ADDRESSING STUDENT LOAN DEBT IN THE UNITED STATES

James Hyung Jin Joo
Master of Public Policy Candidate
Spring 2018

UNIVERSITY of VIRGINIA
FRANK BATTEN SCHOOL of LEADERSHIP and PUBLIC POLICY

PREPARED FOR:

cfpb Consumer Financial Protection Bureau

Disclaimer: The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other entity.

Honor Pledge: On my honor, as a student, I have neither given nor received unauthorized aid on this assignment.

ACKNOWLEDGMENT

I would firstly like to thank the Consumer Financial Protection Bureau, especially Operations Manager Brad Hicks and Senior Advisor to the CIO Bruce Arthur for providing me with the opportunity to work on this project for them and being eager to always be helping.

I would also like to thank Professor Raymond Scheppach for always being there throughout this process. Professor Scheppach's experience as the Director of National Commission on Financing 21st Century Higher Education to always point me in the right direction. His continual feedback and assistance made this report possible.

TABLE OF CONTENTS

Executive Summary

The total amount of student loan debt outstanding in the United States is too high. Student loan borrowers collectively, more than 44 million Americans, owe more than $1.4 trillion in student loan debt. About 4.8 million students default on their loans each year, and one in every third student with loans drop out of college.

The rising student loan debt must be addressed because it costs the society in a variety of ways. Student loan debts were found to delay homeownership, marriage, and saving for retirement. It affects students' parents. Defaults affect the government and taxpayers. Individuals with student loan debt were also less likely to invest, which lead to lower number of small businesses, leading to low innovation and entrepreneurship. These will have direct adverse effects on the economy at the aggregate level, reducing GNP.

Costs associated with higher education has been increasing. For a decade between 2001-02 and 2011-12, annual increases in price of public four-year institutions ranged from 5.7 percent to 13.3 percent. In the past five years, it increased by about 3 percent each year, still greater than the rate of inflation. The higher education market lacks price control mechanisms in its current state. Recently, however, various actors have been implementing plans that address these problems.

Based on recent trends, this report proposes and analyzes four policy options:

1. Status quo
2. Expand and encourage income share agreements
3. Implement risk-sharing
4. Incentivize apprenticeship program registration

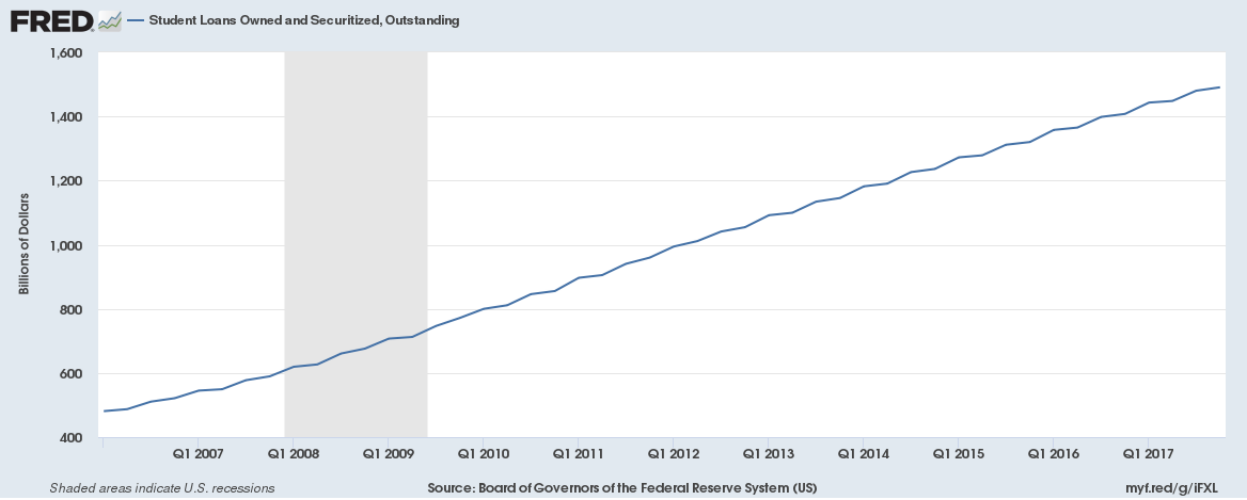
Each of these options are evaluated on criteria, which include cost-effectiveness, default rates, equity, political feasibility, and implementation.

After evaluation, this report recommends that the CFPB, in coordination with the Department of Education, to expand and encourage income share agreements. This option is project to cost $353,650.72 per student with loans prevented, helping approximately 6.4 million students from having to rely on loans by 2028.

PROBLEM STATEMENT

The total amount of student loan debt outstanding in the United States is too high. Student loan borrowers collectively, more than 44 million Americans, owe more than $1.4 trillion in student loan debt (Board of Governors of the Federal Reserve System, 2006). Student loan debt is the loan amount owed by students who attend postsecondary education institutions such as two-year colleges, four-year colleges, graduate school, etc., and student loan debt has been steadily increasing. About 4.8 million students default on their loans each year, and one in every third student with loans drop out of college (U.S. Department of Education [ED], 2017).

Figure 1: Student Loans Owned and Securitized, Outstanding



Source: Board of Governors of the Federal Reserve System, 2018

COSTS TO SOCIETY

The rising student loan debt must be addressed because it costs the society in a variety of ways. Student loan debts were found to delay homeownership, marriage, and saving for retirement. It affects students' parents. Defaults affect the government and taxpayers. Individuals with student loan debt were also less likely to invest, which lead to lower number of small businesses, leading to low innovation and entrepreneurship. These will have direct adverse effects on the economy at the aggregate level, reducing GNP.

Students

Students are the ones who are most directly affected by student loan debt. Starting in 2020, many experts predict that 60 to 65 percent of future jobs will require some level of postsecondary education (National Commission on Financing 21st Century Higher Education, 2014). Growing

demand for higher education, rising tuition, and stagnant income levels place students in difficult situations. This results in greater student debt and higher default rates that negatively impact them long after graduating. In times when repayment is difficult even after graduation, the worst hit by student loan debt are students who drop out of college (The Hechinger Report, 2017). These students take loans to attend college but do not attain the degree that will improve their income and end up with debt, increasing their likelihood of defaulting on their loans.

Multiple studies have found that student loan debts force young, prospective home buyers to defer their home purchases even when mortgage interests are at its lowest. Home buying activity for recent college graduates under age 35 is at the lowest level in decades and homeownership rate in the U.S. is at a 50-year low (Rose, 2017; Gorey, 2016). It was found that 71 percent of student loan borrowers who didn't own a home cited their debt as the cause (Gorey, 2016). After the subprime mortgage crisis, mortgage lending standards have become tighter than before, which makes it more difficult for individuals with significant amount of student loan debt to purchase a home (Rose, 2017). Among individuals between the age of 25 and 35, "homeownership rates have dropped by 8 percentage points from 2004 to 2013" (Rose, 2017). During this same time period, student debt increased from $300 billion to $1.2 trillion (Rose, 2017). The study provides tips for this demographic and claims that with greater financial planning assistance, they can overcome the challenges student debt imposes.

The Rand Corporation found that women with higher student loan debt were less likely to get married than their peers with lower or no student loan debt. The amount of student loan debt did not affect men's decision to get married. The study also found that as time goes on, young adults do decide to get married, showing that debt has a diminishing negative effect. Most of the initial data was from Department of Education's National Center for Education Statistics. The Rand Corporation conducted a follow up study that gathered information on the graduates four years later (Bozick, 2014).

Greater amount of student debt will also mean that individuals will defer investing in their retirement. Large loan repayments will leave individuals little amount to save up for retirement, the rest of their income going to pay for their monthly living expenses.

Research conducted in the United Kingdom compare debt averse attitudes of undergraduates in 2015 to that of 2002. The study found that students have a more favorable attitude to taking on student debt in 2015 than 2002. However, debt averse attitudes for lower-class students were much stronger than for upper-class students. This difference was greater than the difference in 2002. From this finding, the study concludes that debt averse attitudes are more likely to deter participation in higher education among low-income students in 2015 than in 2002 (Callender & Mason, 2017).

A 2017 survey illustrates the negative effects of student loan debts on mental health. 70 percent of respondents reported to suffer from headaches from student debt and 64.5 percent reported insomnia from stress related to student debt. More than 74 percent of respondents reported self-inflicted isolation, shutting people out of their lives due to their stress from student loans. The report provides several financial tools and emphasizes the importance of financial planning and strategy in tackling student loan debts (Insler, 2017). These behaviors can reduce productivity in

the workplace and reduce the amount they spend, both of which will negatively affect the economy.

