tuitions whose growth outstrips that of inflation.<sup>14</sup> Because of the limitations in access to education that some people face, it is important to examine ways to change the financing system for higher education. So, this report focuses on if and how human capital contracts can address this problem.

## HCCs: Theoretical Underpinnings

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<sup>6</sup> [http://www.collegeboard.com/prod\\_downloads/press/cost04/EducationPays2004.pdf](http://www.collegeboard.com/prod_downloads/press/cost04/EducationPays2004.pdf)

<sup>7</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3722458/>

<sup>8</sup> <https://www.census.gov/prod/2004pubs/p20-552.pdf> U.S. Census Bureau, 2002b, Table A-2

<sup>9</sup> [http://www.bls.gov/news.release/archives/volun\\_12172003.pdf](http://www.bls.gov/news.release/archives/volun_12172003.pdf),

<sup>10</sup> DDB Worldwide, 2002.

<sup>11</sup> [http://www.collegeboard.com/prod\\_downloads/press/cost04/EducationPays2004.pdf](http://www.collegeboard.com/prod_downloads/press/cost04/EducationPays2004.pdf)

<sup>12</sup> <http://tre.sagepub.com/content/4/1/69.full.pdf+html>

<sup>13</sup> <http://www.universityworldnews.com/article.php?story=20131219150048533>

<sup>14</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

One approach to increasing access to higher education is by using HCCs. HCCs can improve student access to higher education and reduce currently onerous student debt burdens by realigning market structures to benefit all key members. Namely, students, universities, and investors could all benefit under an HCC system. However, it is also important to note that banks are a stakeholder in the present situation who would be hurt by HCCs and would likely oppose their widespread adoption. Furthermore, there are important downsides to consider for each party which must be weighed against the benefits or addressed before implementation could take place.

### **Stakeholder Analysis:**

#### Students

For students, HCCs produce numerous benefits. Firstly, HCCs increase access for student funding, allowing students to get a loan when they otherwise could not. This is especially true in countries where there is lower access to credit than in the United States. And beyond simply creating a larger pool of available funds, HCCs also allow a broader range of students to access these funds. Since traditional loan agreements are based on things like present availability of collateral (which poorer students do not have) and the loan-seeker's credit rating (which school-age people often have not had time to develop), traditional loan systems can be quite restrictive. On the other hand, by considering the student's future earning potential in determining whether they will get a loan, HCCs allow students to use future strengths to overcome current deficiencies.

Beyond increasing access, HCCs can also provide a better deal to students than traditional student loans, particularly for students whose income is "high-variance." If a student feels unable to make an accurate prediction regarding their career interests and/or their likely income, taking a traditional loan can be prohibitively risky. Because these loans lock students into fixed-size payments, a change in the student's interests to a lower-income field or a larger economic issue such as a weak job market can cause the previously viable loan agreement to become untenable. In turn, this leads to an extremely burdensome and often lengthy repayment process, as well as high rates of default that damage the student's credit score and hurt the student, the bank, and the economy as a whole. Thus, taking a loan from a bank to fund education – as opposed to a loan for a more predictable asset, such as purchasing a home – is a risky decision, particularly for students who are unsure about their future plans. For these students then, HCCs can be very valuable. By tying repayment to income, students gain the freedom to pursue whatever interests them – and whatever salary comes with it – without their repayment taking up an unexpectedly high and overly burdensome percentage of their income. Moreover, they thus have no possibility of default, meaning they do not risk damaging their credit score. Thus, students gain flexibility and achieve a

successful transfer of risk to a party better equipped to handle it: the investor. (Since the investor can spread out their investment over many students as well as across other types of investments, and also because the investor is likely in a more financially stable period of life, their risk is considerably lower than for a student betting on themselves by taking out a loan).

Finally, HCCs can help clarify for students the value proposition of pursuing higher education. Since successful HCC models would rely on data about the economic value of different universities and fields of study, the proliferation of HCC agreements would incentivize more accurate and comprehensive collection of this data. In turn, this data might either become publicly available (if collected by a government agency), or would at least be visible to students implicitly in the offers they receive from an HCC company. For example, a student at present may have a hard time choosing between two schools which have different tuitions and whose precise impact on future earnings are unclear. However, if the student then receives HCC offers for attending each school, the quality of this offer – in terms of the percentage of income it demands the student repay – provides the student with a clear indicator of the market's opinion of each school's value. Thus, the student's decision can be simplified and can be made more accurately (assuming a decision made purely for economic reasons). Moreover, this clarity for the student will drive students towards schools which provide the best value for their tuition, in turn creating an incentive for schools to keep their tuitions competitive and thus making higher education even more accessible. (However, it is important to note that even though HCCs would increase access and transfer risk regardless of the issue of tuition, the question of whether HCCs would actually cause tuitions to rise or fall is currently under debate. For more information, see the links provided in the "Unanswered Questions" section at the end of this paper).

Despite these numerous benefits, there is also one obvious drawback for students: if they go on to make more money than they anticipated (an admittedly difficult thing to predict before even starting college), they may end up paying back much more than if they had taken a fixed loan. However, this issue can be mitigated through clauses which allow the student to buy themselves out of the contract early on or which specify that the debt obligation ends once some figure has been reached (such as 150% of the original loan value).

### Investors

For investors, there are two main avenues of benefit. Most obviously, a model which can successfully predict a student's income and propose an appropriate contract will allow investors to tap into a vast, valuable pool of human capital and earn a solid return. With demand for education being a steady feature of society, combined with effective grouping of students to pool risk, investors should be able to incorporate HCCs into their portfolio as a low-risk, low-to-medium reward

investment. For example, Lumni, a company that invests in HCCs currently, gets<sup>15</sup> more than a 10% return on its investments with less than a 3% default rate.

In addition to this obvious financial benefit, HCCs could appeal to investors who are philanthropically oriented. Beyond traditional HCC funds which are set up to earn the investor a profit, alternative funds could also be set up to fund students while the investor breaks even or takes a small loss. The benefit of these funds for interested donors lies in the fact that they could fund a greater amount of students with the same amount of money, since students whose education is funded for them and then go on to make a large salary do have the ability to pay this money back in a non-burdensome way, but they currently have no obligation to. To illustrate with an example, consider a person who donates \$20,000, which will fund \$1000 of tuition for 20 students under traditional scholarship systems. On the other hand, if \$20,000 were given to fund human capital contracts and each student paid back only \$500, the money could now finance 40 students. And since the repayment that is used to fund the additional students comes from taking only a small percentage of income, more students can benefit without any of them being overly burdened.

In spite of these potential advantages, many impediments exist before these benefits could be fully realized. Firstly, there are likely to be difficulties with contract enforcement, both globally and within the United States. Internationally, student mobility poses a challenge: if a student moves outside the country within which the contract was signed, it is difficult to keep track of the student, and the investor must rely on the student's goodwill. Furthermore, regulation on investments differs between countries. These issues may require a legal arrangement between the student's former and current country. Other solutions include a third-party (example: parents) mechanism, or some other extra protection from other countries' unstable legal systems for investors, especially since courts may declare a human capital contract null.<sup>16</sup> Within the United States, human capital contracts (HCCs) face interstate and bankruptcy challenges – the two legal barriers that stopped one company, Human Capital Resources, in the 1990's. Certain states prohibit the assignment of future income, so HCC validity can be challenged in court, where the ruling's outcome is uncertain. In addition, human capital contracts are not protected from bankruptcy laws, unlike traditional student loans (where students cannot disavow obligations to lenders even under bankruptcy for seven years after graduation).<sup>17</sup> Thus, HCCs are a risky and less attractive investment.

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<sup>15</sup> <http://www.lumni.net/forpotentialinvestors/>

<sup>16</sup> [https://books.google.com/books?id=1fXBI3y8\\_QAC&pg=PA119&lpg=PA119&dq=difficult+investor+human+capital+contract&source=bl&ots=CE8JKI5zTy&sig=qSbDYk2gOil7CXUMSEW8IXK-Mvc&hl=en&sa=X&ved=0ahUKEwiRvqTKwq\\_JAhWG2D4KHTCACYQ6AEIPDAF#v=onepage&q=difficult%20investor%20human%20capital%20contract&f=false](https://books.google.com/books?id=1fXBI3y8_QAC&pg=PA119&lpg=PA119&dq=difficult+investor+human+capital+contract&source=bl&ots=CE8JKI5zTy&sig=qSbDYk2gOil7CXUMSEW8IXK-Mvc&hl=en&sa=X&ved=0ahUKEwiRvqTKwq_JAhWG2D4KHTCACYQ6AEIPDAF#v=onepage&q=difficult%20investor%20human%20capital%20contract&f=false)

<sup>17</sup> <http://object.cato.org/sites/cato.org/files/pubs/pdf/pa462.pdf>

Another issue for investors, both domestically and abroad, lies in tracking students' income to ensure they repay the proper amount.<sup>18</sup> Students have an incentive to hide and postpone earnings during the repayment period. Also, some sources of income are "noncash"; investor face challenges in obtaining records of these.<sup>19</sup> Furthermore, the question of what will be considered "income" must be clearly spelled out in all contracts – for example, will windfalls from inheritance, capital gains, gifts, etc. fall under income?

Finally, federal regulations impose qualifications on interested investors. HCCs are a type of investment typically classified as a "security," meaning they are subject to regulation of federal securities laws<sup>20</sup>. The United States Securities Act of 1933 mandates that a company selling its securities must register the securities with the Securities and Exchange Commission (SEC) or find an exemption from the registration requirements. Some exceptions include companies that sell securities to "accredited investors"<sup>21</sup>. This vastly shrinks the number of eligible, available investors, causing difficulty for some HCC companies, such as former HCC providers Pave and Upstart, in obtaining investors who are legally classified as "accredited."<sup>22</sup>

However, it is important to remember that these issues are not problems with HCCs in theory but rather in implementation. Thus, an extensive effort to implement HCCs which also tackled these problems could readily create an investor-friendly environment. The fundamental idea of investing in human capital to earn a return is both financially viable and socially beneficial.

