

DISSERTATION
Number DBA03/2020

The Minuses of PLUS Loans

Submitted by

Ross A. Riskin

Doctor of Business Administration in Finance Program

In partial fulfillment of the requirements

For the degree of Doctor of Business Administration in Finance

Sacred Heart University, Jack Welch College of Business & Technology

Fairfield, Connecticut

Date: May 15, 2020

Dissertation Supervisor: Dr. Khawaja Mamun

Signature: 

Committee Member: Dr. Benjamin Cummings

Signature: 

Committee Member: Dr. Jennifer Trudeau

Signature: 

THE MINUSES OF PLUS LOANS: TRENDS, ISSUES, AND OPPORTUNITIES FOR PARENTS WHO BORROW FOR COLLEGE

Ross A. Riskin

As college costs rise, students aren't the only ones facing the financial burden of education-related debt. In this paper, parent borrowing through the PLUS loan system, which is a federal program that provides parents and graduate students with access to funding for higher education costs, is examined. The systemic issues present in the PLUS loan system along with the rise in overall borrowing suggest the need for improved policies to help increase borrower awareness and improve loan outcomes. This paper is unique in that it addresses parent PLUS loan borrowing at the school level in order to identify factors that are associated with increases in borrowing and determine if borrowing is statistically different at the 1,712 public, private nonprofit, and private for-profit institutions analyzed. This paper finds a strong association between average net price and average parent PLUS loan borrowing at all institutions, but the borrowing sensitivity to average net price is greatest at public institutions compared to private nonprofit and private for-profit institutions. Given the observed differential patterns of borrowing across these institutions, targeted student loan reforms should address financial aid award letter standardization, enhancements to the College Scorecard, improved disclosures of loan costs, and modifications to the repayment plan options currently available for parent PLUS loan borrowers.

Keywords: parent PLUS loans, student loans, income-driven repayment plans, College Scorecard, APR

JEL Codes: I22, I28, G51,

I. INTRODUCTION

Discussions around student loans and education financing have continued to be hot topics for both consumers and researchers in education policy, finance, and economics related fields. This paper looks to add to the existing literature by examining higher education borrowing by parents through the federal PLUS loan system in an attempt to identify relationships between variables that may affect borrowing and discover differences among borrowing levels at public, private nonprofit, and private for-profit institutions. This paper posits that increases in average net price at public, private nonprofit, and private for-profit institutions will have a positive and significant effect on average parent PLUS loan borrowing at these institutions, and that the differential effects of increases in average net price on parent PLUS loan borrowing at public institutions compared to private nonprofit and private for profit will be statistically different. The remainder of this paper is organized as follows. Section II reviews related literature and identifies gaps in research related to parent PLUS loans. Section III provides a thorough primer on parent PLUS loans and identifies three major issues with this type of higher education financing. Section IV reviews recent borrowing trends. Section V introduces the hypotheses while Section VI identifies the data, and Section VII explains the empirical model used. Section VIII presents the results and Section IX concludes the paper with four related policy recommendations.

II. LITERATURE REVIEW

Recent research has focused on both the individual outcomes of borrowers and the macro effects on the economy in the United States. When evaluating the impact of student loan repayment, Chou, Looney, and Watson (2017) take an interesting approach in examining the

consequences associated with defaulting on federal student loans. Some of the consequences include damaged credit, wage garnishment, offsets of tax refunds and social security payments. The authors allude to the fact that just the mere presence of possessing outstanding loan balances can negatively impact the borrower's chance at successfully reaching other economic goals. When thinking about the long-term economic effects that carrying student debt can have, Bricker and Thomson (2016) find that families that carry an average level of student loan debt were 3.1 percent more likely to be 60 days late paying other bills, and 3 percent more likely to be denied credit, while families that covered other types of consumer debt at similar levels experienced no additional financial distress.

Other research has focused on areas such as determining the effectiveness of the current student loan system and what unconventional factors may be contributing to issues surrounding repayment success and successful receipt of loan forgiveness under programs such as the Public Service Loan Forgiveness (PSLF) program. Other questions related to how families are paying for these rising higher education costs, balancing planning for multiple financial goals concurrently (saving for college and their own retirement), and, for those who choose to borrow, determining with whom the repayment responsibility lies – the parents, the student, or both – are being discussed as well.

While much of the existing literature is concerned with student loans as they pertain to student borrowers, this paper focuses on a group that appears to be flying under the radar, parent borrowers, and, more specifically, parents who borrow through the federal PLUS loan system. To better understand why this research is focused on parent borrowers, it is necessary to examine the higher education landscape and evaluate how families are approaching funding and financing these rising costs. Higher education costs have continued to rise and, according to the

CollegeBoard's 2019 Trends in College Pricing report (Ma, Baum, Pender, & Libassi, 2019), the average increase of tuition and fees and room and board for public four-year in-state and private nonprofit four-year institutions was 2.5 percent and 3.3 percent, respectively. While higher education costs continue to increase, so do the avenues available to students and families to be able to fund or finance these costs. Parents and students have access to many different savings vehicles, some of which are specifically designed for funding education related goals such as Coverdell Education Savings Accounts (CESAs) and Qualified Tuition Programs (529 College Savings Plans). These savings vehicles provide incentives through either current or deferred tax savings, and several different financing options through both the federal government and in the private marketplace.

According to a report from Sallie Mae and Ipsos (2019), 66 percent of families relied on parent income and savings, 65 percent of families relied on student income and savings, 82 percent of families relied on grants and scholarships, 21 percent of families relied on parent borrowing, and 38 percent of families relied on student borrowing to pay for higher education costs. While the majority of non-borrowed funding from both parents and students comes from current income in their study, it is clear that families and students are utilizing other funding vehicles that are designed for education-related uses such as college savings plans (21 percent of families in 2019)¹ and federal work study (14 percent of families in 2019) along with those that are not intended for education-related uses such as retirement savings withdrawals (9 percent of families in 2019). Similarly, when looking at borrowed sources, 35 percent of students used federal student loans and 11 percent of parents used federal PLUS loans, which are designed to

¹ According to the College Savings Plan Network, the number of accounts and assets under management in all 529 college savings plans reached 14.2 million and \$371.5 billion, respectively as of 12/31/2019.

cover education-related costs, while seven percent used credit cards and four percent used retirement account loans to cover education-related costs.