Student's family

Rising cost of tuition makes it harder for students to afford college and many parents end up paying or taking out loans for them. This defers their investment into retirement and reduces spending in general. With less amount saved for retirement, parents who take out loans for their children would have to retire later, which would mean greater competition in the workforce.

Businesses

Greater student debt will also mean less amount of investments in business. The number of new businesses will decrease because people will have less amount of money left to invest from having to pay for their student loans. This applies to other investments such as stocks and bonds as well. With growing student loan debt, people will have less amount at their expense to invest into businesses. The lack of investments and risk averse behaviors will hinder innovation that has the potential to improve market productivity. Large amount of debt also increases interest rates, which discourage businesses from investing in private capital.

Student loan debt will also influence the job market. Businesses' demand for postsecondary education is growing, which means that its employees will demand greater salaries to repay their loans. Businesses will have to think of ways to make themselves attractive to these future employees through higher salaries and number of benefits offered, which will incur extra costs in their operations.

Government and Taxpayers

The $1.4 trillion in student loan debt means that amount is unable to be used by anyone. With that much unable to be invested or spent, the student loan debt will negatively affect the GNP for reasons briefly listed above. Although debt is not always harmful to the economy, defaults pose serious threats.

Defaults mean costs to the government and taxpayers. When students default on their loans, it is up to the federal government, who provide many of these loans, to cover the defaults with taxes. Greater number of defaults and greater amount defaulted would mean higher taxes and more costs to taxpayers.

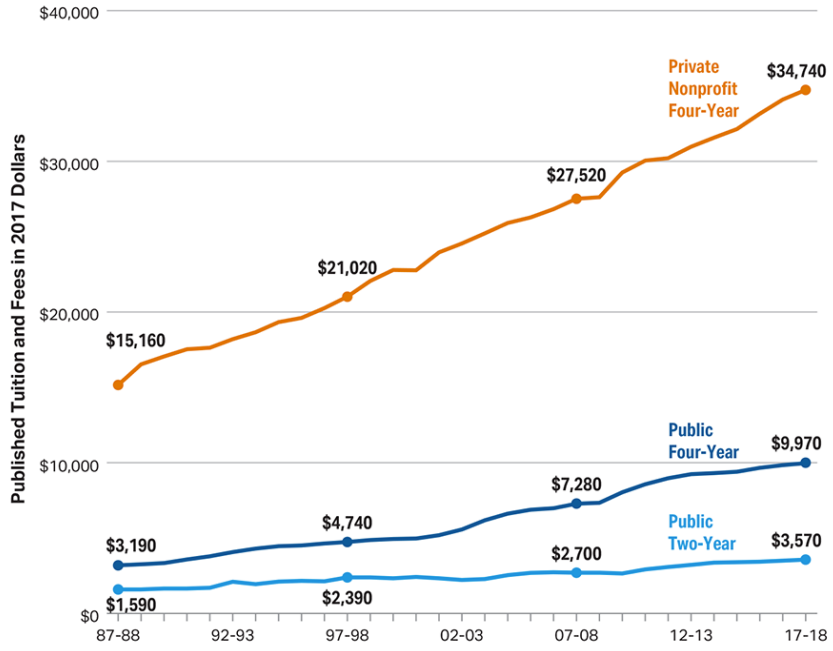
COST OF POSTSECONDARY EDUCATION

Costs associated with higher education has been increasing while earnings after graduation are low. These costs not only include tuition, but also learning materials, housing, and transportation. For a decade between 2001-02 and 2011-12, annual increases in price of public four-year institutions ranged from 5.7 percent to 13.3 percent (College Board, 2017). In the past five years, it increased by about 3 percent each year, still greater than the rate of inflation (Board of Governors of the Federal Reserve System, 2006).

Compared to costs in 1987-88, the cost of public two-year colleges has grown 2.25 times, private nonprofit four-year colleges 2.29 times, and public four-year colleges 3.13 times (see Figure 1). Between 1983 and 2013, tuition and fees for in-state students attending public four-year colleges increased by $6,324 in real terms, while income for middle 20 percent of U.S. families increased by $8,936 in real terms (College Board, 2017). This means that college costs for one student takes up as much as 71 percent of middle-class income over the past 30 years. Today, even though about 70 percent of all postsecondary students borrow loans, 93 percent of students rely on some level of assistance to complete their degree compared to that of 45 percent in 1993 ("Student Loan," 2018; The Institute for College Access & Success, 2014; Graf, 2015; Scott-Clayton, 2018).

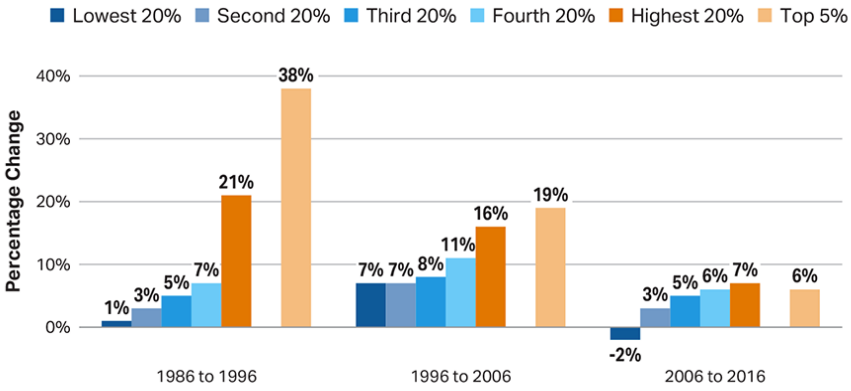
Rising costs of postsecondary education would not be a problem if incomes were growing at a similar rate. But income has been slow to recover from the Great Recession. In the decade of 2006-16, the average income of families in the top 20 percent rose by only 7 percent and increases for families in the lower quintiles were smaller (see Figure 2). Rising costs and stagnant incomes is one of the many factors that contribute to the rising student debt.

Figure 2: Average Published Tuition and Fees in 2017 Dollars by Sector, 1987-88 to 2017-18



Source: College Board, 2017

Figure 3: Percentage Change in Inflation-Adjusted Mean Family Income by Quintile, 1986 to 1996, 1996 to 2006, and 2006 to 2016



	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	Top 5%
$ Change from 1986 to 2016	$970	$5,160	$11,270	$23,190	$80,890	$176,240
% Change from 1986 to 2016	6%	13%	18%	26%	51%	73%
2016 Income Bracket	$32,400 or less	$32,401 to $57,944	$57,945 to $89,769	$89,770 to $139,568	$139,569 or higher	$251,183 or higher
2016 Mean Income	$18,200	$44,940	$72,900	$111,250	$239,490	$417,090

Source: College Board, 2017

Possible Drivers

The rising cost of tuition can be attributed to what postsecondary institutions compete on in the higher education market. Rather than focusing on the quality of education at these institutions, the institutions focus on the school's amenities, research, sports, and prestige in order to attract students. This is the result of students not having an accessible metric for measuring quality of education provided by these institutions and minimal government intervention in the higher education market. Other than appropriating funding for their public postsecondary institutions, which are susceptible of being crowded out by other programs like Medicare, state governments as well as the federal government lack market control systems such as taxes or caps to keep tuition costs down.

Another contributor to the rising cost is the growing demand for higher education. By 2020, 60 to 65 percent of jobs are projected to require postsecondary degrees. This would increase student enrollment into postsecondary institutions that can increase tuition in response to the growing demand. All this has been happening since the Great Recession while income levels have stayed relatively stagnant.

Existing Federal Laws

Higher Education Act of 1965

The Higher Education Act of 1965 was a law designed to strengthen the resources of colleges and universities in the United States and provide financial assistance for postsecondary students. The HEA increased federal appropriations to postsecondary institutions, created scholarship programs, and provided low interest loans to students. This legislation laid the foundation for major postsecondary education assistance programs, and it has been amended and renewed ever since while maintaining its basic provisions (Serna, 2014; Selingo, 2014).

- Pell Grant – The federal government provides subsidies to students who are working toward an undergraduate degree and who demonstrate financial need determined by the Free Application for Financial Student Aid (FAFSA). The Department of Education administers the Pell Grant program and approximately 5,400 postsecondary institutions participate in the program (ED, 2015).
- Federal Direct Student Loan Program (FDLP) – The federal government, through the Department of Education and funding from the Treasury, directly provides low-interest loans for students and parents who need financial assistance to attend postsecondary institutions (Federal Student Aid, n.d.).
- Federal Family Education Loan Program (FFEL) – This program was funded by public-private partnerships administered at the state and local level. Postsecondary loans are provided by private lenders (e.g. Sallie Mae) and is guaranteed by the federal government. State and local governments pay lenders when borrowers default, who are then paid by the Department of Education (Federal Student Aid, n.d.).