### Universities

With respect to universities, the effects of HCCs are less clear, with a more equal and school-specific distribution of pros and cons. Many schools are able to provide only small amounts of financial aid themselves, and thus require students to take out private loans to attend. Knowing this, many universities – at least in the United States – have invested in student loan financing services such as Sallie Mae. Sallie Mae is the largest private loan lender in America, and earns large profits by placing high interest rates on loans and not refinancing high-rate loans after graduating students get high-salary jobs.<sup>23</sup> In turn, Universities have an incentive to "double

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[https://books.google.com/books?id=1fXBI3y8\\_QAC&pg=PA119&lpg=PA119&dq=difficult+investor+human+capital+contract&source=bl&ots=CE8JKI5zTy&sig=qSbDYk2gOil7CXUMSEW8IXK-Mvc&hl=en&sa=X&ved=0ahUKEwiRvqTKwq\\_JAhWG2D4KHTCACYQ6AEIPDAF#v=onepage&q=difficult%20investor%20human%20capital%20contract&f=false](https://books.google.com/books?id=1fXBI3y8_QAC&pg=PA119&lpg=PA119&dq=difficult+investor+human+capital+contract&source=bl&ots=CE8JKI5zTy&sig=qSbDYk2gOil7CXUMSEW8IXK-Mvc&hl=en&sa=X&ved=0ahUKEwiRvqTKwq_JAhWG2D4KHTCACYQ6AEIPDAF#v=onepage&q=difficult%20investor%20human%20capital%20contract&f=false)

<sup>19</sup> <http://object.cato.org/sites/cato.org/files/pubs/pdf/pa462.pdf>

<sup>20</sup> <http://www.cardozolawreview.com/content/36-4/VOGEL.36.4.pdf>

<sup>21</sup> <http://www.sec.gov/answers/accred.htm>

<sup>22</sup> <http://www.cardozolawreview.com/content/36-4/VOGEL.36.4.pdf>

<sup>23</sup> [http://www.huffingtonpost.com/2013/05/09/sallie-mae-student-loans\\_n\\_3247979.html?ir=College](http://www.huffingtonpost.com/2013/05/09/sallie-mae-student-loans_n_3247979.html?ir=College)

profit.” First, they increase the cost of tuition, getting more money from those who can pay and causing those who cannot to take out larger loans. Then, they collect dividends on their holdings in loan financing companies that profit from interest on student loans.<sup>24</sup> Since HCCs would reduce the number of student loans, universities might have an incentive to oppose them and protect their investment in firms like Sallie Mae. (It could be argued that universities could just invest in the HCC companies and effectively replicate the current system, but these companies would likely not be as profitable as Sallie Mae, at least not initially.)

However, HCCs could provide benefits to at least some universities. Universities with large endowments often provide significant amounts of financial aid themselves (through scholarships, grants, or non-profit loans) as opposed to having students take out private loans. Thus, for these schools, the provision of aid money by investors in an HCC program would free up significant funding for the university. For example, Yale University has an endowment of nearly \$24 billion, and as such can fund all financial aid through grants and no-interest loans. Nearly 52% of Yale students receive financial aid, with the average aid gift being \$41,250.<sup>25</sup> With an undergraduate enrollment of 5,453, this means that Yale provides ~\$117,000,000 annually in financial aid, making up a significant portion of the University’s annual operating budget.<sup>26</sup> While Yale is an outlier in terms of the extent to which its endowment can cover financial aid costs, many universities bear at least some of the burden of providing aid to students, so this incentive to pass these costs onto investors and free up money for spending on faculty, buildings, research, etc. could be a powerful incentive for many schools.

### Banks

Banks are the one stakeholder in the current system for whom HCCs would be largely negative. Currently, when students cannot afford education or get sufficient funding from government sources, they often turn to private lenders, especially banks. In turn, banks profit from these loans, particularly because students often have worse credit and so are charged high interest rates (often well over 10%).<sup>27</sup> Furthermore, the fact that students cannot disavow their student loan debt through bankruptcy means that banks can charge high interest rates *and* have lowered risk of not being paid back, making student loans a very valuable asset for banks.

Since the introduction of HCCs would likely lead to a reduction in these valuable loans, banks can be expected to oppose widespread HCC use. A similar

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<sup>24</sup> [http://www.washingtonmonthly.com/college\\_guide/blog/whos\\_getting\\_rich\\_off\\_student.php](http://www.washingtonmonthly.com/college_guide/blog/whos_getting_rich_off_student.php)

<sup>25</sup> <http://admissions.yale.edu/faq/financial-aid#t189n2257>

<sup>26</sup> <http://oir.yale.edu/yale-factsheet>

<sup>27</sup> <http://www.usnews.com/education/best-colleges/paying-for-college/student-loan/articles/2010/08/17/private-student-loans-frequently-asked-questions#1>

example of banks opposing conditions that would lead to a reduction in loan volume comes from the recent past. Between 2010-11 and 2014-15, borrowing from the federal subsidized loan program – loans which the banks helped administer in exchange for government subsidies – decreased by 44%.<sup>28</sup> This drop can be partially explained by the Health Care and Education Reconciliation Act of 2010, which started the policy of the federal government offering the loans directly, without private bank administration.<sup>29</sup> When the switch was proposed, there was backlash from private-loan industry officials, who “warned that [this new legislation] would eliminate competition and create chaos for colleges and students that now use private lenders as they are forced to switch to a fully government-run system.”<sup>30</sup> Similar to this example, it can be deduced that private lenders would also oppose human capital contracts, as HCCs would represent further lost profit.

<b>Implementation of HCCs</b>			
<b>Students</b>	<b>Investors</b>	<b>Universities</b>	<b>Banks</b>
<ul style="list-style-type: none"> <li>❖ Increased access to credit</li> <li>❖ Increased flexibility to pursue career interests</li> <li>❖ Reduced loan risks</li> <li>❖ Greater ability to value college degrees</li> <li>❖ Could end up paying more than a standard loan</li> </ul>	<ul style="list-style-type: none"> <li>❖ Alternative low-risk, medium reward profit-avenue</li> <li>❖ Improved options for philanthropy</li> <li>❖ Hold a greater proportion of risk on a low-risk loan</li> </ul>	<ul style="list-style-type: none"> <li>❖ Greater access to endowment funds</li> <li>❖ Lose the ability to profit from investments in traditional, private loans</li> </ul>	<ul style="list-style-type: none"> <li>❖ Less lending to students</li> <li>❖ Lower profits from student loans brought on by competition</li> </ul>

*Summary of the benefits and drawbacks for each key stakeholder following HCC implementation*

## HCC's In Practice: Yale's Tuition Postponement Option

One of the first attempts to implement income-contingent loans for higher education occurred at Yale University about four decades ago. Beginning in 1971, Yale instituted the Tuition Postponement Option (TPO) as an alternative to student loans. The idea was the brainchild of the Yale administration in concert with faculty member and Nobel Prize-winning economist James Tobin. The TPO allowed students to borrow any amount from the University to cover tuition, room, and board (which cost ~\$6,500 per year) with the condition that the loan must be paid back with respect to one's income — 4% of annual income for every \$1,000

<sup>28</sup> Ibid

<sup>29</sup> <http://www.studentdebtrelease.us/forgiveness/obama-student-loan-forgiveness/>

<sup>30</sup> <http://www.nytimes.com/2009/07/11/education/11educ.html>

borrowed (plus interest). In an effort to pool risk, students paid off debt as a group and so those who paid 150% of what was borrowed (the higher-income students) were able to buy out of the system while others continued to pay portions of income until the group debt was repaid. About 3,300 students signed on to the TPO in 1971 and although the program ultimately failed and was discontinued in 1978, alumni were only free of the obligation in 2001.<sup>31</sup>

## Problems with the TPO

The failures of the TPO provide valuable insights into HCC viability and can be broken up into four major problems: economic climate, adverse selection, tracking, and societal norms.

### Economic Climate:

Between the years of 1973 and 1975, the US (and much of the Western world) suffered an economic recession caused by oil and steel crises among other factors. According to the National Bureau of Economic Research (NBER), the recession was longer and more severe than any of the five recessions before it (between 1948 and 1970) but the most serious part was brief lasting about six months. This time was marked by stagflation with unemployment peaking in 1975 at 9%. This unemployment, coupled with high interest rates and high inflation, caused real incomes to decrease and job searchers to face hardship.<sup>32</sup> Given this economic climate, it is not surprising that 15% of the participants in the TPO defaulted and that those who remained in the system faced not only a proportionally greater burden but also a relative inability to pay as a group.<sup>33</sup>

### Adverse Selection:

As an alternative loan program which students voluntarily opted into, the TPO suffered from adverse selection. Adverse selection is an issue of informational asymmetry which makes it difficult to control risk and appropriately price an asset. In the case of the TPO, the optionality of the program meant that students – who have more information about their career interests and earning potential than the University – who chose to opt-in were those who predicted that they would go on to earn lower incomes, making an income-contingent loan a more attractive option than a loan with fixed repayment quantities. Thus, adverse selection gave the TPO a precarious foundation, as the 4% of annual income per \$1000 borrowed was insufficient to cover repayment due to the group's low average income.

Compounding this issue of adverse selection was the fact that students could “buy out” of the system at any time after graduation. This meant that even students

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<sup>31</sup><http://yaledailynews.com/blog/2001/03/27/70s-debt-program-finally-ending/>

<sup>32</sup><http://www.nber.org/chapters/c9101.pdf>

<sup>33</sup> Woodhall, Maureen. "Funding Higher Education: The Contribution of Economic Thinking to Debate and Policy Development." *The World Bank: Education Working Paper Series* 8 (2007): 30. Print.

who chose to enter the TPO and did go on to earn large salaries quickly exited the pool, leaving a further diminished group of continued debtors.<sup>34</sup> As discussed above, the harsh economic climate in the mid-1970's caused unemployment and interest rates to rise, leading to an increased debt burden. Ultimately then, the pool of students was high risk from the beginning and was weakened by the exit of high-earning students, and the remaining students struggled to pay the group debt due to their low incomes and the harsh economic climate.

#### Tracking:

Even for students who remained in the pool and did earn sufficient incomes, another issue for repayment in the TPO was tracking and collecting students' income for years after graduation. Yale attempted to track incomes by having students send in tax documents each year, but as the amount of students participating in the program grew, and as time passed since graduation, collection became increasingly difficult. Collection was also hindered simply by the TPO's era, as tracking and communicating with alumni was much more difficult than in the modern day.

#### Societal Norms:

Finally, a significant issue for the TPO was a prevailing social norm that parents should bear the burden of financing college education, as opposed to students being asked to repay through future income. According to Sam Chauncey, the special assistant to the University president and an administrator at the forefront of the TPO's implementation, Yale was aware from the start of systemic issues such as tracking, collection, and the exceedingly large total debt necessary to fund a growing group of students, and so the University never planned to maintain the program on its own in perpetuity. Rather, the plan was to provide an example to other universities of the potential of income-contingent repayment systems, such that the system would spread and ultimately help convince the Federal Government to consider implementing a similar system on a national level. With the government taking over, Yale was confident that issues with collection and managing such a massive debt could be mitigated. However, this designed flow from Yale to other universities to the national government was derailed by the hesitancy of other schools to follow in Yale's footsteps. According to Mr. Chauncey, this reluctance was tied not only to questions of financials but also to social issues. In particular, administrators at other universities believed that implementing income-contingent loan programs would reduce their school's appeal by going against social norms and shifting the debt burden from parents to students.<sup>35</sup>

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<sup>34</sup> See Footnote 33

<sup>35</sup> "Interview with Mr. Sam Chauncey." Personal interview. 13 Nov. 2015.

Ultimately, Yale University's attempt to implement income-contingent loans in the 1970's is instructive with regards to the key features underlying the viability of income-contingent systems such as HCCs. As the failures of the program demonstrate, adverse selection is a crucial issue which must be addressed in any system where repayment will be tied to income, and having the infrastructure to track incomes and ultimately collect these repayments is equally critical. Furthermore, the TPO serves as a valuable example of how social issues – not just economic – must also be considered when analyzing the viability of an HCC system. Key social issues such as whether or not citizens perceive education as a right which should be provided by the government, and if not, which group in society should bear the costs of higher education, play a large role in determining whether HCCs are appropriate and will be successful in any given context.