While recent research has focused on issues related to student borrowing for higher education costs, additional research is needed to further examine the effectiveness and consequences of parent borrowing through the federal PLUS loan program. While the majority of federal education debt is held by students, the increase in debt taken on by parents has exceeded that of debt taken on by students. According to Ma, Baum, Pender, and Libassi (2018), when comparing the volume of parent PLUS and federal undergraduate loans relative to 2007-2008, they find an increase in borrowing volume of 142 percent over that time period for PLUS loans as compared to 102 percent for undergraduate loans. In 1980 the federal government introduced the Parent Loans for Undergraduate Students program (PLUS), a program designed to increase access to financing for lower-income families looking to support their children in paying for college costs. When originally introduced, borrowers could not borrow more than \$4,000 per year with an aggregate cap of \$20,000, but the lending cap was greatly relaxed by Congress in 1992. Although there were and still are limits in place, there no longer exists an arbitrarily chosen figure such as the one that applies to undergraduate student loan borrowers.² Instead, the amount parents can borrow is limited to cost of attendance for the school less any aid the student receives, and there are no aggregate borrowing caps in place. For example, if a Freshman student is admitted to a school that costs \$60,000 and he or she only qualifies for a federal direct unsubsidized loan in the amount of \$5,500, the parent of the student can borrow the remaining \$54,500 through the federal parent PLUS loan program. Two primary barriers that prevent parents from utilizing this form of financing or from borrowing a substantial amount are

² Annual borrowing limits are imposed on undergraduate borrowers of Stafford loans and the maximum lifetime borrowing limit is capped at \$31,000 for dependent students and \$57,500 for independent students.

having an adverse credit history and that the remaining financial need of the student after accounting for cost of attendance must be greater than zero.

Even though the federal government currently acts as the lender of PLUS loans, prior to 2010, not only could parents and graduate students borrow directly from the federal government through the Direct Loan Program, but the federal government also worked in tandem with the private sector and allowed private lenders to issue PLUS loans to parents and graduate students that were guaranteed by the federal government through the Federal Family Education Loan program (FFEL)³. Since July 2010, new parent PLUS loans have only been issued by the federal government through the Direct Loan program. Avery and Turner (2012) note the drastic increase in lending in the PLUS loan program rising from \$2 billion in 1990 to \$12 billion in 2009. They also note that the private education loan market exploded from issuing \$1.5 billion in 1995-1996 to \$21.8 billion by 2007-2008. Mazzeo (2007) performed an extensive study of private student loan offerings and noted that many were marketed as supplements to federal loans and that some parents may have preferred private lending options over PLUS loans since the private loans would be made in the student's name.

However, their study was performed prior to the financial crisis of 2007-2009 and as a result, a shift in preference may be seen, especially due to the tightening of lending standards where it may be more difficult for students to acquire substantial private student loan amounts without a co-signor – likely a parent. It is also interesting to see that early on there existed a preference by parents to make the student responsible for repayment, which is an important idea that will be covered in more detail later in this paper. Since financing higher education costs through the use of loans is of importance from social, political, and economic perspectives, this

³ The Federal Family Education Loan (FFEL) program was introduced in 1966 and was an example of a public-private partnership in which federally guaranteed loans were issued through private lenders to student and parent borrowers.

paper adds to the existing body of knowledge by primarily focusing on issues and policy recommendations that will impact current and potential parent borrowers who choose to finance higher education costs by participating in the Federal PLUS loan program, especially as college costs continue to rise and the number of borrowers at public, private nonprofit, and private for-profit institutions is increasing as well.

III. A PRIMER ON PLUS LOANS

After discussing some historical drivers that influenced the creation of the PLUS loan system, it is important to analyze the mechanics behind this type of debt and discuss three important systemic issues that currently exist. In order to have the opportunity to borrow parent PLUS loans, the student must fill out the free application for federal student aid (FAFSA). According to the Office of Federal Student Aid, in order to receive a parent PLUS loan, the prospective borrower must be the biological or adoptive parent of an undergraduate student, not have an adverse credit history, and meet the general eligibility requirements for federal student aid. Also, disbursements are usually made in at least two payments directly to the school to credit the student's account for the respective costs each year; any excess funds are paid out to the borrower by the school. Initially, these loans utilized variable interest rates and were issued directly and indirectly by the federal government through various programs such as the FFEL program that was previously discussed.

A. Expensive and Lack of Transparency

...Insert Figure 1...

The interest rate for PLUS loans disbursed between 7/1/2019 and 6/30/2020 is 7.079 percent (Figure 1) and is calculated by adding 4.6 percent to the last 10-year Treasury note auction that took place in May 2019 (Figure 1). The interest rate re-sets for all federal PLUS and Stafford loans on July 1st each year and they are all pegged to the 10-year treasury note rate. However, the 4.6 percent premium charged on PLUS loans made to parents and graduate students is more than double that charged to undergraduate and graduate students through the Stafford loan program – 2.05 and 3.60 percent, respectively. Mankiw (1986) justifies the need to impose higher interest rates on student loans since the student borrower's plans to repay are unknown; however, he notes that this may cause two problems. Raising rates on all borrowers creates an adverse selection problem where well-intentioned borrowers may become resentful and bad borrowers will still be granted loans, but it is not of great concern since the federal government is ultimately responsible for the repayment of this debt as opposed to the institutions of learning themselves.

Barr (2017) examines how to approach funding post-secondary education and the principles of cost sharing between taxpayers and the individual beneficiary. They run scenarios in which they charge an interest rate below the cost of finance, which is provided as a taxpayer's subsidy, an interest rate above the cost, and a surcharge (similar to loan origination fees in the U.S. system). They conclude that reliance on any single method is likely to be suboptimal. Interest rates below the cost of finance help low earners, but have no immediate effects on monthly repayments under an income-contingent repayment plan, while charging an interest rate above the cost of finance is regressive for lower earners since they will pay longer and repay more in present value terms.

