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Review

To cancel debt or not to cancel debt: Evaluation of debt cancellation or provide a tax credit

Jose Jay Vega[1]*, Jan Smolarski[2], Nikki Shoemaker[1] and Kelly Noe[1]

[1]Department of Accounting, Gerald W. Schlief School of Accountancy, United States.
[2]Department of Accounting, University of Texas Rio Grande Valley, TX 78539, United States.

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U.S. students are facing unprecedented student loan debt levels, roughly $1.75 trillion. The Biden Administration is proposing a debt relief program that will cancel student loan debt up to $20,000 for Pell Granted individuals. However, the current plan has faced substantial legal challenges and political pressure, and as suggested, it could increase the current inflation crisis. However, the size of the inflation effect is subject to debate. On the lower end, student debt relief may add only about 0.2% points to annual inflation. Proponents have also circulated linking student loan repayment to income levels. We propose an alternative approach to handle the current student loan debt crisis using a non-refundable tax credit. We provide theoretical support that individuals receive higher utility with a college degree, can pay off student loan debt faster, and that the U.S. government may obtain higher tax revenue from college graduates in the long run. We argue that individuals will seek higher-paying jobs, work longer hours, and accept promotions not only based on the increased salary but also because it would reduce taxes.

Key words: Student loan debt, student debt relief, tax credit.

INTRODUCTION

Student loan debt is growing at an extraordinary rate, with its current level at $1.75 trillion (Siripurapu and Speier, 2021). The amount has doubled in the past two decades, with over forty-three million Americans having student loan debt. On average, students graduate with debt of $34,100 for public and $58,600 for private four-year colleges (Hanson, 2022). Additionally, lower-middle-income students carry a more significant amount of debt than their peers (Danna, 2013); suggesting that the student loan crisis is more detrimental to the lower-middle class than any other US socio-economic class. As student loan debt is the second largest amount of debt in the United States behind home mortgages, it is getting more difficult for students to develop financial stability.

The government has been involved in student loans since the end of World War II when it developed the Servicemen's Readjustment Act of 1944 (Siripurapu and Speier, 2021). However, the U.S. government did not start taking a stake in education funding until 1957, when it developed the National Defense Education Act, which was signed into law on September 2, 1958 (Siripurapu and Speier, 2021). This was further expanded in 1965

*Corresponding author. E-mail: jvega1313@gmail.com.

with the Higher Education Act and is the current model of student loan lending in the U.S. (Siripurapu and Speier, 2021). The government's involvement in student financial aid has had pushback from experts suggesting that government lending protects educational institutions from market forces allowing them to contribute to raising prices (Siripurapu and Speier, 2021).

The cost of education increasing steadily is causing students to take on more and more debt to pay for higher education, causing the current student loan debt crisis.

President Biden announced on August 24, 2022, that the United States Federal Government would forgive between $10,000 and $20,000 of student loan debt for eligible individuals (Fact Sheet, 2022). However, the student loan debt relief plan faced multiple challenges from Republican-led states. This has led to the federal appeals court temporarily blocking the forgiveness plan and the 8th Circuity Court of Appeals issuing a stay in response to the six states' motions. This study discusses the current student loan forgiveness plan and an alternative to handle the student loan debt crisis by providing a tax credit for individuals with student loan debt. The tax credit is presented with an upper bound limit per year with a lower bound equal to the amount of taxes an individual would pay in that current fiscal period. The approach does not only benefit individuals that sought out higher level education without the burden of the repayment placed on all taxpayers. Additionally, we argue that this would motivate individuals to seek higher-paying jobs after graduation, allowing them to take advantage of the tax credit benefit.

President Biden announced a three-part plan to handle the current student loan crisis affecting American families. In a White House Press release, it is stated that currently, 43 million Americans have federal student loan debt with a value of $1.75 trillion (Siripurapu and Speier, 2021). Even more staggering is that one-third of the students did not acquire a degree. Student loan debt has also been shown to affect individual career opportunities, the ability to save, and the ability to acquire fixed assets such as homes (Park and Miller, 2022) and cars (Nova, 2018). Dettling et al. (2022) show that families holding student loan debt later in life have fewer savings than their similarly educated peers without such debt. Similarly, students who pay off their loans are much better off financially than those that did not attend college in later life, which supports our argument.

Therefore, easing the burden of student loan debt affecting the American workforce is considered a prudent economic measure. President Biden announced that the Department of Education would forgive student loan debt of $10,000 or $20,000 for Pell Grant recipients for Americans that make under $125,000 or $250,000 for married filers. However, roughly only 37.5% of Americans have college degrees, and roughly only one out of seven have student loan debt. Therefore, the question is then asked, who should be paying for student loan debt, and how should this be structured?