Healthcare and Education Reconciliation Act of 2010

The Healthcare and Education Reconciliation Act of 2010 included the Student Aid and Fiscal Responsibility Act of 2009 (SAFRA). SAFRA ended the FFEL and established the FDLP as the sole government-backed loan program. The move to have the government directly lend loans and end the public-private partnerships was projected to save the government approximately $61 billion. More than half of the estimated $61 billion savings will be used to expanded the federal Pell Grant scholarship award and will link the grant to changes in the Consumer Price Index (Student Aid and Fiscal Responsibility Act of 2009, 2010). Other provisions include,

- Starting in 2014, new borrowers who qualify can cap their repayment amount each month to 10 percent of their discretionary income, which was previously 15 percent
- Starting in 2014, new borrowers who make timely payments after 20 years can have their loans forgiven, which was previously 25 years
- $2.55 billion will be allocated to support minority-serving institutions, $2 billion to community colleges, and $750 million to college access and completion programs (Anderson, 2010)

Regulators

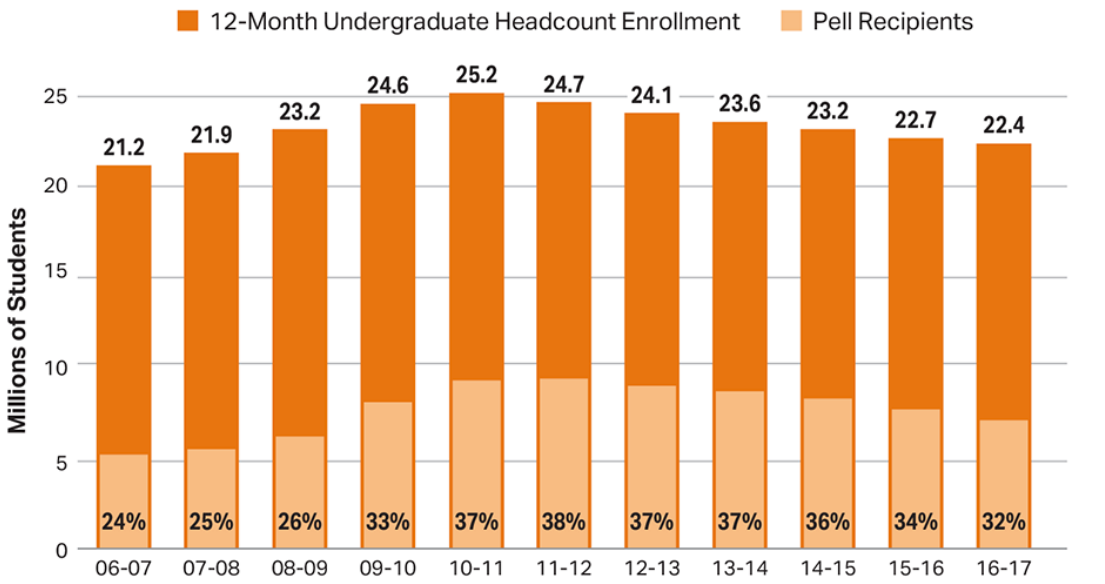
Two main regulators of student financial assistance are the Department of Education and the Consumer Financial Protection Bureau. The DOE focuses mostly on federal loans and grants while the CFPB focuses on keeping private student lenders accountable. Before the Dodd-Frank Wall Street Reform and Consumer Protection Act, which includes the founding of CFPB, "there was no federal supervisory program over nonbanks that issued student loans" (Office of Public Affairs, 2012). The reforms created a private student loan ombudsman to assist borrowers and review complaints, which are used to develop recommendations to Congress and other federal government agencies. In terms of dealing with complaints made to the CFPB about federal loans, CFPB works closely with DOE to investigate these complaints.

Current Policies

Federal government

One major federal aid policy for postsecondary education is Pell grants, and its effectiveness has been widely studied. In several studies, it was found that larger grants are positively correlated with enrollment of price-sensitive students to postsecondary institutions. These findings suggest that, because grants are aimed to help lower socioeconomic families, Pell grants fulfill its intended purpose of increasing enrollment of students from low-income families.

Figure 4: Undergraduate Enrollment and Percentage of Undergraduate Students Receiving Pell Grants, 2006-07 to 2016-17



Source: College Board

Students' price sensitivity to tuition and fees evidence the positive impact of grants on improving enrollment rates, reducing barriers to access, and persistence. Higher tuition and fees were shown to decrease enrollment—3 to 5 percentage points for every $1,000 increase in cost. Larger grants make higher education more accessible for low-income families. It was also found that grants are more effective than loans at keeping students in school to complete their degree (Snyder, 2014).

However, the current Pell grant system faces some major problems. Over the past 10 years, Pell grants awards have increased by 12 percent in inflation-adjusted dollars. This covers only 63 percent of average public university tuition and fees, compared to 75 percent in 2004-05. This means that Pell grants have been slow to catch up to the rising costs of public postsecondary institutions, reducing Pell grants' ability to support prospective postsecondary students. Complexity in the application for student aid can deter low-income, nontraditional, first-generation, and underrepresented students from applying. Assistance during the FAFSA completion process, compared to no assistance, improved students' likelihood of completing at least two years of college. Complexity of student aid prevents grants from assisting students who need it the most.

Another major federal aid policy for postsecondary education is loans. Loans make up the largest portion of student aid. In 2016-17, total federal loans amounted to $94.8 billion (College Board, 2017. However, research on loans has not been able to determine a better return on investment. Loans are not as effective as grants in improving college access and persistence from low-income families. Students and families, especially those from low-income and underrepresented backgrounds, are debt averse, and these individuals and families see taking on debt as a barrier to access, often lacking experience with credit and debt and lacking information which deter them from taking on loans. Federal loans also have low standards for approving loans and does not

underwrite loans. This can jeopardize the student's persistence and, if graduate, repayment if the school is low performing one.

State

Because of the Great Recession, state spending on higher education has been slow to reach prerecession per student spending levels. State and local revenue allocated to higher education support in 2014 was 5.7 percent, a slight increase from 5.5 percent in 2013 but otherwise the lowest since 1990 (State Higher Education Executive Officers, 2017).

Higher education funding is susceptible to being crowded out by other spending, particularly Medicare. Medicare has been taking a growing portion of the state budget and is placing pressure on their discretionary revenue. It was found that states that were planned to have the largest Medicare increases were states where higher education funding fell most. This crowding out effect has led to higher education sustaining the largest decrease in funding, falling from 14 percent of total state spending in 1990 to 12 percent in 2014 (White & Crane, 2014).

No two states have the same policies on higher education funding but most finance public colleges and universities through base-plus funding, which is the method many states have historically using. Base-plus funding is the continuation of funding for institutions from one budget cycle to the next that includes percentage increases or decreases from the previous budget cycle. This system has minimal administration costs, simple to use, and is similar to the funding process for other state agencies. Although this system provides institutions with reliability and predictability, it fails to incentivize colleges and universities to be more productive or efficient. It also fails to give states the proper tools for adapting to the changing circumstances of institutions, and favors politically powerful and well-established institutions over newer institutions.

States have traditionally been using enrollment as a measure for institutional allocation of higher education funding. Several states have recognized the disconnect between enrollment and quality of education provided by these institutions. These states have begun to adopt an outcomes-based funding system that would primarily look at degree or credential completion.

Private financing

More than half of American higher education funding comes from private sources that include tuition paid by the student and family, employers, philanthropists, and others. However, there are many challenges in the private financing system. The system allows competition but not in the dimensions that matter such as cost and quality. Students and families often lack the information necessary to effectively compare the cost of different loans, and data on student outcomes after graduation are scarce or nonexistent. This allows postsecondary institutions to compete on different grounds such as prestige, sports, and amenities. Additionally, the private loan market makes up less than 10 percent of the loan market and underwrites loans based on credit scores

and credit-worthy cosigners, which deprives access to loans from students who neither have a credit history nor an eligible cosigner (Kelly, 2014).

Many employers invest a significant amount in postsecondary education and job training for their employees through tuition reimbursement. Corporations were found to spend about $177 billion per year in formal training, with 16 percent going to tuition reimbursement programs (Kelly, 2014). Despite the amount corporations spend in training, there are few studies on the effectiveness and cost of these programs, which allow institutions to compete in other areas as mentioned earlier. Employers also channel training investments for people who are already working for them and who already have a bachelor's degree. One study found that nearly 60 percent of training investments went to employees with a bachelor's degree and that only 17 percent went to employees with a high school diploma or less (Kelly, 2014).