...Insert Figure 2...

In addition to higher interest rates, these loans also impose relatively high origination fees (Figure 2) in the amount of 4.236 percent (2019-2020) when compared to those fees imposed on undergraduate and graduate Stafford loan borrowers, 1.059 percent (2019-2020), and other types of consumer debt such as mortgages where the average origination fee is around one percent⁴. Origination fees for parent PLUS loans have experienced minor fluctuations since the 2013-2014 academic year and were previously fixed at four percent. While prior to the 2006-2007 academic year, origination fees on Stafford loans were also set at four percent, they decreased significantly in the years following.

Origination fees are an additional cost imposed on the borrower to help the lender cover the cost of administering and servicing the loan. For example, if an individual borrows a PLUS loan in the amount of \$10,000 that carries a 4.236 percent origination fee, the borrower will only receive \$9,576.40, but will be responsible for repaying the original amount of \$10,000. It is important to note that the mechanics of applying an origination fee to student loans differ from how they are traditionally applied to other types of debt such as a mortgage. If an individual borrows a mortgage in the amount of \$100,000 and the loan carries an origination fee of one percent, the borrower usually has the option of paying this fee up front or will have the additional cost of \$1,000 added to the mortgage balance so the borrower would be responsible for repaying \$101,000 over the life of the loan.

⁴ <https://www.investopedia.com/terms/o/origination-fee.asp> cites the average origination fee at around one percent, but also notes that these fees may be waived at the discretion of the lender.

Barr (2017) notes that enforcing even small surcharges or loan origination fees is regressive and may also incentivize borrowers against early repayment since the fee is fixed. High origination fees have two important implications for parent borrowers. The first is that high origination fees imposed on large loan amounts can potentially create a cash flow problem as the amount of funds they initially receive may not be enough to cover the actual education costs⁵. The second is that the cost of the origination fee increases the cost of the loan and as a result, both the annual percentage rate (APR) and the effective annual rate (EAR) of the loan also increase depending on which repayment term is selected.

...Insert Equation 1...

Equation 1 represents the formula used to calculate the APR on a loan. The APR will increase as the interest rate or origination fee increases, while it will decrease as the loan repayment period increases. A problem that appears from a transparency perspective is that borrowers may not understand or be aware of how the origination fee factors into these calculations since the department of education does not currently display APR figures; whereas private lenders are required to under Regulation Z of the Truth in Lending Act. One reason for not displaying APR figures for this type of debt may be due to the fact that the repayment terms for federal student loans can vary drastically. Some borrowers may be participating in the standard 10-year repayment plan, others may be using an extended or income-driven repayment plan, for which it would be impossible to calculate an accurate APR figure. However, it is difficult to agree that this is an acceptable reason for not disclosing this information for parent

⁵ It is possible for parents to request an additional funding amount from the lender to ensure no cash flow problems occur. For example, they could borrow to ensure that the new amount received from the loan covers the funding gap.

borrowers who actually have fewer repayment options than student borrowers by design, and are less likely to participate in an income-driven repayment plan. The repayment plan limitations will be discussed as the third systemic issue.

...Insert Table 1...

Borrowers who wish to compare private loan alternatives with a parent PLUS loan should be able to make an “apples to apples” comparison, which is not currently the case. For example, consider a parent borrower who decides to borrow \$50,000 through the PLUS loan system (Table 1). Assuming current interest rates and origination fees, the APR is computed to be 8.07 percent and 7.52 percent when using 10-year and 30-year repayment terms, respectively. This type of information is important to disclose to parents who may only be focused on or used to comparing monthly payment amounts or interest rates instead of total loan costs over the term of the loan.

Comparing the monthly payment amounts is also a bit skewed since, due to the large origination fee, this implies that the borrower needs to cover this shortfall up front, which is actually more costly in PV terms than spreading this payment over the 10-year or 30-year repayment terms. If a parent were to compare this to a private loan that charges 8 percent, he or she would have larger monthly payments over 10 years with the private loan, but would be repaying at a higher interest rate and would pay more in present value terms with the parent PLUS loan over that same 10-year period.

While issues exist with relying on APR due to the fact that it does not incorporate the effects of compounding, PLUS loan borrowers who do not understand how to properly factor in

origination fees in order to determine both the APR and EAR on their loans when evaluating financing alternatives or options may incur additional costs. To complicate matters further, the time frame used to determine the loan origination fees that are imposed on borrowers of parent PLUS loans differs from the time frame used to determine the interest rate on these loans. While the fixed interest applies to loans disbursed between the period of July 1st of the current year until June 30th of the following year, the origination fee applies to loans disbursed between the period of October 1st of the current year until September 30th of the following year.

B. Limited Barriers to Borrow

While other forms of debt may impose origination fees, most commonly mortgages, the education loan market is an example of where two separate markets exist. In general, one imposes origination fees (the federal student aid program) and the other does not (the private student loan market). Loans issued through the federal student aid program are interesting in that they are available to students without the requirement to provide any proof or evidence of their ability to repay. The assumption that students will earn a degree or certification and obtain gainful employment as a result essentially replaces traditional lending criteria used to evaluate credit worthiness. However, in order for parents to be eligible to borrow PLUS loans, the only lending criteria that applies to measuring financial status and the ability to repay is that the borrower may not have an adverse credit history.

According to the Office of Federal Student Aid, a borrower is considered to have an adverse credit history if they are more than 90 days delinquent on an outstanding debt balance greater than \$2,085 as of the date the credit report is run when applying for the PLUS loan, or if the borrower has been subject to default, bankruptcy, foreclosure, repossession, tax lien, wage

garnishment, or the write-off of a federal student aid debt during the five years preceding the date of the credit report. Borrowers who have an adverse credit history may obtain an endorser on the loan who agrees to repay the loan should the borrower not be able to, similar to a co-signor⁶. Additional factors that are generally taken into consideration when determining a borrower's financial status and ability to repay, such as debt to income ratio and FICO score, do not apply at all for prospective parent PLUS loan borrowers. Therefore, it is possible for individuals who do not possess an adverse credit history, or possibly possess no credit history at all, to obtain financing through this program even if their existing debt to income ratio exceeds conventional limits or if they have extremely low FICO scores.