Currently, thirty-two U.S. states offer programs to cover college tuition, and eleven of these states offer four-year college tuition programs. Most of the programs are geared toward need-based individuals. However, New York offers the Excelsior Scholarship that pays the tuition of a SUNY or CUNY institution after federal and state aid is applied. To benefit, students must stay in the state for several years after receiving the funding. Thus, New York can benefit from college graduates through intellectual contributions and tax revenue. Nevertheless, students are still subject to an income requirement and must complete thirty semester hours a year to qualify.

Many solutions have been proposed over the years to deal with the student loan debt problem. As far back as 1955, Milton Friedman suggested an income-driven repayment intended to protect student borrowers from financial hardship (Friedman, 1955). Although details have changed significantly over the years, the basic design is straightforward: pay a percentage of your monthly income above some threshold for some years, followed by loan forgiveness. Income-driven plans have been relatively unsuccessful, and as of 2021, only about 3% of student loan borrowers were enrolled. In 2011, the Department of Education created a pay-as-you-earn plan. Monthly payments are generally 10% of discretionary income; remaining balances are forgiven after 20 years. About half of the borrowers make no payments because they reported low incomes. Greig and Sullivan (2021) argues that these plans benefit primarily low income earners. As of 2021, approximately 19% of all borrowers were enrolled in pay-as-you-earn plans. We speculate that up to half of the borrowers enrolled in a pay-as-you-earn plan will have part or the entire loan balances forgiven. Pay-as-you-earn plans are moderately successful, but they penalize borrowers who pay off their loan balances, most likely those with higher earnings. See Wessel and Yu (2022) for additional details and information.

Following a similar stream of reasoning, we propose an alternative approach to handling the student loan crisis affecting American society rather than the proposed student loan forgiveness program. We suggest applying a non-refundable tax credit to an individual with federal student loan debt. We argue that this would provide an incentive to seek higher-paying jobs after graduation and acquire degrees that provide a higher return on investment. Enache (2022) suggests that high marginal tax rates can affect the workforce and individuals accepting higher-paying jobs, raises, and additional hours. The current tax code does provide a deduction for interest paid on a student loan if the individual meets specific qualifications. However, if you are in a higher paying position, you lose the tax deduction benefit, potentially resulting in less incentive to seek higher paying positions. A tax credit would not be phased out based on the level of income earned; instead, it would

have a maximum amount of credit awarded each year. Furthermore, we provide support showing that students who receive a non-refundable tax credit pay less than those receiving the debt relief plan proposed by President Biden in the long run when considering the time value of money.

This study contributes to the current discussion about how to handle the student loan debt crisis facing U.S. citizens. We explore if individuals gain a more significant amount of utility by attending college. Specifically, we investigate if U.S. taxpayers could pay off their student debt faster than traditional repayment plans using a tax credit scheme. However, our arguments are limited to being theoretical and must be empirically tested.

The rest of this paper is organized as follows: In the next section, we provide insight into the current student loan debt crisis affecting American society. This is followed by a simulation/example of our current non-refundable tax credit for handling the federal student loan crisis- The last two sections discuss the implications of our analysis and our conclusion.

BACKGROUND OF STUDENT LOAN CRISIS

The Biden-Harris Administration Student Debt Relief Program was developed to help the middle class. The program is estimated to cost the U.S. taxpayers $400 Billion over the next 30 years (Binkley, 2022). It is set to relieve $10,000 if you did not receive a Pell Grant and $20,000 to individuals who did receive a Pell Grant. Additionally, eligible individuals can only earn $125,000 a year or $250,000 for married couples. Thus, this income-based debt relief is only available for specific individuals. The borrowers, who benefit most, as measured by the ratio of forgiven balances to balances held, are younger, have lower credit scores, and live in lower-income neighborhoods (Goss et al., 2023). Additionally, the COVID–19 pandemic resulted in the government making it easy for individuals to stay home and not enter the labor market (Irwin, 2021). Therefore, if the government provides additional student loan debt relief, it could result in additional issues with the labor market. Furthermore, U.S. taxpayers are unhappy with paying someone else student loan debt even though they did not attend college (Bickerton, 2022). Additionally, 87% of Americans not having student loan debt resulting in most of the U.S. population footing the bill (Bickerton, 2022). Americans also worry that student loan forgiveness could worsen inflation (Epperson and Dhue, 2022). Loan forgiveness has been explored in the past, but it has been shown that such policies disproportionately benefit high-income borrowers (Catherine and Yannelis, 2020). Alternative proposals have been put forth to deal with the increased debt levels. For example, alternative repayment plans have surged in popularity. These plans are collectively referred to as income-driven repayment plans. Essentially, borrowers pay a portion of their discretionary income toward reducing their student loan plans. In some proposals, the payments stop after 20 to 25 years, and the remaining portion is written off. Yannelis and Tracey (2022) show that loan forgiveness programs in their current form benefit low-income earners only. High-earnings individuals benefit the least from income-driven loan forgiveness programs. On average, individuals with bachelor's degrees contribute nearly $381,000 more in taxes than those with just a high school degree. Furthermore, Lundeen (2014) and Autor (2014) suggest that America does not face an income gap but rather an education gap. Individuals with bachelor's degrees make almost twice as much as individuals with high school diplomas. We now turn our attention to a simulated example.