Emerging Trends

Federal government

The Obama administration has implemented a few policies to curb the rising student loan debt. The administration proposed having the government cover the average cost of community college for students who maintain good grades. The administration has also expanded the Income-Based Repayment program, which enables students to make loan payments that are no more than a reasonable share of their discretionary income— generally 10 percent—over a longer period of time. Qualifying borrowers who work full-time in public service jobs, usually around 10 years, may also get some of the balance of their loans forgiven through the Public Service Loan Forgiveness Program. There are currently four types of income-driven repayment plans provided by the federal government. CFPB provided recommendations for dealing with issues in for-profit colleges (Holland, 2015).

The CFPB has implemented several programs to curb the rise of student loan debts. One program is a Know Before You Owe "Financial Aid Shopping Sheet," which provide students and families with information about the features of loans and monthly debt repayments after graduation. The Bureau also released Student Debt Repayment Assistant, an online interactive tool that help individuals navigate their repayment options. CFPB also continues to take complaints about student loans to provide recommendations to Congress and other federal agencies (Office of Public Affairs, 2012).

States

In order to curb the costs of higher education, several states in the last decade have instituted state-mandated caps, cuts, and freezes. In 2007, Virginia created a fund that would be distributed to institutions that kept tuition increases less than 6 percent. This rate changed to 4 percent in 2008, but because of a tight budget, the fund was discontinued in 2010. In 2015, Washington mandated that four-year public institutions cut costs by 15 to 20 percent in 2016. Minnesota and Kansas mandated similar cuts and freezes in 2015 and 2016 respectively. Michigan placed a

tuition cap in 2013. If the cap was to be exceeded, the institution will not receive state funding. In 2015, two institutions, Eastern Michigan University and Oakland University, ignored this cap because the state funding losses are negligible for them (National Commission on Financing 21st Century Higher Education, 2014).

Some states offer Children's Saving Accounts, a program in which families and donors save for children college education in the future (Holland, 2015). The federal government appears to have more power and jurisdiction when it comes to funding education in the state through Pell Grants and Grad PLUS loans (Delisle, 2017). However, states do have their own loan refinancing and forgiveness programs that has criteria that individuals must meet to be eligible for (Lockert, 2016; The College Investor, 2017).

Postsecondary institutions

Some schools are promising free tuition for families earning less than $125,000 a year, but these schools have higher tuition and larger endowments to work with (Holland, 2015).

Purdue University and the Purdue Research Foundation is offering an Income Share Agreement (ISA) called Back a Boiler – ISA Fund. It is a contractual agreement in which the student receives education funding in exchange of an agreed upon percentage of the student's future income for an agreed amount of time. This offers students who qualify more options to choose from in paying for higher education. (Purdue University, n.d.)

Beginning this fall, University of Wisconsin-Madison is offering free tuition for in-state students whose family's annual household adjusted gross income is $56,000 or less. The school expects more than 800 students to be eligible for the program. University of Wisconsin-Madison is the latest of several colleges that offer free tuition (O'Brien, 2018; Dickler, 2017).

Private sector

Companies like Siemens and MTU America sponsor apprenticeship programs that provide on-the-job training for employees (Peralta, 2015; Schwartz, 2013). Investments in these programs by these businesses develop capable employees while reducing the need for student loans. Apprenticeship programs benefit students by advancing their careers without have to incur debt.

Some private companies have begun to partner with institutions to provide their employees with higher education assistance. Companies like Starbucks and Chrysler target their employees without bachelor's degrees to apply to Arizona State University and Strayer University respectively and reimburse their tuition (Kelly). Pizza Hut also signed a partnership with Excelsior College to provide tuition assistance to their employees (Kelly).

A few new lenders are using different ways of evaluating creditworthiness. Rather than focusing on the student's past credit history, these lenders incorporate forward-looking dimensions like the student's grades, the program enrolled, college profile, etc. to determine the borrower's risk profile. These lenders include Sofi, MPOWER, Climb Credit, and Skills Fund (Kelly).

CRITERIA

Cost effectiveness *(25%)*

Cost effectiveness of alternatives will be measured by the total cost discounted over 10 years per student loan prevented. The US Census demographic projections are used to find the number of individuals between age 18 and 24 for the next 10 years. It is then assumed that the number of individuals between the age 18 and 24 with some postsecondary education remains constant at 60.8 percent (the 2017 rate) over 10 years, and a 3 percent discount rate is assumed for each year (U.S. Census, 2017).

The number of students with loans outstanding and costs are projected out for each alternative, and then the cost effectiveness measures are compared to the base case, or the status quo. The difference between these numbers are the number of students taking loans prevented. In other words, this is the number of students that would have taken loans without intervention. This number is then incorporated into a ratio with total costs of each alternative, which includes the sum of the total outstanding student loan debt, administrative costs, and any other additional costs associated with each option. This ratio will generate the cost per student taking loans prevented.

Defaults *(25%)*

Higher debt is perceived to be highly correlated with increasing risk of defaults but that is not the case. The default rate on student loans were found to be highest for those with the smallest student debts. Among who borrow less than $5,000, the default rate is 34 percent. For those borrowing more than $100,000, the default rate is 18 percent. For graduate borrowers, it was seven percent (Dynarski, 2016).

According to Dynarski (2016) based on Looney and Yannelis' study,

> The big borrowers tend to be those who attended graduate school, or who earned undergraduate degrees at expensive, elite institutions. These borrowers spent many years in college, and so racked up many years of debt. But they built up a lot of human capital during their college careers (and brought a lot with them in the first place), which pays off in the labor market.
>
> The small borrowers tend to be those who spent just a year or two at a for-profit or community college. They spent little time in college, and so racked up little debt. But they also built up little human capital (and had low stocks to begin with), and so do relatively poorly in the labor market.

This points to the difference in earnings among graduates of for-profit or community colleges and four-year colleges. For-profit and community college graduates were found to have a median income of $22,000 in 2010 and that 44 percent of defaults were from students who attended for-profit colleges. Typical earnings for graduates from selective four-year colleges was $49,000 and for graduates from less selective ones was $35,000 (Dynarski, 2016; Looney &Yannelis, 2016).

Because defaults not only result in losses for everyone involved (students, families, lenders, government, taxpayers) but also are strongly associated with low-income borrowers who take out small loans, assessing each alternative's ability to lower the default rate to avoid losses and support low-income and nontraditional students gain greater access to higher education will be a criterion with significant weight.

Fairness/Equity *(20%)*

Education is seen as the medium that offers the most social mobility. However, the costs associated with access to higher education and students that have a poor background (i.e. poorly educated family, growing up in a poverty-stricken, high-crime-rate community) make it increasingly difficult for individuals to afford higher education.

Lending programs are susceptible to benefiting the middle- and upper-class borrowers a lot more than the working-class borrowers (e.g. employer training investments). Some colleges have already implemented programs that place a cap in the amount of debt a student with low family income will graduate with, but most of these colleges are prestigious institutions with large endowments and small number of students from working-class families (Fried, 2017). Students from middle- and upper-class families usually have better credit scores and take out larger loans, both of which are reasons lenders find these borrowers more attractive than students from working-class families (Breitwieser et al., 2017).

Rate of defaults were found to be highest in two-year colleges for loans less than $10,000 (College Board, 2017). Attending a two-year college is usually more affordable than attending a four-year college, which is one of the reasons many students with low family income apply to two-year colleges. However, the difference in the level of prestige associated with two-year and four-year colleges makes finding employment more difficult for two-year college graduates. Students from poor families are also vulnerable to information asymmetry, lacking the information necessary to take out and repay loans, which contributes to higher default rates.

Therefore, fairness and equity should be an important criterion that should be weighted significantly to measure its impact. This criterion will be measured by how much low to medium income families will benefit compared to high income families. This criterion will consider how each alternative will make postsecondary education affordable and accessible for low to medium income families compared to high income families.

Political feasibility/Sustainability *(20%)*

Political feasibility of alternatives will depend on the types of decision makers and stakeholders since each of the proposed alternatives will go through the legislature. Decision makers of these alternatives will include the U.S. Senate Committee on Health, Education, Labor and Pensions and the U.S. House Committee on Education and the Workforce. The Senate Committee has several notable members like Senator Elizabeth Warren, who advocates for CFPB, and Senator Bernie Sanders, who advocates for higher education accessibility.

Decision makers also include the current leadership in the federal government. The Republican leadership in Congress and the President's stance on higher education must be considered for any of the alternatives to have political feasibility.

State governments also play a part in the decision-making process. It will be up to the states to implement and/or enforce the alternatives. Each alternative must ensure that states will support the strategy and have the resources to follow through with its implementation. State priorities, particularly in its budget and spending, must also be considered for the alternatives to be sustainable.