## **HCC's in Modern Contexts: Case Study Analyses**

In this section, we briefly review the educational climate in five countries – the United States, Chile, Australia, Germany, and Brazil – with an eye towards the accessibility of education in that country, its importance for economic success, and the current sources of educational funding. In light of this context, we then provide analysis regarding the suitability of HCCs for that country, with this analysis not only being specific to the given country but also shedding light on the broad conditions which make HCCs viable and useful or infeasible and unnecessary.

### **United States**

#### ***Context***

Educational attainment is a significant factor in the financial success of Americans, affecting both employment rates and earnings. Data from the U.S. Bureau of Labor Statistics collected in 2014 demonstrate that full-time wage and salary workers' median weekly earnings increase with higher educational attainment level. Professional degree-holders top the median weekly earnings list, earning \$1,369 per week (nearly double the \$839 national average). A bachelor's degree places one well above average at a median \$1,101 per week. Interestingly, even some college experience (without graduating) is advantageous: the "some college" workers' median income is \$73 per week higher than those with no college experience. This difference amounts to nearly \$4000 more per year. At the bottom, those with less than a high school diploma earn a median \$488 per week, and high school diploma-holders fare better, though not nearly as well as degree-holders, at \$668 per week.<sup>36</sup>

Beyond income, unemployment also decreases with greater level of educational attainment. Those with less than a high school diploma have an

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<sup>36</sup> [http://www.bls.gov/emp/ep\\_chart\\_001.htm](http://www.bls.gov/emp/ep_chart_001.htm)

unemployment rate of 9%, well above the 5% national average. Both associate's and bachelor's degrees place one below the average unemployment rate, the rates being 4.5% and 3.5%, respectively. A notable exception is that "some college" high school graduates have the same unemployment rate as their counterparts who attended no college at all. Workers with professional degrees have the lowest unemployment rates at 1.9%.<sup>37</sup>

Overall, unemployment decreases and earnings increase with higher levels of educational attainment. Those with college degrees have a significantly lower unemployment rate and higher earnings than those who have only completed secondary school, and even some college experience without graduating results in more earnings on average. Thus, higher education confers a marked financial benefit. However, the high and rising cost of a university education poses an issue to those seeking to improve their employment and salary chances.

University tuition has increased sharply over the past few decades, with tuition skyrocketing in both public and private universities. In 2014, the average cost of tuition at a private four-year university in 2014 was \$31,231, over fifteen times the \$1,832 average tuition in 1971.<sup>38</sup> For public universities, tuition has increased from less than \$500 in 1971 to \$9,139 in 2014.<sup>39</sup> According to Ray Franke, a professor of education at the University of Massachusetts, Boston, college tuition "has been rising almost six percent above the rate of inflation," with this out-stripping of inflation beginning in the early 1990s and continuing until today.<sup>40</sup>

While there are various explanations for the hike in higher education costs over the past few decades, researchers say the primary reason for greater college costs are "deep budget cuts in state funding for public higher education and shrinking subsidies at private schools."<sup>41</sup> These cuts mean that, even when universities' costs of providing education remain stable, they must cover these costs with a greater amount of revenue from tuition. Indeed, although many have asserted that tuitions are rising due to increased expenditure by universities, this does not seem to be the case. According to an analysis of college-spending patterns by the Delta Cost Project of the American Institutes for Research, colleges have indeed expanded payrolls by 28% over the past decade.<sup>42</sup> However, the report from the Delta Cost Project also found that universities helped offset these spending increases by relying more on part-time faculty, keeping the overspending impact relatively contained. Ultimately, the aggregate level that institutions are spending on teaching and student-related services has been pretty much stable for the past

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<sup>37</sup> [http://www.bls.gov/emp/ep\\_chart\\_001.htm](http://www.bls.gov/emp/ep_chart_001.htm)

<sup>38</sup> <http://trends.collegeboard.org/college-pricing>

<sup>39</sup> <http://trends.collegeboard.org/college-pricing>

<sup>40</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

<sup>41</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

<sup>42</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

15-20 years, adjusted for inflation.<sup>43</sup> On the other hand, the percentage of university revenue which comes from tuition has been steadily increasing, while subsidies and state funding have decreased. Thus, universities seem to be increasing tuitions in an attempt to replace lost governmental expenditures/subsidies while covering stable levels of costs.

And as universities increase tuitions, few schools have the funds necessary to help students offset these costs. According to a survey conducted by the National Association of College and University Budget Officers in 2013, the top 50 schools (amongst 850 surveyed schools) with the largest endowments had a median endowment of \$3.5 billion whereas the median of the entirety of the 850 surveyed schools was \$113 million. Per the same survey, whereas the median student contribution at private institutions of higher learning was 75%, the median student contribution at the top 20 private universities was reported to be 15%. These statistics support claims that the majority of schools have far less money to help subsidize students' college costs.<sup>44</sup>

With little support from universities, students are bearing the brunt of these rising tuitions. Researchers affiliated with the Delta Price Project found that 50 or more than 50 percent of students' required college costs are being paid by students themselves. The most current data showed that as of 2013, 59% of students graduating from a public university had taken student loans, a 4% increase from the number of students in 2008. The average loan amount also increased by close to \$3,600.<sup>45</sup> Thus, higher education is becoming more burdensome and a less secure investment for students.

Students who do take out loans also face a system that is heavily weighted against them. Student loans are among the most expensive types of loans available to citizens, and they carry an interest rate often greater than 10% for students who hold no full-time jobs for the duration of their time at university. Students are also subject to the still-recovering job market and possible unemployment following graduation. Thus, student loans are a much more precarious investment and have a higher potential for default as well as for crippling interest levels. Indeed, students in the United States find themselves graduating with a daunting amount of debt that is difficult to repay.

Student debt in America is high, increasing, and difficult to repay, totaling between \$1.1 and 1.2 trillion.<sup>46 47</sup> Reported average loan debt per student differs by analysis. Estimates range from as low as *The Hechinger Report's* \$23,000 to as high

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<sup>43</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

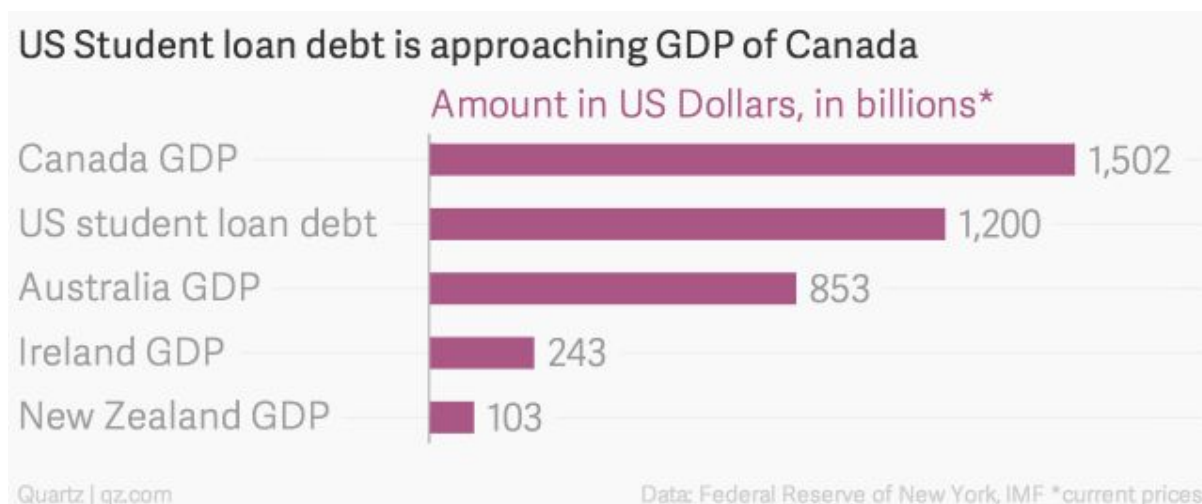
<sup>44</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

<sup>45</sup> <http://www.cnbc.com/2015/06/16/why-college-costs-are-so-high-and-rising.html>

<sup>46</sup> <http://magazine.good.is/infographics/student-loan-debt-is-astronomical>

<sup>47</sup> [Barshay](#)

as college financing consultant Mark Katrowitz's \$35,000 per graduate in 2015.<sup>48, 49</sup> The Institute for College Access and Success (ICAS), an American non-profit organization focused on college accessibility, states average debt was \$28,950 per borrower in 2014.<sup>50</sup> Whatever the actual burden is, it is high and rising. Average student loan debt at the time of graduation has increased more than twice the rate of inflation from 2004 to 2014.<sup>51</sup> The average loan balance for all students in debt increased by 74% in the same time period, and the number of borrowers nearly doubled.<sup>52</sup> Graduates are also having a difficult time repaying this debt. Throughout the fourth quarter of 2014, over 11.3 percent of student loan debt was at least three months past due and overall, nearly a fifth of those in debt were behind in payments or in default (behind in payments for 9 or more months).<sup>53, 54</sup>



*Total U.S. student debt now totals more than \$1 trillion, a massive figure.*<sup>55</sup>

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<sup>48</sup> [Barshay](#)

<sup>49</sup> [Wall Street Journal](#)

<sup>50</sup> <http://ticas.org/posd/map-state-data-2015>

<sup>51</sup> <http://ticas.org/posd/map-state-data-2015>

<sup>52</sup> <http://magazine.good.is/infographics/student-loan-debt-is-astronomical>

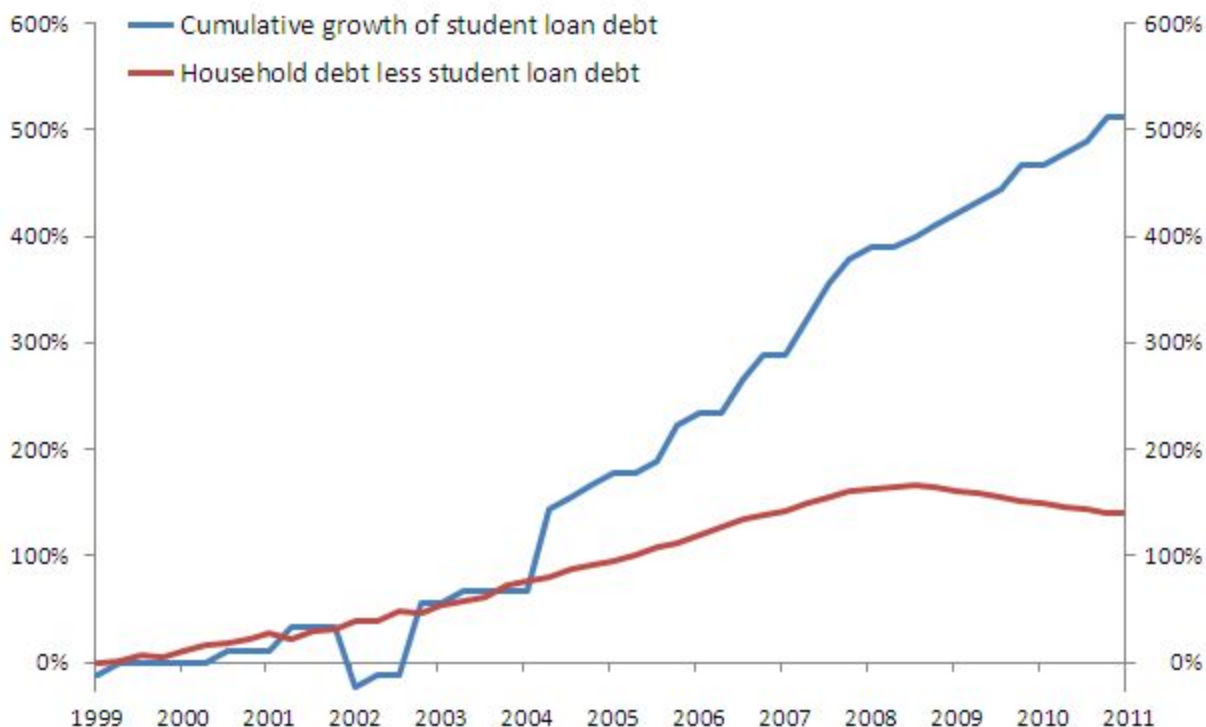
<sup>53</sup> <http://magazine.good.is/infographics/student-loan-debt-is-astronomical>