It is logical to some extent that the borrowing barriers for this type of debt would be low since education is considered a social good, this program is directed at lower-income families, and student debt is often categorized as "good debt." In response to having such low barriers to entry for parents to obtain this financing, higher interest rates and origination fees are imposed to compensate not only for the current costs to administer the program, but also the future costs associated with delinquency and default (Barr, 2017). However, if higher interest rates are imposed and these loans are geared towards lower income-borrowers, then why do higher income families borrow more on average, especially given that income and credit scores are highly correlated (Beer, Ionescu, and Li, 2018)? If a borrower's credit score is high enough and his/her debt to income ratios are low enough, the borrower should be able to secure a more favorable loan in the private market.⁷ The ease of access to this type of funding may be

⁶ The student on whose behalf the parent is borrowing cannot be the endorser on the parent PLUS loan.

⁷ According to www.salliemae.com as of March 7, 2020, advertised APR figures on private student loans ranged between 2.75 and 10.65 percent for fixed and variable rate education loans.

contributing to higher borrowing levels even among higher-income parents who should be able to access more cost effective sources of funding.

C. Limited Repayment Options

While borrowers should be concerned about the interest rate associated with debt they have taken on, they should equally be concerned about what repayment terms are available to them. This is where education loans differ from other forms of consumer debt. Student borrowers of federal education loans are afforded the ability to participate in eight different repayment plans⁸ with four of them falling under the category of income-driven repayment plans, which are designed to allow borrowers to repay their debt based on their ability to pay; this concept is in line with Friedman's original theory on financing higher education costs (Barr 2016). The monthly payment under these types of plans is calculated using three factors – borrower income, family size, and state of residence – to determine discretionary income for which either 10, 15, or 20 percent of this amount will be used to calculate the borrower's monthly payment depending on which repayment plan is selected and what types of loans are borrowed.⁹

Income-driven repayment plans provide two major benefits to borrowers. The first is a required monthly payment amount that is tied to the borrower's discretionary income, which also provides insurance in the form of a floor amount for those borrowers who still wish to repay their loans over the standard 10-year repayment time horizon but may encounter a situation where they either become unemployed or experience a drastic reduction in earnings. The second benefit is that borrowers who participate in these income-driven repayment plans and have a remaining

⁸ Standard, Graduated, Extended Fixed, Extended Graduated, ICR, IBR, PAYE, REPAYE

⁹ To calculate the monthly payment under the ICR plan, 20% of discretionary income is used, while 10 percent of discretionary income is used for borrowers under the PAYE and REPAYE plans, and either 10 or 15 percent of discretionary income is used for borrowers under the IBR plan depending on whether the borrowers qualify as new borrowers or not.

loan balance at the end of the repayment term (20 or 25 years) will receive forgiveness of this debt if all the requirements are met. While these benefits are unique to education loan borrowers, they are targeted at assisting student borrowers rather than other borrowers of education-related debt, such as parents. When examining the repayment options available for parent PLUS loan borrowers, these borrowers are only able to participate in one income-driven repayment plan, the income-contingent repayment plan (ICR), which requires additional steps for enrollment eligibility.

The only way a parent PLUS loan borrower can enroll in ICR is to first consolidate an existing PLUS loan debt with another qualifying education-related debt using a Direct Consolidation Loan. These additional steps act as barriers for those borrowers who experience a great disparity between their income and education debt levels, and, even for those who are able to qualify, the ICR plan uses the least generous formula to compute a payment amount, which by design will almost always be greater than the amounts calculated under other income-driven repayment plans such as income-based repayment (IBR), pay as your earn (PAYE), and revised pay as your earn (REPAYE), which are available to student borrowers. Even though income-driven repayment plan options for student loan borrowers exist in the U.S., this does not mean they are perfect in their current state.

Barr, Chapman, Dearden, and Dynarski (2019) provide some great insight into how the student loan system works in Australia and England, with suggestions for improvements that should be considered in the U.S. system. They note that there are different ways of organizing income-contingent repayment plans: using current income, past income or a hybrid in certain cases. In Australia and England, student loan payments are withheld directly by the employer in a similar manner to how taxes are withheld by employers in the U.S. They note that high

repayment burdens are common with mortgage-style loans, which is the type of repayment plan federal loans default to in the U.S. Their primary finding is that income-contingent repayment plans, referred to in this paper as income-driven repayment plans, address issues related to the financial pressures that mortgage-style loans place on a significant minority of borrowers in the US. They offer alternative suggestions such as thinking about student loan repayments as a fraction of income that acts as a graduate tax and increases the borrower's marginal tax rate. Loan surcharges (referred to as origination fees in this paper) could also be used as an alternative to charging higher interest rates on loans and helps maintain the progressive nature in the repayment system. However, it has already been noted that these surcharges may present problems for parents if they are not well publicized, understood, or properly incorporated when evaluating the true costs of parent PLUS loans.

In summary, the federal government provides a funding option in the form of PLUS loans to parents who wish to finance all or a portion of their children's higher education costs. The amount parents can borrow is only limited by the cost of attendance set by each school less any aid received by the student. The barriers to qualify for this loan are extremely low, the interest rate and origination fees imposed are high relative to other financing alternatives, and while several options exist to help borrowers manage the repayment responsibility, they aren't as favorable as the options provided to student borrowers. After examining successful programs in other countries, it is likely that additional improvements could be made to the existing loan repayment system in the U.S. to improve borrower outcomes.

IV. BORROWING TRENDS

...Insert Figure 3...