Each alternative should identify the stakeholders and their likely stance on the alternative. By projecting which groups will have the most political influence for each alternative will determine which alternative will move toward implementation most swiftly. This will be measured by the degree of ownership displayed by supporting parties. The more sluggish the alternative moves towards implementation, the more likely it is that the alternative will fail and the more time for student debt to continue rising.

Because each alternative will have to go through the legislature, it is critical that there is sufficient support from various influential groups, parties, and individuals. There are a few stakeholders that each alternative should mention when discussing political feasibility. Republicans will tend to discourage government intervention in reducing student loan debt, leaving the education market to handle it on its own. Democrats will encourage the regulation of student loans and see it as a way to increase access to education. Private lenders will oppose changes that will hurt their business, and education access advocacy groups will support these interventions. Despite this general divide, it is also critical that the alternatives encourage cooperation among various participants in order to make sure the alternatives have a sustainable, long-term impact, which can be measured by ownership displayed by participating parties, complexity associated with implementation for each alternative, and number of agencies that need to be involved.

Implementation *(10%)*

Implementation will be evaluated for each option. To gauge the level of implementation ability for each option, several factors will be considered. Administrative backing is one factor that will be considered. If the staff who will be running the program under each option have problems with or disagree with the mission, the option will not be functional or as efficient because it does not have support from the staff. Profile of the agencies involved in implementation will be another factor that will be considered. Agencies involved should have a history of dealing with implementing these types of options and be willing to support them. Complexity is another factor that will help us evaluate implementation. Complex options are usually more difficult to implement. Therefore, if an option has multiple components and challenges, the option will be low on the implementation criterion because it is difficult to carry out.

ALTERNATIVES

Option 1: Status quo

In observing the trends of past several decades, the cost of tuition and fees will continue to rise at a much faster rate than the rise of income. Coupled with relatively stagnant federal grants and state investment, people will have no choice but to borrow more money to pay for college. This will continue to increase the total amount of student loan debt outstanding.

This trend will most likely impact lower socioeconomic families the most. Low-income, underrepresented, first-generation students are found to be price sensitive and debt averse. Having to take out loans will be a barrier that prevents these students from enrolling and persisting in postsecondary education. With the growth in the average debt for each student, students and their families will have less disposable income and will have to defer on investments such as retirement savings and homeownership.

Letting present trends continue will adversely affect businesses and the economy as a whole. High debt will discourage students from investing into new businesses, depriving the economy of new and innovative ideas. With the rising the amount of debt owed and the growth of the number of people with debt, people will be less willing to invest in stocks, bonds, capital, etc. People will generally tend to spend less due to student debt constraining their disposable income. Growing debt, which increases the likelihood of borrowers defaulting, will deprive the government of revenue that can be spent on services for taxpayers. All of these behaviors will negatively impact the GNP.

Option 2: Expand income share agreements

One of the emerging trends for reducing student loan debt is loan repayment in the form of income share agreements (ISA). ISAs have been around since 1955 when Milton Friedman first introduced it in the context of funding education (Salerno, 2014). ISA consists of a fundraiser and funder. Funders provide fundraisers with upfront capital in return for the fundraiser's future potential earnings. Terms of ISAs are very flexible. The length, rate, and payment conditions can vary. However, ISAs are contracts, not loans, because the amount of upfront capital is disconnected from the amount fundraisers raise.

Salerno provides a great example of how ISAs work in a college financing context,

> [C]onsider a college graduate who assumes $25,000 in unsubsidized federal student loan debt at 6.8 percent interest21 and pays it off over the standard 10year term. Assuming a straight repayment schedule, she will end up paying $34,524 in total at a fixed $287.70 per month regardless of her available income.
>
> Now assume that that graduate instead successfully raises $25,000 through an ISA and agrees to share 6.8 percent of her income for the next 10 years. As a matter of simplicity,

let the graduate's annual salary in year one be $45,000 and grow by 3 percent per year. Over the course of 10 years, she would end up sharing $35,079 with the ISA's backers.

At first glance, the programs seem fairly equal, but now consider what would happen to that fictitious graduate if she loses her job in year 5 and is unemployed for 7 months of that year before finding a new job that again puts her back at $45,000 per year. In this case, she would still have to make the full $34,524 payment on her loan (at $287.70 per month), but in the ISA, she now only ends up sharing $30,483. Because she continued to share 6.8 percent of her income throughout the term of her agreement, her contract ended successfully, and her backer absorbed the $5,000 loss.

For this option, the Department of Education will expand its current initiative on income share agreement plans. The Department of Education currently offers four different types of income driven repayment plans: REPAYE, PAYE, IBR, and ICR. It requires students to apply to these programs, and the amount allocated to these plans are limited. This will mean transferring a portion from the amount allocated for Direct Loans to income share agreement plans. There are proposals to consolidate these four plans into a single comprehensive income contingent plan in the next few years.

Option 3: Implement risk-sharing

Risk-sharing will establish an institutional accountability system in which institutions with poor loan repayment performance will have to pay a portion of that unrepaid loan amount to the federal loan program, which can be redistributed to high performing loan institutions. Risk-sharing considers loan outcomes after five years, which is found to be a reliable predictor of long-term payments. It will set a target for institutions to achieve such as 20 percent of the aggregate loans repaid after that five-year window. Penalties for institutions not meeting that target would vary with the distance from that target that can be split into brackets. For example, institutions whose cohorts repaid below the 20 percent target but above 15 percent would have to reimburse the federal government 25 percent of the difference of the 20 percent target and the amount repaid, while institutions whose cohorts repaid below 15 percent would have to pay 100 percent of the difference (Chou et al., 2017). In other words, similar to a progressive tax bracket, penalties would be greater for institutions that are farther from the goal. Repayment risks that students face will also apply to institutions, tying incentives together. Institutions will be incentivized to meet the repayment targets in order to avoid the penalty by creating systems that support its cohort's ability to repay its loans.

This option offers better measurement of institutional success than default rates, which is currently used as the primary metric for loan accountability. Although default rates can show students' financial distress, it does not offer any insights into problems in the loan repayment system itself. Using repayment rate as the metric will shed light on the systematic problems. The repayment rate used in this option also provides more detailed assessment of risk to taxpayers and before any defaults occur, and avoids dealing with the issue with binary thresholds.

This option will be implemented by new legislation. A federal legislation that applies to all states and postsecondary institutions would be the most optimal. Legislation can be passed at the state level as well, but states would be the ones enforcing this rule.

Option 4: Expand Apprenticeship Programs

An apprenticeship is a job where an employee learns new skills through training programs at his or her job. An employer chooses to sponsor an apprenticeship program and registers the program with the federal government through a system created by the National Apprenticeship Act of 1937, which is overseen by the Department of Labor and individual states (Olinsky, 2013). The apprenticeship program will list, for each apprenticeship occupation, the details of the responsibilities, duration, and standards necessary for completion. After the program is completed, the government issues a nationally recognized certificate. Apprenticeships are able to prepare workers to master occupational skills and become more productive employees for the employer. It also allows employees to achieve greater career success. Under apprenticeship programs, employees are able to gain skills and knowledge while earning income and contributing productive work for their employer.

Despite the formal apprenticeship registration system being around since 1937, workers and employers in the US are unfamiliar with apprenticeship programs. In 2012, there were only 358,000 active apprentices registered, which is only about 7 percent of the number of apprenticeships in England (Olinsky, 2013). Apprentices make up only about 0.2 percent of the US labor force (Lerman, 2014).

Apprenticeships are run by employers and are usually the ones who register the programs with the federal government. The costs of apprenticeship programs are almost entirely paid by the employer. Each year, more than $1 billion are invested in apprentice training and $10 billion in apprentice wages and benefits (Olinsky, 2013). Employers can coordinate with high schools to attract potential apprentices. With the federal and state government providing grants for apprenticeship programs and offering tax credits for employers for each registered apprentice, apprenticeship programs in the US can be expanded.

OPTION EVALUATION

Outcomes Matrix

	Option 1: status quo	**Option 2: Income-share**	Option 3: Risk-share	Option 5: Employer
Cost effectiveness (25%)	-	$353,650.72	$1,351,608.85	$507,702.05
Default rate (25%)	High	Medium	Low	Medium
Fairness/Equity (20%)	Low	Medium	High	Low
Political Feasibility (20%)	Medium	High	Medium	Medium
Implementation (10%)	Medium	High	Medium	High

Option 1: Status quo

Cost Efficiency
Letting present trends continue would mean there won't be any changes to student loan debt. There will not be any intervention, which would mean that student loan debt will continue to increase with more students taking loans.

Default rate
Default rates will either continue to rise or remain unchanged. It is currently at 11.5 percent and has been rising in the past. With the continuing increase in the cost of tuition and demand for higher education, default rates are likely to continue to hike.