SIMULATION/EXAMPLE

An example was given with two individuals, both classified as risk-averse; one seeks to acquire a baccalaureate degree from a higher education institution, and the other one does not. Using a utility function aims to understand the satisfaction or pleasure an individual will receive from a specific good or action. In this situation, it is the action of earning wealth and the benefits of receiving a tax credit from such action. Furthermore, regarding choices between actions, utility functions are valuable to understanding which choice will lead to the highest expected payoff for an individual. In addition, the utility function provides valuable insight into the preferences of the individual generating wealth. Note also that the results will still hold if the individual is a risk-natural individual or risk-seeking because the equation would drop the square root part of the equation.

Additionally, the authors assume that students are from middle-class families as they are the most likely to take out federal loans at 58.4% (educationdata.org). Collecting data from the U.S. News on college tuition rates, we find that for the 2022-2023 academic years, public rank in-state tuition will cost roughly $10,423. To simplify, we will assume the cost is the same for all four years for the student. This assumption is appropriate because public institutions guarantee students that those costs will not increase over the four years of attendance. Therefore, the four-year cost of tuition is $41,692. Assuming a normal utility function for the risk-averse individual, we will take the square root of the payout. The median salary of a college graduate in 2022 is roughly between $55,260 and $59,600. Only 70% of students starting a baccalaureate degree will finish the degree. Students who do not elect to attend college have a median income of approximately $36,600 a year. Furthermore, if you have some college or an associate degree, your expected medium income will be roughly $39,900 and $44,100, respectively.

Setting up the expected value of the utility of attending

Table 1. Maximum amount of tax credit each year that an individual can take each year.

Year	Taxpayers					
	College			Non-College		
	Income	Taxes	Student loan	Income	Taxes	Student loan
Year 0			41.692			
Year 1	$50.652	4.322	37.370	36.600	2.633	-2.633
Year 2	53.286	4.653	32.717	36.600	2.633	-5.266
Year 3	56.056	5.100	27.617	36.600	2.633	-7.899
Year 4	58.971	5.742	21.875	36.600	2.633	-10.532
Year 5	62.038	6.416	15.459	36.600	2.633	-13.165
Year 6	65.264	7.126	8.333	36.600	2.633	-15.798
Year 7	68.658	7.873	460	36.600	2.633	-18.431
Year 8	72.228	8.658	-8.198	36.600	2.633	-21.064
Year 9	75.984	9.484	-17.682	36.600	2.633	-23.697
Year 10	79.935	10.354	-28.036	36.600	2.633	-26.330

Source: Based on the tuition rates from U.S. News & World Report.

college or not attending college will result in the following expected value equation, assuming both individuals are the same age: utility of attending College = E(Utility)= $\sqrt{Payoff} = \sqrt{income} =$
$P(S) * \sqrt{income} + P(DO)\sqrt{income}$

Applying the above information to our model, the utility received from an individual that attends college is equal to the:

$.7 * \sqrt{55{,}260} + .3 * \sqrt{39{,}900}$ = 434.8243

Utility of not attending college = Equity) = $\sqrt{Payoff} = \sqrt{income}$

Applying the above information to our model, the utility received from an individual that did not attend college is equal to the:

$\sqrt{36{,}600}$ = 191.3113

Therefore, using expected utility theory, the individual would elect to go to college. However, this example does not take into consideration the cost of college. Assuming the cost of a four-year public college of $41,692 but depends on the benefit of increased salary. Furthermore, our first example does not consider the lost opportunity cost of the college student being in school as the non-college student works for the additional four years. Therefore, students that attend college have an opportunity cost of $188,092. However, college graduates experience, on average, 84% higher earnings than high school students. We then look at the return on investment with the expected utility between college graduates and high school diplomas; we have the following results:
Utility for College student $=.7 * \sqrt{2{,}671{,}000} + .3 * \sqrt{1{,}547{,}000}$ = 1,517.159
Utility for non-college student = $\sqrt{1{,}304{,}000}$ = 1,141.928
Therefore, the solution is similar in that risk-averse individuals benefit from attending college, supporting an increase in college-educated Americans. As of 2022, roughly 37.5% of Americans hold a college degree compared to 25.6% 20 years ago. However, during the same time, the cost of education increased, resulting in the $1.7 trillion-dollar federal loan issue. President Biden's solution to the federal student loan debt crisis is to forgive between $10,000 and $20,000 of student loan debt. This has a direct cost to all US taxpayers. Even if you did not attend college and experience this increase in expected utility, you have to incur the cost of individuals that did experience the expected utility under President Biden's plan. Therefore, we propose the following solution to handle student loan debt that holds the individual accountable for the cost of the debt they incurred instead of having United States taxpayers at-large responsible.