Next, this paper will examine the actual federal direct loan program to analyze trends among borrowers by loan type and repayment plan. As of Q1 2020, there was \$95.6 billion outstanding in parent PLUS loans taken on by 3.6 million borrowers (Figure 3). According to this aggregate data set from the National Student Loan Data System (NSLDS), the number of borrowers has steadily increased and the amount of loans outstanding has increased \$33.4 billion since Q2 2014. While the vast majority of loans are still held in the form of unsubsidized Stafford loans, subsidized Stafford loans, and consolidation loans, parent PLUS loans in the aggregate have increased the most, being only second to the increase of PLUS loans made to graduate students. While \$95.6 billion represents the total amount of outstanding PLUS loans, this doesn't truly represent the total amount of parent borrowing through this system, since it is possible that parent borrowers have consolidated their loans either with other qualifying education debt taken on for their own education or with multiple parent PLUS loans, for which these figures are captured in the consolidated debt total in the amount of \$542.4 billion that is held by 11.7 million borrowers as of Q1 2020 (NSLDS). Unfortunately, these loans that were consolidated cannot be identified, so the current reported PLUS loan figure should act as a conservative estimate.¹⁰

Looney and Yannelis (2015) note that over time graduate loans and parent plus loans have increased as a share of total federal borrowing and that the growth in the number of borrowers has increased as well. They note that the persistence of borrowing for these loan types

¹⁰ This paper is primarily focused on parent PLUS loans borrowed under the William Ford Direct Loan program, yet it is important to note that some parent PLUS loan debt is still held under the older FFEL program.

proves to be an important reason for why aggregate and per-student loan amounts increase over time. Not only is it important to note this increased borrowing trend in the aggregate, it is also important to look at which repayment plans are being utilized by these borrowers in order to gain a better understanding of how borrowers are managing their debt.

Unfortunately, the NSLDS does not provide a breakdown of the number of borrowers or amount of debt that corresponds to each type of repayment plan; instead they break this down by some other factors such as the age of the borrower. As of Q1 2020, 4.2 million individuals between the ages of 50-61 had outstanding loan balances in the amount of \$186.2 billion dollars, while 1.1 million borrowers over the age of 62 had outstanding loan balances in the amount of \$49.8 billion. While it can't be verified that borrowers in these older age groups are only comprised of parent PLUS loan borrowers, it is safe to assume that the majority of parent PLUS loan borrowers fall into these age categories since, according to a study done by the Consumer Financial Protection Bureau in 2017, 73 percent of borrowers aged 60 and older reported that this debt was taken on for their child or grandchild's postsecondary education.

...Insert Figure 4...

...Insert Figure 5...

According to Sallie Mae and Ipsos (2019), the greatest source of debt-related financing comes from parent PLUS loans, followed by private education loans and home equity loans (despite recent tax law changes that reduce the effectiveness of using this type of debt to finance higher education related costs) (Figure 4). When examining the percentage of families that are using these various methods of financing, the largest percentage of families are using federal

student loans, followed by private education loans and parent PLUS loans (Figure 5). While the average amount borrowed may serve as a proxy for the actual financial burden families are facing, examining the percentage of families that are using these different methods of financing provides better insight into family borrowing behavior.

Norvilitis and Batt (2016) ran a study to look at other predictors of student loan balances and attitudes towards debt. In the sample of students surveyed, 25% reported that their parents were paying for all of their tuition, while 35% reported that their parents were helping them with tuition payments in some capacity, which represents 60% of all respondents. They find that while parent variables have significant bivariate correlations, they do not contribute to loan totals, though they do approach significance in predicting loan initiative and loan acceptance. They indicate that parents may help shape attitudes, but students may not ultimately choose to follow their parent's advice, especially when it comes to financial matters. Something similar will be examined in the empirical model to see if the opposite has any effect at the institution level – does average federal undergraduate student borrowing have any effect on average parent PLUS loan borrowing.

...Insert Figure 6...

...Insert Figure 7...

Another interesting data point that was collected, albeit differently in certain years, from the Sallie Mae and Ipsos reports (2018 and 2019) were parent and student responses to questions surrounding repayment responsibility. While it may be common to have conversations about who should or will be responsible for paying college costs, in 2018 and 2019, the survey findings

from Sallie Mae and Ipsos (2018 and 2019) dig down into determining how parents and students differ in their perspectives about which group should bear the repayment responsibility. Parents and students express their views as to whether one party is solely responsible for each type of debt or if a shared responsibility is more desired. When students participate in the federal student aid program, they are able to obtain financing from the federal government without the need to have a co-signor, and the responsibility to repay the debt is placed solely on the student. Similarly, when parents borrow, the federal government places the repayment responsibility on the parent. However, while 58 percent of parents and 70 percent of students believe it is the student's responsibility to repay education loans made to the students (Figure 6), only 28 percent of parents and 23 percent of students believe parents should be solely responsible for repaying federal education loans made to the parent (Figure 7) (Sallie Mae and Ipsos, 2019). These responses are interesting because it suggests that the primary borrower is not expected to be solely responsible for repaying the debt, which is unique when compared to other loans such as a mortgage or credit card debt.

When it comes to thinking about sharing responsibility for parent loans and student loans, 54 percent of parents and 48 percent of students believe that the responsibility of repaying education loans issued to parents should be shared, while 33 percent of parents and 25 percent of students believe the responsibility to repay loans issued to students should be shared (Sallie Mae and Ipsos, 2019). More recently, a new study from Country Financial in 2019 found that 56% of parents were willing to go into debt to pay college tuition expenses for their children. These findings simply affirm that even though parents may have an inherent desire to protect their children from financial hardship, when digging down deeper into who should be responsible for the financial burden of debt repayments, the results point in the direction of the student,

regardless of which party has taken on the debt and signed the promissory note(s). This also suggests that by simply looking at the median amount of debt borrowed by students, as provided by colleges and reported through public outlets, such as the College Scorecard website, the true cost students are paying for school may not be accurately captured. This is why it is important to understand the average net price paid rather than just the average or median amount of debt borrowed, since federal parent PLUS loans may act as disguised student loans in certain situations due to the borrowing limits actually imposed on undergraduate students.