<sup>54</sup> [Barshay](#)

<sup>55</sup>

<http://qz.com/346342/american-student-loan-debt-has-surpassed-the-gdp-of-australia-new-zealand-and-ireland-combined/>

## Cumulative student debt growth since 1999



Source: Federal Reserve Bank of New York

*U.S. student debt is not only massive but is growing fast, far outstripping the growth of other U.S. household debt.*

For those looking for less burdensome aid from the government, the most common approach is to fill out the Free Application for Federal Student Aid (FAFSA). However, this form itself has actually been argued to be a barrier for lower-income individuals pursuing education. The main reasons for this barrier are low awareness of aid access among lower-income students and structural issues.

First, many lower-income students are not fully informed about their access to aid, so they assume that they cannot afford to go to college and do not even apply. As a result of all of these issues, the Institute for College Access and Success estimates that around 2 million eligible students during 2007-2008 did not complete the FAFSA and therefore did not get aid that they were entitled to.<sup>56</sup> Each year, the FAFSA receives approximately 22 million submissions, so the absence of the 2 million applications due to the difficulty of filling out the form is a very significant problem.<sup>57</sup>

<sup>56</sup> <http://www.vox.com/2015/9/14/9323719/prior-prior-financial-aid>

<sup>57</sup> <https://studentaid.ed.gov/sa/about>

Students also face challenges filling out the FAFSA; the process is lengthy, with many complicated questions and requiring information that some may not possess. There are many structural problems with the 108-questions and 72 pages of accompanying instructions that make up the FAFSA.<sup>58</sup> First, the length of time that is required to fill out the form is a hardship on families, particularly low-income families. Additionally, the task of answering many complicated questions can be too difficult for some families with poorly educated adults. Furthermore, all this complexity provides almost no benefit; a study performed by two current U.S. senators found that reducing the application to only two questions (regarding family size and income levels) would only change the average Pell Grant by \$54 per year.<sup>59</sup> Meanwhile, the study estimated that reducing the application to two questions would also save American families approximately 100 million hours per year.<sup>60</sup> However, as it currently stands, the complexity of the FAFSA remains an obstacle to many people – especially low-income students – applying for financial aid.

Finally, it is important to note how barriers to education and economic inequality work in a vicious cycle: poor economic status makes it harder to get education, leading to the perpetuation of low status and growing inequality. While there was widespread and fairly equal economic growth in the US from the end of World War II to the 1970s, the income gap has increased markedly since the 1970s, with the rate of income for the richest Americans increasing much more rapidly than the rate of incomes for the poorest Americans, according to the Center on Budget and Policy Priorities.<sup>61</sup> Another measure of inequality (often used to compare income inequality across countries) is the World Bank's Gini index. It ranges from 0 to 100, with 0 indicating perfect equality and 100 indicating perfect inequality. In 2013, the United States had a Gini index of 41.1, suggesting relatively high income inequality compared to other nations.<sup>62</sup> Based on data from the U.S. Census Bureau, the number of individuals in poverty has also risen dramatically since the 70s, a reflection of rising income inequality.<sup>63</sup> Concerning education, research by the American Psychological Association shows that children from low-socioeconomic (SES) backgrounds lag behind their high-SES peers in almost

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<sup>58</sup><http://www.nytimes.com/2014/06/19/opinion/simplifying-fafsa-will-get-more-kids-into-college.html?r=0>

<sup>59</sup><http://www.nytimes.com/2014/06/19/opinion/simplifying-fafsa-will-get-more-kids-into-college.html?r=0>

<sup>60</sup> Ibid

<sup>61</sup>

<http://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality>

<sup>62</sup> <http://data.worldbank.org/indicator/SI.POV.GINI>

<sup>63</sup> <https://www.census.gov/hhes/www/poverty/data/>

every measure.<sup>64</sup> The National Center for Education Statistics also provides insight into the role of race in education: black and Hispanic students have lower rates of high school graduation than white students in every state.<sup>65</sup> Since income is dependent on educational attainment (The Tax Foundation), there is a perpetual cycle of lower education and lower incomes for poor and minority students.<sup>66</sup>

### ***Analysis of Viability***

Given the grave issues of spiking tuitions, predatory loans, onerous student debt, and economic inequities present in the current United States university system, the country could well benefit from a change in financial aid policy. In order for HCCs to work in the United States, legislation and the university system must address issues of risk-pooling and legal frameworks. To reduce risk, HCCs must be implemented on a large scale. However, legal issues stand in the way of successful implementation. With proper regulation and protection, human capital contracts have the potential to reduce financial aid issues and barriers currently facing students in the United States.

There are certain ways in which HCCs can be (and are) implemented now. First, HCCs can succeed in the U.S. currently when the human capital is low-risk with a short-term, nearly guaranteed return. App Academy, an immersive 12-week coding boot-camp for driven individuals, charges no tuition but an 18% fee on the first year of salary pending job placement (graduates have a 98% placement rate).<sup>67</sup> One can easily imagine offering HCCs within high-placement engineering, trade-oriented, or “industry feeder” schools, or to students in high-return fields. However, the ultimate goal of implementing HCCs on a wide scale involves pooling these individuals with those who are bound for low-paying but perhaps socially beneficial careers. Thus, we must examine the changes needed to make HCC’s tenable on a larger scale.

Currently, HCCs are not very viable in the U.S. due to aspects of the legal environment. HCCs cannot be effectively enforced across state lines or implemented in all 50 states, as some states currently do not allow for the contractual provisioning of future income. Furthermore, HCCs do not currently receive the same bankruptcy-exempt status as do student loans, making them less attractive to investors. Attracting investors is also difficult under the currently restrictive regulations that individual investors must have “accredited investor” status. Finally,

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<sup>64</sup> <http://www.apa.org/pi/ses/resources/publications/factsheet-education.aspx>

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<http://www.governing.com/gov-data/education-data/state-high-school-graduation-rates-by-race-ethnicity.html>

<sup>66</sup> <http://taxfoundation.org/blog/chart-day-income-levels-vs-education-levels>

<sup>67</sup> <http://www.appacademy.io/#p-program>

income tracking and reporting are administrative barriers that need to be addressed.

Another impediment for HCC implementation is the present state of the U.S. financial aid system itself. Since there are many preexisting forms of financial aid in the country – bank loans, government loans and grants, loans and grants from universities, and private scholarships – HCCs would be entering into a highly competitive environment. Thus, to be successful and garner student interest, the HCCs would have to present the students with a better offer than they can receive from these other sources. And this offer must be better not just for students who anticipate earning low incomes, but also to high-earners who can supplement the others. However, this level of success in a competitive environment will necessitate proven, precise models for predicting student income and proffering HCC offers. As of yet, such precise models do not exist. Finally, we could also expect significant pushback to HCCs from private lenders who HCCs would be crowding out.

The United States needs a financial aid system overhaul, and with the right conditions put in place, all stakeholders could benefit from a human capital contracts financing system. If HCCs were introduced on a broader level, the FAFSA would not be required because current family assets would not need to be evaluated for a HCC. The only facts that would matter to investors would relate to future earnings potential, not the family's economic state. To address the issue about being aware of aid, investors would seek out students to invest in (and get a good return), so students would most likely be more likely to hear about accessible funding opportunities. This change could slowly work to reduce current inequities in education and income in the United States.

The largely fragmented system of federal and university loans and awards currently results in large amounts of student debt and inequity in education. In addition, nearly a fifth of graduates cannot repay their student loans. HCCs are feasible only in limited contexts currently. With an improved legal environment and widespread implementation, human capital contracts could very well be the tool to improve the current financial aid system. Given the large demonstrated benefit of college education, a simpler financial aid system would benefit both students and investors by making college more accessible and payment more feasible.

# The State of Higher Education in...

## United States:

- Relative Income – 165%  
(Bachelor's Degree vs. No College)
- Average Tuition – Public: 17% ; Private: 57%  
(As Percentage of GDP/Capita)
- Average Per-Student Debt – 53%  
(As Percentage of GDP/Capita)
- Key Benefit of HCC Implementation:  
Provides less burdensome capital to students
- Key Impediment to HCC Implementation:  
Amending of legal and financial infrastructures

*Summary of key higher education figures for the United States, as well as a primary benefit and drawback of HCC implementation.*

## Chile

### *Context*

Higher education attendance in Chile is fairly high, but it varies dramatically based on economic status. According to 2013 statistics provided by the World Bank, 79 percent of Chilean students who had graduated from secondary schooling within the past five years pursued a college education.<sup>68</sup> However, Emilio Rodriguez-Ponce, a reporter for the University World News, found that there is a noticeable gap between university attendance based on socioeconomic status, with 19.1 percent of the bottom 10<sup>th</sup> percentile of wealth attending college while 93.3 percent of the top 10<sup>th</sup> percentile of wealth attend.<sup>69</sup>

This large disparity makes sense considering the high cost of Chilean higher education and the little assistance families receive in covering them. In 2011, public

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<sup>68</sup> The World Bank: <http://data.worldbank.org/indicator/SE.TER.ENRR>

<sup>69</sup> University World News:

<http://www.universityworldnews.com/article.php?story=20131219150048533>

university tuition cost an average US\$5,377 per year while GDP/capita hovered around US\$15,000, making education costs a large fraction of yearly income. Moreover, these tuitions are rising rapidly; the 2011 figure is a 26% increase in six years, according to Chile's National Council of Education.<sup>70</sup> Furthermore, Chilean families receive little assistance in covering these costs; families pay more than three-fourths of higher education costs, compared to 40 percent in the United States and just 5 percent on average in Scandinavian countries.<sup>71</sup> Interestingly, average private tuition costs around US\$5,382 per year and only increased by 9 percent in the same six-year period.<sup>72</sup>

Chile's public spending on higher education as a percentage of its GDP is the lowest among countries affiliated with the Organization of Economic Cooperation and Development<sup>73</sup>. 80% of the budget of public universities in Chile originates from sources other than the government (mainly student tuition payments). Students are mainly responsible for covering tuition payments, with poorer students taking larger loans to subsidize their tuition. The higher education system in Chile is one of the most privatized in the world. The average family pays nearly 40 percent of their income to pay for higher education due to the lack of public funding for education. However, in recent news, Chile has been making great strides in education reform policy. Following the approval of a new corporate tax that is estimated to generate \$8.2 billion in revenue, the Chilean government is planning to start free higher education as soon as spring of 2016.<sup>74</sup> It is unclear, however, exactly how many students will benefit from the new tax hike, how educational institutions will be compensated, and how this move will affect existing financial aid options.<sup>75</sup> The government does provide both merit- and need-based scholarship opportunities and loan programs for the socioeconomically disadvantaged. In 2012, 58% of the total number of students enrolled in Chilean higher education institutions received some kind of aid from the government (35% of the aid received being scholarships and 65% being loans).