Fairness/Equity
Fairness is low for this option. There have been historical measures taken to ensure greater access to higher education in the US, but because of the rising costs associated with attending postsecondary institutions, it is still difficult for low-income students to continue onto higher education. Low-income students are shown to be more debt-averse than higher income students, which indicate that low-income students are less likely to attend postsecondary institutions. Families of low-income students also do not have the means to take out loans for the student.

Political Feasibility
Political feasibility for the status quo is medium. It is the easiest option because it does not require additional action, but the trends in higher education indicate to many politicians and citizens that there must be changes made. The affordability of postsecondary education has been on platforms of some presidential candidates in 2016. Rising costs of tuition has been a concern for many people since the Great Recession, a period in which many individuals continued onto

higher education to improve their chances of finding a job. With so much attention on the state of higher education in the US, there can be some push back for letting present trends continue.

Implementation
No action is necessary for this option. It will continue current operations and trends. However, due to recently growing concerns with rising student loan debt, this option will face opposition from groups who believe they must act to curb this problem.

Option 2: Income Share Agreement

Cost Efficiency
Income share agreements are not loans, rather they are contracts between the funder and the fundraiser. This means that individuals who are in an income share agreement do not have loans. As more students begin to have this option as alternatives to traditional mortgage-style loans, the number of students needing to take out loans for postsecondary education will decrease. This option, which is projected to decrease the number of student loans by 3 percentage points, will cost $353,650.72 per student loan prevented, preventing approximately 6.4 million students from having to rely on loans by 2028.

Default
Default rates under this option will significantly decrease. Because the repayment amount is tied to the student's future income for an agreed term, which usually around 20 years, it is practically impossible for the student under this program. For example, if a student is unemployed and does not have income, they won't have to pay the funder until the student finds a source of income. Additionally, if there is any outstanding amount after the term is over, the amount is forgiven. With these measures against defaults in income share agreement programs, the expansion of income share agreements will bring down the national default rate on student loans.

Fairness/Equity
Fairness is medium for this option. Although this option will allow more students to have access to postsecondary education and make it more affordable, it will tend to prefer a certain type of students. Students must apply to income share agreement programs, which means the reviewers of the applications will likely select students who are pursuing occupations in STEM fields or other stable and high-income positions to ensure that the funders end up with revenue instead of a loss. Students from medium- to high-income households will likely be preferred over low-income students because students from wealthier families will be less likely to be unemployed due to familial assistance.

Political Feasibility
Political feasibility for this option is high. There are four income driven repayment plans started by the federal government in recent years already, which is a strong indicator that, with evidence of early success, income share agreements are likely to expand. The four plans are REPAYE, PAYE, IBR, and ICR. There are plans to merge the four into one in a few years (Office, 2017). Purdue University have an income share agreement program called Back a Boiler that have been rapidly expanding in the past two years from 182 students to 302 students, funding almost $6 million to those students (Cartwright, 2018). Other countries, such as Australia and its HECS-

HELP program, have been successfully using this program since its introduction in 1989. With this movement towards income share agreements, its expansion should have high political feasibility.

Implementation
The federal government already have four income driven repayment plans in operation, with plans to merge them into one. The CFPB can suggest that the Department of Education model the plan on systems in England and Australia, where income share agreements are the main source of postsecondary funding. CFPB, in coordination with the Department of Education can encourage the private sector to participate through tax credit and grants to provide students with more options. However, the CFPB and Department of Education should establish a formal registration system for private entities to register their income share agreement plans.

Option 3: Risk sharing

Cost Efficiency
States might incur additional administrative costs for reviewing repayment rate performance of public postsecondary institutions, which is the driving contributor to higher cost associated with this option. If states are able to shift their budget allocations to the review process rather than add more funding, this option would be cheaper to administer. This option addresses repayment rates more than number of loans, so it is projected to decrease number of student loans less drastically. This option, which is projected to decrease number of student loans by 1 percentage point after 10 years, will cost $1,351,608.85 per student loan prevented, preventing approximately 2.1 million students from having to rely on loans by 2028.

Default
Default rate will be low for this option. Ensuring that students make repayments will be the focus of postsecondary institutions. Because the amount of penalty the institution will incur if it fails to meet the repayment goal, institutions will create initiatives to assist students in meeting their five-year repayment. Higher rate of repayment means lower rate of defaults.

Fairness/Equity
Fairness will be high for this option. With penalties in place, it will be up to institutions to meet the repayment rate goal. Initiatives that institutions create to improve repayment rates will offer students the tools and resources to meeting monthly repayments, which will help them avoid defaulting on their loans. These programs will benefit low-income students who usually have more difficulty meeting repayments more than high-income students. Under this option, institutions may admit more wealthier students than poorer students to avoid low repayment rate penalties. Reviewing agencies should incorporate diversity of the institution when evaluating to discourage this type of activity.

Political Feasibility
Political feasibility will be medium for this option. Currently, government backed risk-sharing programs do not exist in the US. However, there has been recent traction in the support of this option. An amendment in the Higher Education Act required postsecondary institutions where at least 25 percent of students participate in Direct Loans to accept risk-sharing based on the default

rate (NAICU, 2016). Several bills have been introduced to Congress, and many studies estimate positive outcomes from risk-sharing and support its implementation. This option will experience significant push back from postsecondary institutions who would like to avoid having to pay any type of penalty.

Implementation
Implementation for this option is medium. Legislation would be passed for this option. Because it would mean penalties for postsecondary institutions, institutions with poor repayment rates will oppose this option. However, states would be the ones reviewing institutions' performance, and they will support this program if they believe that institutions should have more "skin in the game" and assist students make repayments. Although passing legislation to enforce this option might face challenges, it is not a complex option. The CFPB and Department of Education should publish reports that evidence benefits of risk-sharing plans to be shared with Congress and state legislatures to encourage legislative action.

Option 4: Apprenticeship

Cost Efficiency
Apprenticeship programs eliminate the need for the student to taking out loans. Since participants in the program will be paid while they learn skills and the programs will be paid by the employers, students will not have to take out loans. However, this option will not be available for everyone and applies only for students who are willing to attend apprenticeship programs. This option, which is projected to decrease number of student loans by 2 percentage points after 10 years, will cost $507,702.05 per student loan prevented, preventing approximately 2.1 million loans by 2028

Default
Default rates will be medium for this option. Although individuals in apprenticeship programs won't default, they make up a small portion of the number of students of higher education. Participants of apprenticeship programs won't default because apprenticeships are investments made by the employer for its employees.

Fairness/Equity
Fairness will be medium for this option. This option will depend on which high schools and what types of applicant employers would prefer to have participate in the program. Although it will offer these groups an additional option for a loan-free postsecondary education, it can limit its accessibility to these groups. For example, employers would prefer to offer apprenticeships to students in high performing high schools over low performing high schools who have greater need for this option. And it is usually low-income neighborhoods that have low performing high schools.

Political Feasibility
Political feasibility will be medium for this option. Because people are unfamiliar with apprenticeships, it will take a few years of publicizing this option. However, the state of Georgia and Wisconsin currently operate and offer apprenticeship programs to their high school students. Other private companies such as Siemens in North Carolina and Tognum America (now MTU

America) in South Carolina offer apprenticeship programs (Lerman, 2014, Schwartz, 2013). When the public becomes more comfortable with apprenticeship programs, expansion of apprenticeship programs can be modeled after these existing ones.

Implementation
Implementation for this option is high. The CFPB and Department of Education will disseminate Information about apprenticeship programs and its benefits to high schools and private businesses. This option may involve working with state labor agencies or the U.S. Department of Labor. Employers who will be administering the program will likely support the program because of the potential of developing skilled and effective employees they can employ. Publicizing the program and providing incentives are the two key initiatives the government would need to execute.

RECOMMENDATION

Based on the analysis of the four options, I recommend **option two: expand income share agreements**. This option recommends tying repayment to the individual's income after graduation for an agreed upon term. This report considered cost effectiveness and default rate to be most important, both weighted at 25 percent, followed by fairness and political feasibility at 20 percent and implementation at 10 percent.

	Option 2: Income-share
Cost effectiveness (25%)	$353,650.72
Default rate (25%)	Medium
Fairness/Equity (20%)	Medium
Political Feasibility (20%)	High
Implementation (10%)	High

Cost effectiveness is one of the most important criteria, but it is only weighted at 25 percent due to the lack of data or estimates on number of student loans. Much of the research for each of the options discussed the benefit measures such as default rates, repayments rates, accessibility, and equity, but did not include how many student loans would be avoided. Even case examples did not include this measure. Despite these limitations, I made some assumptions based on the analysis the research provided and projected out the cost effectiveness of each option, estimating the percent of students with loans by 2028. From the cost effectiveness analysis, option two is the most cost effective. Looking at the successes of this option in England and Australia and the emerging trend towards this option (Purdue University and federal income driven repayment plans), led me to assume the highest number of student loans prevented.