While it is important to provide insight into the student loan borrowing environment that exists for parents and to interpret trends and implications for both current and potential borrowers, an additional contribution is made by analyzing parent PLUS loan borrowing by institution type to identify relationships between factors that are associated with the increased utilization of this form of debt. Examining the effects on borrowing by institution type is important because of the differences that exist between public, private nonprofit, and private for-profit institutions, such as those in student demographics, financial aid policies, educational quality, and prestige. One of the more relevant differences for the purposes of this research is student demographics, especially student age since students at private for-profit institutions tend to skew older. According to the NCES Characteristics of Postsecondary Students report, 67 percent of students who were enrolled as full-time undergraduate students at private for-profit institutions were reported as being over the age of 25, compared to 10 and 13 percent at public institutions and private nonprofit institutions, respectively.

As a result, this would logically reduce the likelihood of parent PLUS loan borrowing taking place for this relatively larger non-traditional student population. Looney and Yannelis (2015) also find that high rates of default and other measures of loan delinquency are

concentrated among nontraditional borrowers and that the institution they attended is strongly associated with his or her loan outcome. Therefore, if students who are likely to attend these types of institutions come from underserved populations and are economically disadvantaged (Deming, Goldin, and Katz, 2012), then, as a result, their parents may be denied parent PLUS loans or these students may be forced into an expensive private loan market with unfavorable terms.

Looney and Yannelis (2019) note that the increase in borrowing among graduate, parent, and high balance undergraduate borrowers has many troubling similarities to the increase in borrowing at for-profit and public two-year community colleges that resulted in high rates of default. Furthermore, Goodell (2016) finds that there is a positive association between a student's default status and the institution's for-profit status. They find that for-profit institutions systematically encourage ill-advised student loans, which refers to practices of for-profit colleges to pressure students into the "sale" of college. Even more recently, the Student Borrower Protection Center evaluated the lending practices of Wells Fargo and Upstart and revealed disparities between the interest rates charged on loans issued to similar borrowers at different schools. Borrowers who attend less prestigious colleges were charged higher interest rates, which suggests a potential form of educational discrimination that may violate fair lending practices. (Nasiripour and Levitt, 2020).

V. HYPOTHESES

Even though the previously addressed issues focus on borrowing at private for-profit institutions, it is important to also assess the factors that impact borrowing in our sample of public institutions, since the majority of parent PLUS loan borrowers are associated with these

institutions, and private nonprofit institutions, since this is where the average parent PLUS loan borrowing amounts are highest (NSLDS). If borrowers of parent PLUS loans associated with private for-profit institutions may be most at risk of default, the majority of parent PLUS loan borrowers are associated with public institutions, and the highest average parent PLUS loan borrowing is associated with private nonprofit institutions, it is important to determine if variables logically thought to influence parent borrowing, such as cost and ability to pay, are related to parent PLUS loan borrowing in general and if differences exist between the three institution types. Therefore, the empirical model will test to see if cost, ability to pay, and borrowing of the student are related to parent PLUS loan borrowing at the institution level and if differential effects exist by institution type.

VI. DATA

The federal education loan data used in the empirical model is collected from the NSLDS and includes the number of parent PLUS loan borrowers and the amount of parent PLUS loans borrowed at each qualifying educational institution. Average net price, average Pell grant amounts, average federal undergraduate borrowing amounts, and institution type data are collected from the Integrated Postsecondary Education Data System (IPEDS). The data set includes 1,712 schools that are located in the United States, are eligible to participate in Title IV federal student aid program, and are 4-year degree-granting institutions. The time period analyzed is 2010-2016.¹¹ These institutions are also further classified as public institutions, private nonprofit institutions, or private (proprietary) for-profit institutions. 568 public

¹¹ Even though calendar years are used in the analysis, it is important to remember that borrowing occurs over an academic year that is deemed to run from July 1st in the current year until June 30th in the follow year. In this data set, the 2010-2011 borrowing data is represented in the year 2010.

institutions, 1,020 private nonprofit institutions, and 124 private for-profit institutions are analyzed in the data set.

VII. EMPIRICAL MODEL

The following OLS regression is run separately on the collected samples of public (PUBLIC), private nonprofit (PRIVATE_NP), and private for-profit (PRIVATE_FP) institutions to test for significant relationships between the independent and dependent variables.

$$AVG_PLUSLOAN_{it} = \beta_0 + \beta_1 AVG_NETPRICE_{it} + \beta_2 AVG_PELL_{it} + \beta_3 AVG_UGLOAN_{it} + \varepsilon_{it}$$

The dependent variable of AVG_PLUSLOAN is calculated as the total amount of parent PLUS loans originated by each school divided by the number of parent PLUS loan borrowers at each school in each respective year. AVG_NETPRICE represents the average cost students and families are paying each year for undergraduate studies after accounting for scholarships and grants. It is important to note that while the IPEDS, the primary data collection program for the National Center for Education Statistics (NCES), provides additional information related to net price that is broken down by income level of the student, which provides a better understanding of what the average price students from lower, middle, and upper-income families are paying at each institution each year, no breakdown is given as to what percentage of students fall in each respective income level; thus, the overall net price figure for each institution is used in this analysis and it is expected that the relationship of this variable will be positive and significant.

While individual borrower level data cannot be collected to determine the amount of financial assets possessed by each borrower or held on average by borrowers at each institution, AVG_PELL is used, which represents the average amount of Pell grants received by students at

each institution each year, and serves as a proxy for ability to pay. This variable is calculated as the total amount of Pell grants received at each institution divided by the total number of undergraduate students receiving Pell grants at each institution and it is expected that the relationship will be positive and significant. Pell grants are awarded to families that show exceptional financial need as is determined by the Expected Family Contribution (EFC) formula that is generated once a student fills out the free application for federal student aid (FAFSA). The maximum Pell grant varies each year and the maximum amount that will be awarded in the 2020-2021 academic year is \$6,345.¹² Even though the EFC formula is driven primarily by income, as opposed to assets, it is appropriate to include this variable in the regressions.

There are advantages and disadvantages to using Pell grant information in this analysis. One advantage is that the financial aid formula is primarily driven by income, which results in the greatest impact on Pell grant eligibility. For example, students may qualify for lower EFC figures when parents and students report lower income. However, the disadvantage is that it is not a totally reliable proxy for ability to pay since assets are not assessed as heavily as income and may be the primary way families are paying for college (savings as opposed to cash flow). For example, it is possible that a family saved a substantial amount early on in a 529 plan for their son and daughter, but experienced job losses or a substantial drop in income when it came time to filling out financial aid forms. For this reason, it is quite possible that the family would have a low EFC and qualify for a Pell grant, but could also have enough assets saved to pay the full net price of college each year without resorting to borrowing parent PLUS loans. Although this is possible, it is not likely to be the case for most borrowers.