According to the Abdul Latif Jameel Poverty Action Lab (J-PAL), the amount of publicly-provided scholarships has risen from US\$40 million in 2000 to US\$173 million in 2007, but awards are based on academic performance, so poorer students must do well in school both to gain entrance to post-secondary institutions and to

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<sup>70</sup> The Santiago Times:

<http://santiagotimes.cl/public-university-tuition-matches-cost-of-private-schools-in-chile/>

<sup>71</sup> World Education News and Reviews:

<http://wenr.wes.org/2013/12/introduction-to-the-higher-education-system-of-chile/>

<sup>72</sup> <http://santiagotimes.cl/public-university-tuition-matches-cost-of-private-schools-in-chile/>

<sup>73</sup> <http://wenr.wes.org/2013/12/introduction-to-the-higher-education-system-of-chile/>

<sup>74</sup> ATTN:: <http://www.attn.com/stories/836/chile-makes-college-tuition-free>

<sup>75</sup> Inside Higher Ed: <https://www.insidehighered.com/blogs/world-view/free-tuition-rocky-rollout-chile>

finance their education.<sup>76</sup> Still, as of 2012, it appears financial aid in Chile is insufficient to meet the growing demand for a college education: Chilean families must shoulder ~80 percent of the cost of a university education as mentioned previously.<sup>77</sup> Chile has had two main student loan programs in the recent past, Crédito con Aval del Estado (CAE) and Fondo Solidario de Crédito Universitario (FSCU). The CAE is a much larger program, based both on its number of beneficiaries and the amount of resources provided, while the FSCU is smaller in both facets.<sup>78</sup>

Disparities in Chilean citizen's educational attainment also lead to inequities in job finding. Eighty four percent of college-educated adults in Chile had jobs in comparison to 59% for those who did not earn a college degree. Furthermore, people with collegiate education are projected to earn around 160% more over their lifetime than people with only a secondary education.<sup>79</sup> Higher educational attainment has also been shown to reduce variability in workers' future wages, a phenomenon known as the composition effect.<sup>80</sup>

Even with the improved job success following graduation, investment in higher education in Chile is still a risk for students, as they often graduate with massive debt. After graduation, Chilean college students owed around US\$45,000 of debt as of 2011 (compared with \$27,000 of average US student debt).<sup>81</sup> One reason this debt figure is so large is that Chilean students remain at universities for much longer than US students; fewer than 60% graduate within six years, and the remaining students accrue further debt.<sup>82</sup> Ultimately, this debt amount is a huge figure considering Chile's GDP/capita is only US\$14,528, making student debt over 300% of GDP per capita, while average US student debt comes out to approximately 50% of GDP per capita (\$27,000/\$53,000).<sup>83</sup> Thus, Chilean students face a debt burden approximately six times larger than that of US students. Chilean students' debt burden is also high compared to other OECD countries – graduates pay three to five times more of their income in student loans than other OECD-region graduates

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<sup>76</sup> Abdul Latif Jameel Poverty Action Lab:

<http://www.povertyactionlab.org/evaluation/examining-effect-information-about-financial-aid-higher-education-schooling-outcomes-chil>

<sup>77</sup> <http://www.americasquarterly.org/node/3287>

<sup>78</sup> World Bank:

<https://openknowledge.worldbank.org/bitstream/handle/10986/12954/702090ESW0P12300con0Aval0del0Estado.txt?sequence=2>

<sup>79</sup> Organisation for Economic Co-operation and Development:

<http://www.oecd.org/education/Chile-EAG2014-Country-Note.pdf>

<sup>80</sup> International Trade Collaborative Initiative on Trade and Employment:

<http://www.oecd.org/site/tadicite/50287494.pdf>

<sup>81</sup> Alternet: <http://www.alternet.org/world/chilean-activist-incinerates-500-million-student-debt>

<sup>82</sup> The Santiago Times:

<http://santiagotimes.cl/less-than-60-percent-of-chiles-university-students-graduate-on-time/>

<sup>83</sup> World Bank: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>

of tertiary education. For those who do not graduate, these loans are especially crippling. As a result, the student loan default numbers are high, with a 16.22% default rate for men and a 15.41% default rate for women.<sup>84</sup>

### ***Analysis of Viability***

There is great potential and viability for the implementation of human capital contracts in Chile. Currently, three main ways of financing higher education exist in Chile: household resources, government aid, and private sector funding. Chile is one of the countries that most heavily relies on family income. Due to lack of public funding for education, two-fifths of the average family's income is directed to finance higher education. Current means of government aid available to students include government warranted credit lines; loans administered by the Ministry of Education for students whose household income is within the first three income quintiles; loans administered by the Ministry of Economy to all higher education students with monthly family incomes below US\$4,800; and scholarships from the Ministry of Education.<sup>85</sup> As previously stated, in 2008, the number of beneficiaries (assuming each student was eligible to receive only one type of student aid program) was a mere 58% of the total student population. The private sector provides funding mechanisms in the form of scholarships, donations, and loans. That being said, the entirety of private and government aid cover only approximately 30% of the tuition needs of students.<sup>86</sup> Costs of education are constantly rising due to the increased costs of providing education, and consequently, the number of beneficiaries of financial aid are decreasing. The recent hike in higher education enrollment and tuition in Chile has led to a greater dependence on traditional loans, but those who take out loans face staggering debt burdens, approximately four times larger than that of US students.

Social enterprise Lumni has already begun to help predominately low-income students in Chile finance their college educations through such contracts. In exchange for financing they receive, students commit to repayment schemes over time periods of 10 years or less. Lumni is also working with nonprofit funders to free up public resources for things that depend on public support; for example, Lumni currently finances Chilean students who want to become school teachers in rural areas. A 2011 research paper on the viability of human capital contracts in Chile states that HCCs can be utilized to partially fund any college major in Chile and can finance some majors completely under certain conditions.<sup>87</sup> The ideal major is engineering or geology, two fields that show the most significant

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<sup>84</sup> Superintendencia de Bancos e Instituciones Financieras:

[https://www.sbif.cl/sbifweb3/internet/archivos/publicacion\\_10408.pdf](https://www.sbif.cl/sbifweb3/internet/archivos/publicacion_10408.pdf)

<sup>85</sup> Munich University Library: <https://mpira.ub.uni-muenchen.de/42982/>

<sup>86</sup> University at Buffalo Graduate School of Education:

[http://gse.buffalo.edu/org/inthigheredfinance/files/Country\\_Profiles/Latin\\_America/Chile.pdf](http://gse.buffalo.edu/org/inthigheredfinance/files/Country_Profiles/Latin_America/Chile.pdf)

<sup>87</sup> <https://mpira.ub.uni-muenchen.de/42982/>

potential in the labor market. Given that demand for financial aid far surpasses the supply, human capital contracts would be an extremely appealing and viable mechanism for financing education in Chile.

## The State of Higher Education in... Chile:

- Relative Income – **160%**  
*(Bachelor's Degree vs. No College)*
- Average Tuition – **Public: 37% ; Private: 37%**  
*(As Percentage of GDP/Capita)*
- Average Per-Student Debt – **310%**  
*(As Percentage of GDP/Capita)*
- Key Benefit of HCC Implementation:  
**Increases size of credit pool for students (to meet demand)**
- Key Impediment to HCC Implementation:  
**Lowering the dropout rate and improving timely completion**

*Summary of key higher education figures for Chile, as well as a primary benefit and drawback of HCC implementation.*

### **Australia**

#### ***Context***

In Australia, there are an estimated 1.3 million students pursuing higher education.

<sup>88</sup> The World Bank also indicates that 89% of Australian students who have graduated from secondary schooling within the past five years are pursuing college education. <sup>89</sup> The degree of access to higher education is somewhat correlated with socioeconomic status, as “[fewer] than 20% of year 12 students go to independent schools yet they receive about one-third of university offers -- up more than 4 percentage points from 2000”<sup>90</sup>. This figure indicates that students who attend private secondary schools (generally students from wealthier backgrounds, since

<sup>88</sup> <http://grattan.edu.au/wp-content/uploads/2014/10/816-mapping-higher-education-2014.pdf>

<sup>89</sup> <http://data.worldbank.org/indicator/SE.TER.ENRR>

<sup>90</sup> <http://www.ias.uwa.edu.au/new-critic/five/educationinequalities>

private schools are more expensive) have greater access to a variety of higher education institutions.

Higher education provides great benefit in Australia. Many studies have found that the income gap between different education levels widens as individuals move further into their careers. People with bachelor's degrees initially tend to have the highest average annual income. However, the incomes of individuals with postgraduate degrees surpass those of individuals with bachelor's degrees around ages 35-39. There is also an element of trajectory to income, with a steeper growth trajectory for people who are more highly educated, versus a fairly flat trajectory for those with less education. Also, education seems to influence the type of occupation an individual chooses, with most highly educated people becoming professionals, while those with less education tend to have more manual or sales-oriented jobs. Over the long-run, a person with a postgraduate degree will earn about AU\$3.17 million in a lifetime, compared to AU\$1.74 million for a person without a college education.<sup>91</sup> There is also a divide between public and private schooling, with private schooling adding around 12% to lifetime earnings.<sup>92</sup>

Although higher education in Australia is highly beneficial, it also has a fairly high sticker-price, and tuition fees are expected to grow in the coming decades, increasing at an average annual rate of 5.28% over the next 32 years.<sup>93</sup> However, the government provides considerable support for domestic students. Financing for higher education comes from a variety of programs designed to help students with costs. The Higher Education Contribution Scheme (HECS) creates "Commonwealth supported places" (government subsidized spots at higher education institutions) at all public and some private Australian universities, and establishes three cost bands based on subject matter (for instance, Band 1 includes social studies, humanities, etc.), indicating contribution ranges for students. The bands are determined based on a combination of the cost of administering certain courses of study and the earning potential of those subjects. Universities set their fees according to this framework, ranging from \$0 to a government-set maximum, and limited financial aid is distributed based on factors such as family income and expected expenditure for the coming year.