Default rate is tied with cost effectiveness as the most important criteria, weighted at 25 percent. Default rates are medium for this option. Students who are part of income share agreements do not default but it still costs the funder if the amount repaid after the agreed term is less than the initial amount lent. However, the funder is aware of this, but still lends to students because if the student is financially successful, the funder makes a profit at the end of the contract. It is also beneficial in that it shifts the burden of defaults from taxpayers to the funders. Although option three is projected to have a low default rate, colleges can raise cost of tuition in response the cost per student loan prevented is too high.

Although not as fair as option three, option two does better in fairness than option one and option four. Anyone can have a chance to apply to income share agreements, but funders are likely to sponsor students who will pursue high paying jobs in the future such as STEM jobs. However, this will encourage students who wouldn't have pursued postsecondary education without this option to enroll. This option also ranks high on political feasibility and implementation because there are initiatives already in place in its early stages. It is also an option people are more familiar with. Therefore, I recommend option one but since none of these options are mutually exclusive, other options can be implemented in the future in addition to expansion of income share agreements.

Implementation

Implementation of option one would require a shift of resources into the current income driven repayment plans. Budget proposals by the CFPB and Department of Education should reflect the growth in allocated funding for ISA programs. This funding will allow the program to accept more students. However, this action would require approval from Congress. To win approval, research that has been done on the success of ISA programs and the potential revenue it can bring to the government should be presented. For details on how to expand this program, the government can consult with England and Australia, both of which use ISAs for postsecondary education.

After approval and funding allocations, the CFPB and Department of Education should distribute information about the program to students to encourage application. However, this ISA program should have a cap on the total income shared to keep students from oversharing their income. The purpose of ISAs is not to replace regular loans but to supplement existing systems with an alternative. ISAs should also be presented as a refinancing tool for students who are getting ready to graduate, when students career paths are more predictable. This will help the government avoid losses through forgiveness.

The CFPB and Department of Education should also encourage other private lenders to install ISA programs through incentives such as tax credit or grants. This will be part of the approval submitted to Congress. This shifts the burden from the government to the private sector while creating greater selection of ISAs for students that best meets their needs. However, the government should create a formal registration system similar to that of the apprenticeship programs to approve private ISA programs. Due mostly to people's familiarity with this option and current endeavors to provide ISA programs, it is expected that there will be little opposition to and few challenged associated with this option.

REFERENCE

3.9 Million Students Dropped Out of College with Debt in 2015 and 2016. (n.d.). Retrieved May 3, 2018, from https://www.usnews.com/news/data-mine/articles/2017-11-07/federal-data-show-39-million-students-dropped-out-of-college-with-debt-in-2015-and-2016

An Updated Look at Student Loan Debt Repayment and Default. (n.d.). Retrieved May 3, 2018, from http://publicpolicy.wharton.upenn.edu/issue-brief/v5n6.php

Anderson, N. (2010, March 26). What would change if student lending legislation passes. *The Washington Post*. Retrieved from http://www.washingtonpost.com/wp-dyn/content/article/2010/03/25/AR2010032503578.html

Average Student Loan Debt in America: 2018 Facts & Figures. (n.d.). Retrieved May 3, 2018, from https://www.valuepenguin.com/average-student-loan-debt

Board of Governors of the Federal Reserve System (US). (2018). 20-Year Treasury Constant Maturity Rate. Retrieved May 3, 2018, from https://fred.stlouisfed.org/series/GS20

Board of Governors of the Federal Reserve System (US). (2018). Student Loans Owned and Securitized, Outstanding. Retrieved May 3, 2018, from https://fred.stlouisfed.org/series/SLOAS

Breitwieser, D. W. S., Lauren Bauer, and Audrey. (2017, April 20). Eight economic facts on higher education. Retrieved May 3, 2018, from https://www.brookings.edu/research/eight-economic-facts-on-higher-education/

Callender, C. & Mason, G. (2017). Does Student Debt Deter Higher Education Participation? New Evidence from England. *Annals of American Political and Social Science*. Retrieved from http://eprints.bbk.ac.uk/16742/1/FINAL%20Callender_Mason%20Student%20debt%2010Nov16%20v2.pdf

Carew, D. (2016). Reframing the "Free College" Debate. *Rand Corporation.* Retrieved from https://www.rand.org/blog/2016/04/reframing-the-free-college-debate.html

Changes in Family Income over Time - Trends in Higher Education - The College Board. (n.d.). Retrieved May 3, 2018, from https://trends.collegeboard.org/college-pricing/figures-tables/changes-family-income-over-time

Chapman, B. (2006). Chapter 25 Income Contingent Loans for Higher Education: International Reforms. In E. Hanushek & F. Welch (Eds.), *Handbook of the Economics of Education* (Vol. 2, pp. 1435–1503). Elsevier. https://doi.org/10.1016/S1574-0692(06)02025-3

Chapman, B., & Lounkaew, K. (2010). Income contingent student loans for Thailand: Alternatives compared. *Economics of Education Review*, *29*(5), 695–709.

https://doi.org/10.1016/j.econedurev.2010.04.002

Chou, T., Looney, A., & Watson, T. (2017 April). A Risk-Sharing Proposal for Student Loans. *The Hamilton Project*. Retrieved from http://www.hamiltonproject.org/assets/files/risk_sharing_proposal_student_loans_pp.pdf

College Board. (2017). Trends in College Pricing 2017. *College Board*. Retrieved from https://trends.collegeboard.org/sites/default/files/2017-trends-in-college-pricing_1.pdf

College Dropouts and Student Debt - LendEDU. (n.d.). Retrieved May 3, 2018, from https://lendedu.com/blog/college-dropouts-student-loan-debt/

CrowdedOut.pdf. (n.d.). Retrieved from http://web1.millercenter.org/commissions/higher-ed/CrowdedOut.pdf

Delisle, J. (2017). Two Student Loan Studies that Everyone Missed. *Brookings Institute*. Retrieved from https://www.brookings.edu/research/two-student-loan-studies-everyone-missed/

Dickler, J. (2017, August 2). These colleges are completely tuition-free. *CNBC*. Retrieved from https://www.cnbc.com/2017/08/01/these-colleges-are-completely-tuition-free.html

Dynarski, S. (2017). The Trouble with Student Loans? Low Earnings, Not High Debt. *Brookings Institute.* Retrieved from https://www.brookings.edu/research/the-trouble-with-student-loans-low-earnings-not-high-debt/#ftn10

Federal Student Aid. (n.d.) FFEL Program Lender and Guaranty Agency Reports. *Federal Student Aid*. Retrieved from https://studentaid.ed.gov/sa/about/data-center/lender-guaranty

Federal Student Aid. (n.d.) Subsidized and Unsubsidized Loans. *Federal Student Aid*. Retrieved from https://studentaid.ed.gov/sa/types/loans/subsidized-unsubsidized

Fried, C. (2017, August 19). Student loan debt: Why employers may want to help pay off college loans. *CNBC.* Retrieved May 3, 2018, from https://www.cnbc.com/2017/08/17/student-loan-debt-why-employers-may-want-to-help-pay-off-college-loans.html

Gorey, J. (2016). How Student Loan Debt Causes a Chain Reaction in the Housing Market. *Boston Globe*. Retrieved from https://www.bostonglobe.com/lifestyle/real-estate/2016/09/30/student-loan-debt-causes-chain-reaction-housing-market/p6DGy4f2px9vadMJnKr39O/story.html

Graf, M. (2015). Cost of College in the United States. *Rand Corporation*. Retrieved from https://www.rand.org/blog/2015/01/cost-of-college-in-the-united-states.html

Hanford, A. B. and E. (2018, February 12). College Debt, Without the Degree. *The Atlantic*.