¹² The status of the student as full-time, part-time, $\frac{3}{4}$ time also has an impact on Pell Grant eligibility, but a breakdown of this data could not be obtained. The omission of this should not have a material impact on the analysis or findings in this paper.

The AVG_UGLOAN variable represents the average amount of federal loans borrowed by undergraduate students at each institution each year and is calculated as the total amount of federal loans borrowed by undergraduate students divided by the total number of undergraduate borrowers. This variable is included since the amount that students borrow should reduce the remaining funding gap needed to be funded or financed through other means, such as a parent PLUS loan, and it is also included to see if student borrowing has any impact on parent borrowing. Menges and Leonhard (2016) examine factors that affect community college students' willingness to borrow student loans and find that student borrowing decisions are more likely influenced by characteristics unique to their own individual situation rather than by cultural differences or financial literacy.

Even though unique circumstances are likely to influence borrowing behavior for parents as well, parents and students have expressed opinions about who should be responsible for repaying both student and parent loans, according to the Sallie Mae and Ipsos reports previously discussed. Therefore, it is possible that a relationship exists between the average borrowing of parent PLUS loans and the average borrowing of federal undergraduate student loans at certain types of institutions, but it is important to remember that the unit of analysis in this paper is the school rather than the borrower, so borrowers are only indirectly included in the data set. The relationship of this variable is expected to be positive but not significant.

To determine whether a fixed or random effects model is appropriate, the Hausman test is run and it is determined that using both institution and period fixed effects is appropriate and is consistent with previous approaches used in other education related research (Clarke, Crawford, Steele, and Vignoles, 2010).¹³

¹³ For robustness purposes, a panel data regression was run that included all institutions and used dummy variables to compare the effects of the explanatory variables on public institutions to both

...Insert Table 2...

To test for differences between the coefficients of the independent variables at the three different types of institutions, Z-tests are run and the following formula is applied (Paternoster, Brame, Mazerolle, and Piquero, 1998).

...Insert Equation 2...

As a result, the following hypotheses are tested to determine if the coefficients from the individual regressions are equal across public, private nonprofit, and private for-profit institutions.

$$H_0: b_{PUBLIC} = b_{PRIVATE_NFP}$$

$$H_1: b_{PUBLIC} = b_{PRIVATE_FP}$$

$$H_2: b_{PRIVATE_NFP} = b_{PRIVATE_FP}$$

A. Descriptive Statistics and Correlation Matrix

...Insert Table 3...

...Insert Table 4...

The descriptive statistics (Table 3) suggest that both the average net price and average amount of parent PLUS loans borrowed are greatest at private nonprofit institutions followed by

private nonprofit and private for-profit institutions. This model is not optimal since it requires the elimination of institution-level fixed effects and therefore, does not control for the unobserved differences between schools in the data set.

private for-profit institutions and public institutions. However, additional testing is needed to determine if this is the case and will be performed using ANOVA and Tukey HSD. It is important to note that these figures are also closely aligned with those reported in the 2015-2016 National Postsecondary Student Aid Study, which reports average parent PLUS loan borrowing in the amounts of \$17,800, \$14,500, and \$12,800 for private nonprofit, private for-profit, and public institutions, respectively. (Radwin, Conzelmann, Nunnery, Lacy, Wu, Lew, Wine, and Siegel, 2018). A highly positive correlation exists between the average parent PLUS loan borrowing and average net price variables at all three types of institutions (Table 4). This high level of correlation is expected since net price is an underlying factor that determines the annual borrowing limit for parent PLUS loans. Even if net price and parent PLUS loan borrowing weren't correlated, the mere rise in net price amounts would enable the ability for parents to borrow more parent PLUS loans in the current lending environment.

...Insert Figure 8...

It is also important to note that while the overall number of parent PLUS loan borrowers and amount borrowed has increased over the time period being examined; the majority of parent PLUS loan borrowers are associated with public institutions (Figure 8). While only 33 percent of the schools in this data set are public institutions (568), as compared to 59.58 percent that are private nonprofit institutions (1,020), 58.37 percent of all borrowers over the period analyzed are associated with public institutions (2,930,345), as compared to 37.28 percent that are associated

with private nonprofit institutions (1,871,527).¹⁴ While determining the impact of the chosen variables on the average parent PLUS loan borrowing at all schools is of interest, determining whether the differences in coefficients are statistically different by institution type is of equal importance.

B. ANOVA and Tukey HSD

...Insert Table 5...

In order to test for differences of means between the average amount of parent PLUS loan borrowing at each type of institution, a one-way between subjects ANOVA is conducted to compare the difference in population means of parent PLUS loan borrowing based on the analyzed sample of public, private nonprofit, and private for-profit institutions (Table 5). There is a significant effect of the difference of means at the $p < .01$ level for the three conditions [$F(2, 11981) = 878.33, p = 0.00$]. Post hoc comparisons using the Tukey HSD test indicate that the average amount of parent PLUS loan borrowing at public institutions ($M = 100067.80, SD = 3484.10$) is significantly different than the parent PLUS loan borrowing at private nonprofit institutions ($M = 14282.38, SD = 5720.17$) and significantly different than parent PLUS loan borrowing at private for-profit institutions ($M = 11639, SD = 6320.56$). These results suggest that institution type does have an effect on the average amount of parent PLUS loans being borrowed.

¹⁴ The total borrower figures were calculated by adding the total number of borrowers at each institution type by year. These figures do not necessarily represent the total number of unique borrowers at each institution.

VIII. REGRESSION OUTPUT AND Z-TEST RESULTS

...Insert Table 6...

...Insert Table 7...