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<http://www.natsem.canberra.edu.au/storage/AMP.NATSEM%2032%20Income%20and%20Wealth%20Report%20-%20Smart%20Australians.pdf>

92

<http://www.afr.com/news/policy/education/private-schooling-boosts-future-earnings-20140105-iybxe>

93

<https://www.asg.com.au/doc/default-source/Planning-for-University-Education-Index/2033-planning-for-university-summary-sheet.pdf?sfvrsn=0>

Table: 2015 Student contribution bands and ranges

Student contribution band	2015 Student contribution range (per EFTSL)
<b>Band 3:</b> Law, accounting, administration, economics, commerce, dentistry, medicine, veterinary science	\$0 - \$10,266
<b>Band 2:</b> Mathematics, statistics, computing, built environment, other health, allied health, science, engineering, surveying, agriculture	\$0 - \$8,768
<b>Band 1:</b> Humanities, behavioural science, social studies, education (see Notes), clinical psychology, foreign languages, visual and performing arts, nursing (see Notes)	\$0 – \$6,152

Figure: Student contribution bands in Australia<sup>94</sup>

In meeting these costs, students can either pay a discounted rate upfront, take out zero-interest government loans (via the HECS-HELP program), or opt for a combination of these choices. Loans are repaid via income taxes once a student's income reaches a threshold, and the repayment rate increases with income. HECS and its constituent HECS-HELP program offer loans that depend only on a student's earnings, with percentages beginning at no payments (if income is less than \$US 38,000) and rising to a maximum of 8% of income.<sup>95</sup> This loan does not take into account a family's income, so it is assumed that the student will be the major funder of their education (not their parents). If a person undergoes an unexpected change in income or expenses (such as from unemployment, injury, or illness), payments can decrease or temporarily cease. Payments also function as an automatic deduction from income, so they are very simple to pay, and a person is allowed to repay his or her loan early. FEE-HELP is a similar loan program, but applies to full-fee places rather than Commonwealth supported places. These programs are exclusive to the country's public universities. However, public universities dominate the higher education landscape in Australia; the amount of private institutions is small, and they are largely seen as less prestigious than the public institutions.

<sup>94</sup>

<http://studyassist.gov.au/sites/studyassist/help-payingmyfees/csps/pages/student-contribution-amounts>

<sup>95</sup>

<https://www.nasfaa.org/uploads/documents/ektron/801c4a3e-952e-4779-b11c-619506e349b9/b69d2dd19f1249838fbb6116104177f44.pdf>

The availability of this income-contingent credit is a boon to students, but it also creates a substantial burden on the Australian government, especially in times of higher unemployment and lowered income. Ultimately, research indicates that the government will have AU\$70 billion in unpaid loans on its books in two years, and AU\$17 billion of that amount will not be repaid at all.<sup>96</sup>

### ***Analysis of Viability***

Currently, Australia implements an education financing system that uses a lot of the techniques of human capital contracts. The Australian government covers all of student financial aid by issuing income-contingent loans to students so that they can pay for their education at public universities.<sup>97</sup> However, Australia does not seem likely to be receptive to privately funded HCCs at the current time, and it could be difficult to bring them to prominence in Australia because of philosophical values about education.

Australia used to have tuition-free public higher education. However, in 1989, the government created the Higher Education Contribution Scheme with the goal being to move responsibility for paying for higher education from the government to individual students.<sup>98</sup> When this move away from completely government provided education took place, it faced significant resistance from the public. With this tradition of publicly funded education, it may be politically difficult to justify a further shift towards privatization and away from government-subsidized education. In the political rhetoric that surrounds this issue in Australia, it seems as though there would be resistance to making education a private asset, since it is traditionally valued as a public good. Moreover, in order for private HCCs to be effective in Australia, they must be able to compete with the government option, which would be very difficult considering the government offers incredibly low interest rates on its loans.<sup>99</sup> The term “loan” in Australia is also crucial, because it creates an understanding that students are taking responsibility for their education. They may be receptive to changing their understanding of financing to be more of an equity option, but that could also be an obstacle.

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<sup>96</sup>

<http://www.theaustralian.com.au/higher-education/runaway-loans-students-set-to-owe-70bn/news-story/c3038c23a946d49a34a72b32b0524876>

<sup>97</sup> <http://www.humancapitalcontracts.com>

<sup>98</sup>

[http://www.slate.com/articles/business/the\\_bills/2015/11/australia\\_s\\_student\\_loan\\_system\\_should\\_make\\_americans\\_jealous.html](http://www.slate.com/articles/business/the_bills/2015/11/australia_s_student_loan_system_should_make_americans_jealous.html)

<sup>99</sup>

<http://www.nytimes.com/roomfordebate/2013/07/09/study-now-pay-later/australian-college-plan-has-helped-students-at-a-cost>

However, there is the potential for private HCCs to become an option for Australia if the rising level of student debt causes a major problem with government finances. As discussed earlier, the amount of unpaid debt is growing each year. Also, when students leave Australia after graduation, it becomes difficult for the government to collect payments on the loans because it is harder to assess income. Combined, these issues are creating a burden on the Australian government's finances. If this problem were to worsen, there is a plausible chance that it would become more politically viable to push for expanding private funding opportunities. This would mean that the legal framework would have to be overhauled for private companies to have the same ability as the government currently does to issue HCCs and collect payments in the future. The Australian financial system is very developed, so the investment infrastructure is in place, but there is currently no market for private HCCs and it could remain that way in the near future.

## The State of Higher Education in...

### Australia:

- Relative Income – **123%**  
*(Bachelor's Degree vs. No College)*
- Average Tuition – **Public: 9.5% ; Private: N/A**  
*(As Percentage of GDP/Capita)*
- Total Unpaid Student Debt – **US \$35 billion**
- Key Benefit of HCC Implementation:  
**Shifts debt responsibility away from national government**
- Key Impediment to HCC Implementation:  
**Culture of publicly funded higher education**

*Summary of key higher education figures for Australia, as well as a primary benefit and drawback of HCC implementation.*

### Germany

### ***Context***

Germany's system of higher education is far more accessible than that of many OECD countries. Sixty percent of its secondary students go on to higher education, and 70-80% of these students complete their tertiary education, compared to the 33% OECD completion rate.<sup>100</sup> However, Anna Kroth, a researcher at the University of Michigan, states that "together, the social inequalities in important transition points in the [German] education system result in significant social inequalities in higher education enrollment." Kroth uses statistics which indicate that in 2005, only "11 percent of 21 to 27 year olds from the lowest quartile of parental education and occupational prestige attended an institution of higher education." This rate then rose with parental socioeconomic status, growing to 29% for the second lowest quartile, 66% for the next, and 81% for the highest quartile.<sup>101</sup> This demonstrates drastic differences in college attendance for those of different socioeconomic classes and the unequal attainability of higher education.

Because German higher education is financed by local state governments, however, it appears that the wealth gap affects students indirectly or earlier in their schooling.<sup>102</sup> There are no tuition fees in Germany; all education is funded through taxes. Students do pay semester contribution fees for student services, but these costs are low (approximately \$250 per semester). The greatest costs to students in Germany are personal expenses, averaging approximately \$850 per month. This includes health insurance, which is mandatory but affordable at \$85 per month.<sup>103</sup>

Prolonged study increases costs, incentivizing students to graduate in a timely manner and enter the workforce. Education after the 10<sup>th</sup> semester increases fees to just over \$500 per term.<sup>104</sup> Students that either are over 30 years of age or have been studying for longer than 14 semesters experience a doubling of health insurance costs.<sup>105</sup>

The German government does provide general financing for students at various stages of their education with a program dubbed "BAfoG." This program provides half of the total amount in grants and the other half in zero-interest loans (to be repaid after the student meets a certain income threshold). This is calculated

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<sup>100</sup> <http://data.worldbank.org/indicator/SE.TER.ENRR>  
<http://www.universityworldnews.com/article.php?story=20110204224030367>  
<http://www.oecd.org/edu/Education-at-a-Glance-2014.pdf>

<sup>101</sup> [http://deepblue.lib.umich.edu/bitstream/handle/2027.42/111597/ankroth\\_1.pdf?sequence=1&isAllowed=y](http://deepblue.lib.umich.edu/bitstream/handle/2027.42/111597/ankroth_1.pdf?sequence=1&isAllowed=y)

<sup>102</sup> <http://theconversation.com/how-germany-managed-to-abolish-university-tuition-fees-32529>

<sup>103</sup> [https://www.study-in.de/en/plan-your-stay/money-and-costs/cost-of-living\\_28220.php](https://www.study-in.de/en/plan-your-stay/money-and-costs/cost-of-living_28220.php)

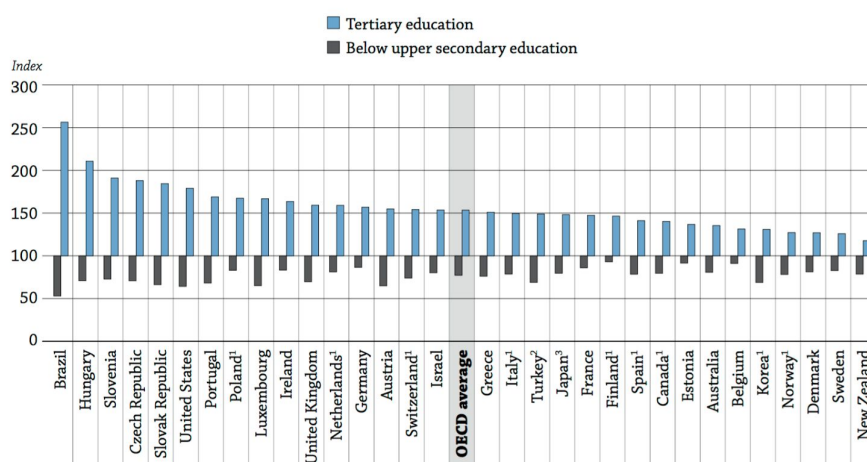
<sup>104</sup> [http://www.internationale-studierende.de/en/prepare\\_your\\_studies/financing/cost\\_of\\_education/](http://www.internationale-studierende.de/en/prepare_your_studies/financing/cost_of_education/)

<sup>105</sup> [https://www.study-in.de/en/plan-your-stay/money-and-costs/cost-of-living\\_28220.php](https://www.study-in.de/en/plan-your-stay/money-and-costs/cost-of-living_28220.php)

based on either parental income or a student's own income (if the students has worked for a certain number of years before university).<sup>106</sup>

The benefits of higher education in Germany are manifest in salary increases with each extra degree of attainment.<sup>107</sup> The wage gap resulting from the difference in secondary and tertiary educational achievement is growing, making the need for improving equity in higher education enrollment more urgent. Since the turn of the century, the earnings gap between workers with a tertiary level of education (in addition to a secondary education) and those with only a secondary education has increased from 45% more in 2000 to 74% more in 2012.

**Chart A8.1. Relative earnings from employment by level of educational attainment for 25-64 year-olds (2009 or latest available year)**  
Upper secondary and post-secondary non-tertiary education = 100



**Note:** Belgium, Korea and Turkey report earnings net of income tax. The Czech Republic, Hungary, Luxembourg, Poland, Portugal and Slovenia report earnings excluding data for individuals in part-time work. Hungary, Luxembourg, Poland and Slovenia also exclude data on part-year earnings.

1. Year of reference 2008.

2. Year of reference 2005.

3. Year of reference 2007.

Countries are ranked in descending order of the relative earnings of 25-64 year-olds with tertiary education.