Retrieved from https://www.theatlantic.com/education/archive/2018/02/college-debt-without-the-degree/553037/

Holland, K. (2015). The High Economic and Social Costs of Student Loan Debt. *CNBC*. Retrieved from https://www.cnbc.com/2015/06/15/the-high-economic-and-social-costs-of-student-loan-debt.html

Income-Driven Plans. (2017, November 14). Retrieved May 3, 2018, from /repay-loans/understand/plans/income-driven

Insler, S. (2017). The Mental Toll of Student Debt: What Our Survey Shows. *Student Loan Hero*. Retrieved from https://studentloanhero.com/featured/psychological-effects-of-debt-survey-results/

James, K. & Kelly, A. (2015). Balancing Risk and Responsibility: Reforming Student Loan Repayment. *American Enterprise Institute*. Retrieved from https://www.aei.org/wp-content/uploads/2015/11/Balancing-risk-and-responsibility.pdf

Kelly, A. (2014). New Directions in Private Financing. *Miller Center*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/Kelly_No7.pdf

Lockert, M. (2016). These States Now Offer Student Refinancing – Is Yours One of Them? *Student Loan Hero*. Retrieved from https://studentloanhero.com/featured/refinancing-student-loans-by-state/

Malamud, O. (2016). Fixing Student Loans—the Right Way. *Brookings Institute*. Retrieved from https://www.brookings.edu/research/fixing-student-loans-the-right-way/

Marcus, J. (2016, March 16). How Australia Gets Student Loans Right. *The Atlantic*. Retrieved from https://www.theatlantic.com/education/archive/2016/03/australia-college-payment-model-exposes-shortcomings-of-new-american-version/473919/

Miller, B., & Akers, B. (n.d.). Designing Higher Education Risk-Sharing Proposals. Retrieved May 3, 2018, from https://www.americanprogress.org/issues/education-postsecondary/reports/2017/05/22/432654/designing-higher-education-risk-sharing-proposals/

Miller, B., & Libassi, C. J. (n.d.). Sharing the Risk. Retrieved May 3, 2018, from https://www.americanprogress.org/issues/education-postsecondary/reports/2016/12/19/295187/sharing-the-risk/

NAICU - Risk-Sharing. (n.d.). Retrieved May 3, 2018, from https://www.naicu.edu/policy-advocacy/student-aid/risk-sharing

National Commission on Financing 21st Century Higher Education. (2014). Investing in the Future: Sharing Responsibility for Higher Education Attainment. *National Commission*

on Financing 21st Century Higher Education. Retrieved from http://web1.millercenter.org/commissions/higher-ed/higher-ed-FinalReport.pdf

O'Brien, S. (2018, February 9). University of Wisconsin-Madison offers free tuition to financially strapped freshmen. *CNBC*. Retrieved from https://www.cnbc.com/2018/02/09/university-of-wisconsin-madison-offers-free-tuition-to-financially-strapped-freshmen.html

Office of Public Affairs. (2012). Consumer Financial Protection Bureau Now Taking Private Student Loan Complaints. *U.S. Department of Education*. Retrieved from https://www.ed.gov/news/press-releases/consumer-financial-protection-bureau-now-taking-private-student-loan-complaints

Olinsky, B., & Steinberg, S. A. (n.d.). Training for Success: A Policy to Expand Apprenticeships in the United States. Retrieved May 3, 2018, from https://www.americanprogress.org/issues/economy/reports/2013/12/02/79991/training-for-success-a-policy-to-expand-apprenticeships-in-the-united-states/

OPA News Release: $100M in grants to transform apprenticeship for the 21st century by expanding training into new high-skilled, high-growth industries [12/11/2014]. (2015, December 15). Retrieved May 3, 2018, from https://www.dol.gov/newsroom/releases/opa/opa20142233

Peralta, K. (2015, January 12). Apprenticeships Could Be Gateway to Middle Class. *U.S. News*. Retrieved May 3, 2018, from https://www.usnews.com/news/articles/2015/01/12/apprenticeships-could-provide-a-pathway-to-the-middle-class

Program Overview - Back a Boiler - Purdue University. (n.d.). Retrieved May 3, 2018, from http://purdue.edu/backaboiler/overview/index.html

Rose, C. C. (2016). Overcoming the Obstacles Student Debt Presents to the Ability to Buy a Home. *Journal of Financial Professionals*, *70*(5), 72-80.

Salerno, C. (2014). Higher Education: Social Impact Bonds and Income Share Agreements. *National Commission on Financing 21st Century Higher Education*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/Salerno_No8.pdf

Schwartz, N. D. (2013, November 30). Where Factory Apprenticeship Is Latest Model from Germany. *The New York Times*. Retrieved from https://www.nytimes.com/2013/12/01/business/where-factory-apprenticeship-is-latest-model-from-germany.html

Scott-Clayton, J. (2018). The Looming Student Loan Default Crisis is Worse than We Thought. *Brookings Institute*. Retrieved from https://www.brookings.edu/research/the-looming-student-loan-default-crisis-is-worse-than-we-thought/

Selingo, J.J. (2014). Transformations Affecting Postsecondary Education. *National Commission on Financing 21st Century Higher Education*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/Selingo.pdf

Serna, G.R. (2014). The Federal Role in Financing 21st-Century Higher Education: Effectiveness, Issues, and Alternatives. *National Commission on Financing 21st Century Higher Education*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/SernaNo10.pdf

Shen, H., & Ziderman, A. (2009). Student loans repayment and recovery: international comparisons. *Higher Education*, *57*(3), 315–333. https://doi.org/10.1007/s10734-008-9146-0

Snyder, M. (2014). State Higher Education Finance: Best Practices. *National Commission on Financing 21st Century Higher Education*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/SernaNo10.pdf

Starting a Successful Apprentice Program: Tips from a Siemens Trainer. (2015, May 8). Retrieved May 3, 2018, from http://www.industryweek.com/education-training/starting-successful-apprentice-program-tips-siemens-trainer

State Higher Education Executive Officers. (2017). State Higher Education Finance: FY 2016. *State Higher Education Executive Officers*. Retrieved from http://www.sheeo.org/sites/default/files/project-files/SHEEO_SHEF_2016_Report.pdf

Steinberg, S. A., & Gurwitz, E. (n.d.). Innovations in Apprenticeship. Retrieved May 3, 2018, from https://www.americanprogress.org/issues/economy/reports/2014/09/25/97772/innovations-in-apprenticeship/

Student Aid and Fiscal Responsibility Act of 2009. Pub. L. No. 111–152, 124 Stat. 1071 (2010).

Student Loan Debt Statistics 2018 | The Student Loan Report. (n.d.). Retrieved May 3, 2018, from https://studentloans.net/student-loan-debt-statistics/

Student Loan Resources: Financial Aid & Loan Debt Management. (n.d.). Retrieved May 3, 2018, from https://www.debt.org/students/

The College Investor. (2017). Student Loan Forgiveness Programs by State. *The College Investor*. Retrieved from https://thecollegeinvestor.com/student-loan-forgiveness-programs-by-state/

The Institute for College Access & Success. (2014). Quick Facts about Student Debt. *The Institute for College Access & Success*. Retrieved from https://ticas.org/sites/default/files/pub_files/Debt_Facts_and_Sources.pdf

The Student Loan Landscape Liberty Street Economics. (n.d.). Retrieved May 3, 2018, from http://libertystreeteconomics.newyorkfed.org/2015/02/the_student_loan-landscape.html

U.S. Census Bureau. (2017). 2017 National Population Projections Datasets. *U.S. Census Bureau*. Retrieved from https://www.census.gov/data/datasets/2017/demo/popproj/2017-popproj.html

U.S. Department of Education Releases National Student Loan FY 2014 Cohort Default Rate | U.S. Department of Education. (2017, September 27). Retrieved May 3, 2018, from https://www.ed.gov/news/press-releases/us-department-education-releases-national-student-loan-fy-2014-cohort-default-rate

U.S. Department of Education. (2015, June 4). Programs: Federal Pell Grant Program. *U.S. Department of Education.* Retrieved from https://www2.ed.gov/programs/fpg/index.html

U.S. Student Loan Debt Statistics for 2018. (n.d.). Retrieved May 3, 2018, from https://studentloanhero.com/student-loan-debt-statistics/

Ulbrich, T. R., & Kirk, L. M. (2017). It's Time to Broaden the Conversation About the Student Debt Crisis Beyond Rising Tuition Costs. *American Journal Of Pharmaceutical Education*, *81*(6), 1-5.

Watson, A. L. and T. (2018, February 22). A risk-sharing proposal to hold higher ed institutions accountable to their students. Retrieved May 3, 2018, from https://www.brookings.edu/research/a-risk-sharing-proposal-to-hold-higher-ed-institutions-accountable-to-their-students/

Webber, D. A. (2017). Risk-sharing and student loan policy: Consequences for students and institutions. *Economics of Education Review*, *57*, 1–9. https://doi.org/10.1016/j.econedurev.2016.12.007

Wegner, T. (2017). Student Loan Servicing Standards: Should the Government Look to Other Markets to Better Protect Student Borrowers?. *Journal Of Corporation Law*, *42*(3), 749-765.

White, D. & Crane, S. (2014). Crowded Out: The Outlook for State Higher Education Spending. *National Commission on Financing 21st Century Higher Education*. Retrieved from http://web1.millercenter.org/commissions/higher-ed/CrowdedOut.pdf