Recalling the example, a single wage earner earning $55,000 yearly typically pays around $7,000 in taxes yearly. However, we will use our probabilities of completing the degree and the appropriate payout. Therefore, we will use an income of $50,652, resulting in an individual paying roughly $4,322 in federal taxes. On the other hand, the non-college student earns $36,600 and pays roughly $2,633 in federal taxes. We propose that the federal tax paid by the college student is applied to their tax requirement up to the amount of taxes paid. Therefore, the tax credit received from the student loan debt is only treated as a non-refundable tax credit. Furthermore, we set a maximum amount of tax credit each year that an individual can take each year (Table 1). Therefore, after ten years, the college student will pay more taxes than the non-college student and will have the student loan debt paid in full. As noted previously, this

alternative does not pass along the student debt to all American taxpayers.

Based on assumptions and simulation, the authors argued that providing a non-refundable tax credit will incentivize individuals to seek college degrees as it would reduce future taxable income that would wash out the cost of school.

The non-refundable tax credit is only available to eligible borrowers. To be eligible, individuals must graduate from college. Additionally, as a non-refundable tax credit, only individuals that graduated and have taxes due are eligible to take the tax credit. Otherwise, they are responsible for the student loan debt repayment. Therefore, it minimizes the incentive for individuals not to graduate and not working because they will still have to pay back the student loan. Non-refundable, in our example, means that the tax credit would be lost if the borrower does not have sufficient income to make use of the tax credit. In such a case, the borrower would have to make the loan payment. This would also incentivize individuals to seek higher-paying jobs or work additional hours to maximize the taxable credit as it is non-refundable. The tax credit would also remove the tax wedge because it would be a dollar-to-dollar tax credit up to a specific limit for a specific year. If student debt remains after the first year, a tax credit would be applied to next year's income, and so on, until the debt is paid off. However, if the individual does not have taxable income, they would incur interest expenses and still must make the minimum loan payment. This would further incentives individuals to contribute to the labor market, which in turn will address the education gap Autor (2014) and (Lundeen, 2014). Students who have paid off their student loans were significantly more likely to land higher-paying jobs in new industries. These changes amounted to a $4,000 boost to their income (Di Maggio, 2019 and Di Maggio et al., 2019). Note that the tax credit is only valid for individuals that complete and finish their degree. Therefore, only "college graduates" can receive the non-refundable tax credit. If an individual elects to seek further degrees, the additional degrees must be completed before the tax credit can be received. If individuals fail to complete the degree, they will not be eligible to receive the non-refundable tax credit. Additionally, making the tax credit non-refundable does not pull from other taxpayers because only taxes that an individual pays would be eligible for the tax credit.

CONCLUSION

The U.S. is facing a student loan debt crisis, and if not handled properly, it can cause economic turmoil. The current administration proposes canceling debt for eligible individuals up to $20,000 for Pell Grant students. However, the Biden-Harris debt cancelation plan has encountered legal resistance and has paused accepting applications for the plan. The plan has further received criticism suggesting it could worsen the current inflation, cost the U.S. taxpayers $400 billion, and would have someone else footing the bill. Therefore, we provide an alternative solution to deal with the current student loan debt crisis. The non-refundable tax credit only applies to individuals that attend higher education and graduate. Furthermore, it incentivizes individuals to obtain higher-paying jobs, work more hours or accept promotions without the ramifications of increasing taxes. The non-refundable tax credit provides savings to the taxpayer and increases future taxable revenue for the government. Lastly, this solution is not a one-time debt cancellation and can be incorporated into the regular tax code.

Overall, this study contributes to the discussion on how to handle the current student loan debt crisis. An alternative to the proposed Biden-Harris debt relief program currently facing legal challenges has been provided. However, this study is still limited in its contribution. It would need to be empirically tested to verify the benefits of the proposed non-refundable tax credit and estimate the benefits the taxpayer and government would receive from this proposed tax rule. However, the proposed plan does address the concerns raised with the current debt relief plan.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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