**Source:** OECD, Table A8.1. See Annex 3 for notes ([www.oecd.org/edu/eag2011](http://www.oecd.org/edu/eag2011)).

**StatLink** <http://dx.doi.org/10.1787/888932460515>

Ultimately, the German educational system is quite accessible compared to OECD averages as a result of its free tuition and minimal fees. Thus, Germany lacks the sizeable student-loans industry that generates tremendous debt for students in the United States. The rewards in later salary based on education are clear, and the majority of German students take advantage of post-secondary education, either through vocational schools or universities.

## Analysis of Viability

<sup>106</sup>

<http://www.topuniversities.com/student-info/student-finance/how-much-does-it-cost-study-germany>

<sup>107</sup> <http://www.oecd.org/edu/Germany-EAG2014-Country-Note.pdf>

Because Germany's higher education is free for students (with the exception of several minimal fees), an HCC model is unnecessary. Access to higher education is not subject to ability to pay tuition, negating the need for student loans and investors to provide the necessary capital. By nature of Germany's university payment system, which is built into preexisting taxes, students do not seek money either from banks or from private investors. This eliminates the need for human capital contracts, which directly rely on the demand for low-cost, easily-repayable students loans. Thus, under the current system, HCCs do not have a place in German higher education.

Germany's universities are overwhelmingly public, thus obviating the predatory loan model used by many American private or for-profit universities. The government subsidy pays for all public universities, making higher education in Germany essentially free (no HCCs necessary).

However, changing Germany's current model could address some of the concerns of the German government regarding the university system and make room for HCCs in Germany. The lower quality of German universities has (in the past) led the government to charge tuition at some in an attempt to fund further research, hire more professors, and emulate other hallmarks of elite universities.<sup>108</sup> The backlash, however, caused a reversal of the policy, and all universities are free today. If the government chose to re-implement tuition with HCCs as the payment model (rather than out-of-pocket costs), student ire could be lessened, and these payments would not bar lower-income students from attending university.

Germany's financial infrastructure is highly developed, and it has all of the census infrastructure of the majority of developed countries to track individual income. From this, need could be calculated quite easily, and the existing legal/investor climate would quite easily facilitate the creation of HCCs. As recently as 2015, the government put in place more investor protections for mass funding and protection of investors who deal only in small amounts of capital.<sup>109</sup> Thus, HCCs likely could be implemented in Germany if desired.

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<sup>108</sup><http://www.nytimes.com/2006/10/20/world/europe/20germany.html?pagewanted=2&r=0>

<sup>109</sup><http://www.friedfrank.com/siteFiles/Publications/FINAL%20v6%20English%20-%2006-12-2015%20-%20TOC%20Memo%20-%20Investment%20Law%20%20The%20German%20Small%20Investor%20Protection.pdf>

# The State of Higher Education in...

## Germany:

- Relative Income – **174%**  
*(Bachelor's Degree vs. No College)*
- Average Tuition – **Public: Free ; Private: N/A**  
*(As Percentage of GDP/Capita)*
- Average Per-Student Debt – **~ 0%**  
*(As Percentage of GDP/Capita)*
- Key Benefit of HCC Implementation:  
**Improves university quality through increased funding**
- Key Impediment to HCC Implementation:  
**Culture of free and public higher education**

*Summary of key higher education figures for Germany, as well as a primary benefit and drawback of HCC implementation.*

## **Brazil**

### ***Context***

In Brazil, enrollment in higher education is not widespread. Only about one quarter of students who completed secondary education within the past five years enrolled in tertiary education.<sup>110</sup> The overall accessibility of education within Brazil has several noted issues, mostly stemming from the degree of income inequality found within the nation. Journalist David Felsen states “access is often skewed towards wealthier Brazilian students, since these students tend to pursue private school (primary and secondary) education which gives them an advantage on the

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<sup>110</sup>[http://gse.buffalo.edu/org/inthigheredfinance/files/Country\\_Profiles/Latin\\_America/Brazil.pdf](http://gse.buffalo.edu/org/inthigheredfinance/files/Country_Profiles/Latin_America/Brazil.pdf) ;  
<http://educationnext.org/rising-expectations-in-brazil-and-chile/>

competitive entrance examinations.”<sup>111</sup> While federal universities within Brazil are free, admission is based completely upon entrance examination performance, which correlates directly with socioeconomic background. Poorer students, who attend low-quality public secondary schools, rather than the high-quality, expensive independent secondary schools attended by higher socioeconomic class children, thus have limited opportunities for admission.<sup>112</sup>

As these free federal universities are competitive and have limited spots, three quarters of students pursuing tertiary education within Brazil attend private, for-profit universities.<sup>113</sup> With consideration of the amount of financial aid available to students, the medium estimate of average private university tuition cost borne by the student was US\$5,160 in 2006.<sup>114</sup> Compared to a per capita GDP per of US\$5,810, this is a massive figure.<sup>115</sup>

For students attending these expensive for-profit schools, they generally meet tuition costs using loans, parents’ funds, and/or part-time jobs. Within recent years, the Brazilian government has begun to provide a limited amount of financial assistance for poorer students pursuing tertiary education.<sup>116</sup> This includes the Programa Universidade para Todos (ProUni), which was established in 2005. ProUni provides tax breaks to universities for providing scholarships at a rate comparable to 10 percent of normal paying students. From 2005 to 2013, ProUni has helped provide over 1.7 million scholarships. Students must take Brazil’s national ENEM exam and those with the highest scores will be awarded scholarships, in increments of 25, 50, and 100 percent of tuition.<sup>117</sup> To receive a full scholarship, a family’s per capita income cannot be more than 1.5 time the minimum wage; partial scholarships are given to students whose familial per capita income is no more than three times the minimum wage.<sup>118</sup> For those who do not receive assistance from ProUni, the Brazilian government provides an alternate program, the Fundo de Financiamento ao Estudante do Ensino Superior (FIES). The FIES program will provide loans that cover up to 50 percent of tuition fees, at a fixed interest rate of 3.4 percent. This interest must be paid every three months, but is

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111

<http://policymatters.illinois.edu/income-inequality-and-educational-inequality-comparing-the-u-s-and-brazil/> ; <http://www.ibtimes.com/brazil-whats-right-higher-education-equation-1351047>

112 See footnote 123

<sup>113</sup><http://www.businessinsider.com/brazil-has-tuition-free-college-but-it-only-serves-a-portion-of-its-citizens-2015-6>)

114 See footnote 122

<sup>115</sup> <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

<sup>116</sup> <http://www.topuniversities.com/where-to-study/south-america/brazil/guide#tab=2>

<sup>117</sup> <http://www.universityworldnews.com/article.php?story=20140710115554910>

<sup>118</sup> <http://www.di.inf.puc-rio.br/~celso/artigos/MaculanRibeiroIAU.pdf>

capped at a maximum R\$50. Upon graduation, one must immediately begin to repay loans along a schedule that is not dictated by income.<sup>119</sup>

Having completed higher education, Brazilian citizens benefit handsomely. The private payoff for higher education doubled from 14 to 28 percent over 1970 to 1989 and has remained at consistently high levels of return within the 2000s.<sup>120</sup> Brazil experiences the highest difference in earning between those with higher education degrees and those without out of all OECD countries.<sup>121</sup> It is argued that Brazilians with college degrees make between 2.5 to 2.6 times than Brazilians without college degrees, and as high as 5 times as much compared to Brazilians who have not finished secondary education.<sup>122</sup> It is noted that even those with degrees from less prestigious for-profit universities make double than what these individuals would have made if they were to have worked immediately after finishing secondary education, demonstrating an invaluable need for higher education within Brazil.<sup>123</sup>

### ***Analysis of Viability***

For Brazil, HCCs do not seem to be a viable widespread possibility and have rather limited potential for growth. Upon first glance, statistics seem to indicate the country would provide an excellent place to develop systems involving human capital contracts. However, Brazil's education system has one major flaw – inequities in secondary education resulting from income inequality – that must be targeted first to allow for the expansion and success of HCCs.

Brazil faces major issues with income inequality. Based on information from 2012, Brazil has the world's 17<sup>th</sup> highest Gini index at 51.9 on a scale of 100.<sup>124</sup> This is an indicator of quite severe and extensive income inequality—leading to large socioeconomic class gaps. The Instituto Brasileiro de Geografia e Estatística (IBGE, Brazil's official government statistics department) states 8.5 percent of Brazil's total population, 16.2 million people, lives below the poverty line, which is defined around \$1.30 USD a day.<sup>125</sup> The World Bank shows the richest 20 percent of

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<sup>119</sup> See footnote 122

<sup>120</sup>[https://reap.fsi.stanford.edu/sites/default/files/Economic returns to higher education in the BRIC countries2.pdf](https://reap.fsi.stanford.edu/sites/default/files/Economic%20returns%20to%20higher%20education%20in%20the%20BRIC%20countries2.pdf)

<sup>121</sup><http://www.theatlantic.com/education/archive/2015/04/brazil-where-free-universities-largely-serve-the-wealthy/389997/>

<sup>122</sup> <http://www.economist.com/node/21562955> ;

<http://dealbook.nytimes.com/2014/06/19/as-demand-for-education-rises-in-brazil-for-profit-colleges-fill-the-gap/>

<sup>123</sup> Ibid

<sup>124</sup><https://cia.gov/library/publications/resources/the-world-factbook/rankorder/2172rank.html>

<sup>125</sup><http://riotimesonline.com/brazil-news/rio-business/brazil-strives-for-economic-equality/>

Brazilians hold 57.4 percent of the entire country's wealth, while the bottom 20 percent hold around 3.3 percent.<sup>126</sup>

The significance of this drastic income inequality lies within its impact on the Brazilian education system. The quality of primary and secondary schools throughout Brazil varies widely. The rich attend higher-quality private schools, while the poor are stuck in low quality public schools. Because of this education quality inequality, only the rich upper class is able to be admitted to college, as poor students do not have the resources and abilities to prepare for a competitive admissions process. A large proportion of tertiary education is made up of free, federally-funded public universities. Only the rich are capable of being admitted to these universities, where they do not have to pay for tuition even though they are able to do so.

Overall, HCCs will fail to work in Brazil as long as the quality of public education remains too low to prepare poor students to apply for college. The lower and middle class parts of the population, who would be the ones with great potential in terms of benefitting from HCCs, are unable to attend college in the first place – severely limiting the ability for HCCs to grow within the country. If progress were to be made along the terms of improving the quality of public education, there would be a great amount of possibility for the development of human capital contracts within the country's financial lending system, but it does not seem feasible up until that point.

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<sup>126</sup> <http://data.worldbank.org/indicator/SI.DST.05TH.20/countries/BR?display=graph>

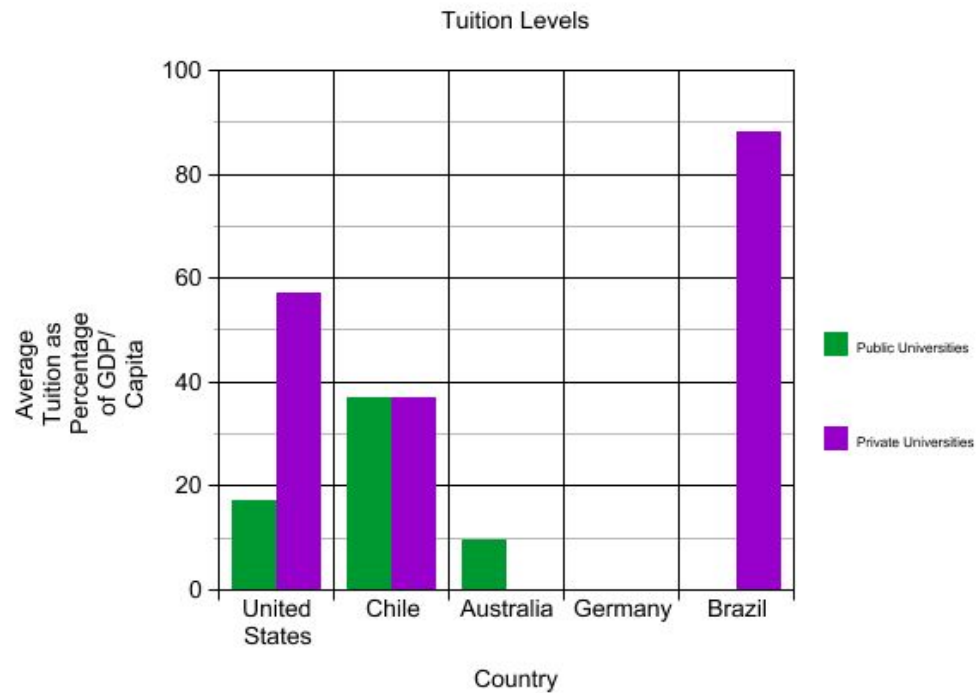
# The State of Higher Education in...

## Brazil:

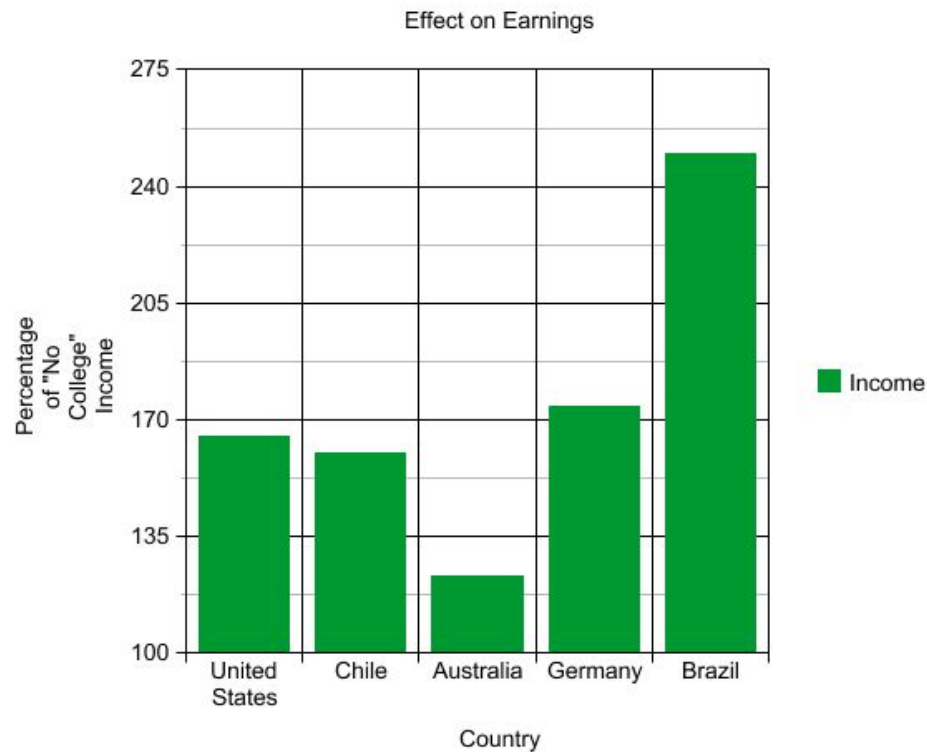
- Relative Income – **250%**  
*(Bachelor's Degree vs. No College)*
- Average Tuition – **Public: Free ; Private: 88%**  
*(As Percentage of GDP/Capita)*
- Average Per-Student Debt – **~ 61% (for those with FIES loans)**  
*(As Percentage of GDP/Capita)*
- Key Benefit of HCC Implementation:  
**Increases size of credit pool for students**
- Key Impediment to HCC Implementation:  
**Inequities in earning acceptance to public universities**

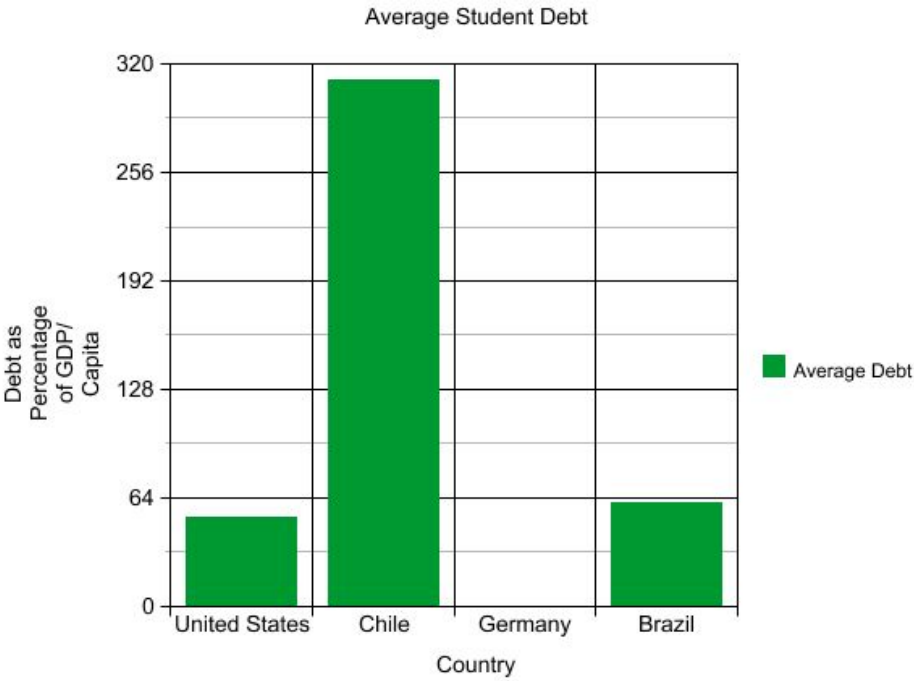
*Summary of key higher education figures for Brazil, as well as a primary benefit and drawback of HCC implementation.*

## Summary Figures: Country Analysis



\*Private universities in Germany and Australia are rare; tuition levels not reported above





\*Australian per student debt levels unavailable

## Key Benefits of HCC Implementation:

United States: Provides less burdensome capital to students

Chile: Increases size of credit pool for students (to meet demand)

Australia: Shifts debt responsibility away from national government

Germany: Improves university quality through increased funding

Brazil: Increases size of credit pool for students

## Key Impediments to Implementation:

United States: Amending of legal and financial infrastructures

Chile: Lowering the dropout rate and improving timely completion

Australia: Culture of publicly funded higher education

Germany: Culture of free and public higher education

Brazil: Inequities in earning acceptance to public universities

## Conclusion: Lessons for HCC Viability

Lessons for the viability of HCCs draw mainly from past attempts like the TPO as well as economic architectures internationally. From these sources there are a few common trends when assessing whether or not HCCs can and should be implemented. From the TPO and theory of HCCs, adverse selection and tracking are fundamental obstacles to implementation. Fortunately, forcing the use of HCCs on a diversified population can solve the adverse selection problem and the tracking issue has become less and less relevant with the advent of new technology. Additionally, if the responsibility to implement HCCs is delegated to the government rather than the university, then tracking becomes somewhat of a nonissue.

Further, the viability of HCCs rests very much on the characteristics of different societies. These traits could be simplified into three major categories: values, market structures, and legal frameworks. The current trend in the United States of students taking on the burden of university debt rather than their parents indicates an important cultural shift in favor of HCCs. But in countries like Germany and Australia where the government feels an obligation to provide education, HCCs might have little chance for viability when they are unnecessary as alternatives. This

situation is tied very much to a country's market structure with respect to education. That is to say, HCCs are naturally viable in areas where there are few alternatives on the market like in Chile but not so much in places like Australia where the government's supply seems to satiate the demand. Though country's where credit is harder to come by would increase the viability of HCCs immensely. Finally there exists the practical obstacle of the legal frameworks that would or would not allow HCCs to function. As mentioned earlier, the United States has some work to do in this regard but less developed countries face a lower legal barrier as they may not have pre-existing laws which would have to be overturned. However, this convenience might be countered by their similarly less developed investment infrastructures and regulations.

Overall, when assessing the viability of HCCs, policy-makers must recognize numerous factors. First, they must consider the practicality of the model — that is, the ability to balance stakeholder interests by providing monetary incentive to investors and universities while competing with other loan options, dealing with adverse selection, and solving issues related to tracking. Second, they must take account of the culture within which they are operating, especially in terms of societal expectations of who should pay for college. Finally, policy makers must consider HCC feasibility based on the country's infrastructure in financial and investment markets development as well as the prevailing legal conditions. All of the countries analyzed in this paper, and indeed, likely in the world as well, suffer from at least one of the aforementioned issues. That said, these problems are easier to overcome in some countries like Chile rather than others. It is these countries that ought to be focused on.

## Questions/Topics for Further Research

- Legal Questions
  - o What is the current legal status of provisioning future income in various US states? What are the laws about that internationally?
  - o What process would be needed to make HCC's securitized? Is this worth it?
  - o How would the process be to get HCC's to be protected under bankruptcy laws (similar to student loans)
- Explore more fully the room for more altruistic style HCC pools. Could many scholarships be better used (could fund more people) if they were partially repaid through future income?

- How would HCCs play into issues of discrimination? Would rates be set differently for different races, genders, ethnicities, social classes, etc. on grounds of lower future earning potential? Would laws be put in place against this?
- Could HCCs help curb rising tuitions by funneling students towards schools providing the greatest value?
  - Relatedly, research more why incomes are rising. If it is indeed because of budget cuts and decreased subsidies, would an effective strategy to increasing educational access be to directly target reinstating these government funding source?
  - Alternative argument: HCCs will not help curb rising costs of college, as investors will continue to raise the income rate/time period of the contract up to the maximum point demand will take.
    - Nevertheless, HCCs do increase ACCESS, even if they don't reduce cost, because they provide access in and of themselves
      - For arguments on each side, see:
        1. <http://rooseveltinstitute.org/ny-fed-study-should-redefine-how-we-think-about-student-loans-and-college-costs/>
        2. <https://www.aei.org/publication/roosevelt-institute-misses-the-mark-on-income-share-agreements/>
        3. <http://rooseveltinstitute.org/human-capital-contracts-will-do-nothing-contain-college-costs/>
- Flesh out the potential market for HCCs in places where the government has generally provided free or nearly-free public education.
  - As noted with Germany, implementing tuitions but in the least burdensome way (HCC-funded) could help raise education quality, leading to benefits for the country's economy and society.
  - Or as in places like Australia, issues with defaulting may mean that national education is becoming a large drain on the federal budget. Would HCCs be a better solution, with the investors bearing some of the losses in exchange for potential returns?