When examining the public institutions, positive and significant results are found for the average net price and average federal undergraduate student borrowing variables at the 99 and 90 percent confidence levels, respectively (Table 6). For a one dollar increase in the average net price at public institutions, there is a \$0.23 increase in parent PLUS loan borrowing. For a one dollar increase in the average federal undergraduate student borrowing, there is a \$0.07 increase in parent PLUS loan borrowing. The positive and significant effect of average net price is expected since the average net price and parent PLUS loan variables are positively correlated and this variable limits the amount that can be borrowed through the PLUS loan system as well. These results also suggest that student loan borrowing decisions may have an effect on parent borrowing through the PLUS loan system at public institutions, even after controlling for average net price. The impact of average Pell grants received is not statistically significant and some may argue that if Pell grants represent funds that a student does not need to repay, then increases in these amounts would be able to reduce college costs and, as a result, lower net price figures. However, the fact that the average net price of college has increased at a rate greater than that of Pell grants and since Pell grants have maximum annual award limits in place, means that increases in Pell grants may not actually cause a material reduction in net prices.

When examining the private nonprofit institutions, positive and significant results are found for the average net price and average Pell grant variables at the 99 and 95 percent confidence levels, respectively. For a one dollar increase in the average net price at private nonprofit institutions, there is a \$0.17 increase in parent PLUS loan borrowing. For a one dollar increase in the average Pell grant received at private nonprofit institutions, there is an \$0.18 increase in parent PLUS loan borrowing. It is interesting to see that the effect of average Pell grants on parent PLUS loan borrowing is positive and significant at this type of institution. Since an increase in Pell grants represents an increase in financial need and consequently, a reduction in the ability to pay, it is logical that parent PLUS loan borrowing would increase, especially since this form of financial assistance is capped and the average net prices of private nonprofit institutions are greater than those of public institutions.

The effect of average federal undergraduate student borrowing is not statistically significant. This is an interesting finding for several reasons. This result may be due to the limitations that are imposed on students to the point where it is unlikely that relying on this source of financing alone will be enough to cover the student's remaining financial need after accounting for grants and scholarships; therefore, the ability for the student to borrow a limited amount does not appear to influence the borrowing decisions of the parent. It is also possible that students are borrowing this kind of debt due to the attractiveness of this type of debt; lower interest rates, low origination fee, the possibility of interest subsidization, automatic deferral, and more favorable repayment plan options are available to students, post-graduation.

When examining the private for-profit institutions, positive and significant results are found for the average net price variable at the 99 percent confidence level. For a one dollar increase in the average net price at private for-profit institutions, there is a \$0.13 increase in

parent PLUS loan borrowing. Neither the average Pell grants or average federal undergraduate student borrowing variables have a significant effect on the average parent PLUS loan borrowing at this type of institution.

When running the Z-tests on the AVG_NETPRICE, AVG_PELL, and AVG_UGLOAN variables to test the previously stated hypotheses (Table 7), the null hypothesis is only rejected when comparing the differences in coefficients for AVG_NETPRICE between public and private nonprofit and public and private for-profit institutions, respectively. While the average net price has an effect on parent PLUS loan borrowing at all three schools, there is statistically significant evidence that the effect of average net price on parent PLUS loan borrowing is greater at public institutions when compared to both private nonprofit and private for-profit institutions: \$0.23 vs \$0.17 vs \$0.13. Even though parent PLUS loan borrowing is still greater at both private nonprofit and private for-profit institutions compared to public institutions, this research suggests that the relationship between average net price and average parent PLUS loan borrowing is stronger at public institutions and that borrowing at these institutions is more sensitive to price when compared to private nonprofit and private for-profit institutions.

The lower sensitivity to average net price at private non-profit institutions might be attributed to the notion that parents are using savings or other means to finance higher education costs. Historically, private nonprofit institutions have attracted more students from affluent families, and this is especially true when looking at the wealth disparity found among students who attend IVY league institutions.¹⁵ If this is the case, then it is logical that increases in price would have a lower relative effect on increases in parent borrowing because they are able to

¹⁵ According to a NY Times article published in 2017, 38 colleges had more students from the top one percent of income than from the bottom 60 percent, <https://www.nytimes.com/interactive/2017/01/18/upshot/some-colleges-have-more-students-from-the-top-1-percent-than-the-bottom-60.html>.

access savings or more competitive forms of financing. While it is important to understand which factors affect parent PLUS loan borrowing overall, identifying the differential effects of these factors by institution type may allow for more targeted policy recommendations.

IX. POLICY RECOMMENDATIONS

An increase in average net price has a positive and significant effect on the increase in average parent PLUS loan borrowing at all institutions, but the sensitivity to this price increase is greatest at public institutions compared to private nonprofit and private for-profit institutions. As such, if average net price is strongly related to parent PLUS loan borrowing, it is then necessary to identify the sources through which institutions of higher education communicate information regarding net price and borrowing options to parents. More importantly, the ways in which this information may be communicated differently among institutions is of great interest. Specific net price and federal borrowing information is formally communicated through financial aid award letters while general net price and federal borrowing information is provided through other sources such as the institutions' own websites and the College Scorecard. Therefore, it is important to discuss policy recommendations that may reduce or eliminate the differential effects of average net price on average parent PLUS loan borrowing between different types of institutions and to also introduce recommendations that can increase transparency and possibly lead to improved outcomes for parent borrowers regardless of institution type.

A. Financial Aid Award Letter Standardization

If the number of parent PLUS loan borrowers and the amount being borrowed are increasing, this means that more families are filling out financial aid forms and receiving

financial aid award letters as a result. According to Fletcher, Webster, and Wenhua (2020), based on responses from in-depth interviews they conducted with 49 parent borrowers, nearly two-thirds of the parents they surveyed learned about parent PLUS loans from either the college's financial aid office or going through the process of completing a financial aid application form such as the FAFSA. Unfortunately, the lack of uniformity and consistency in these award letters can pose problems for parents, students, and borrowers, and may contribute to differences in borrowing at public, private nonprofit, and private for-profit institutions.

The Decoding the Cost of College: The Case for Transparent Financial Aid Award Letters report from New America and uAspire published in June 2018 reveals some interesting findings that tie closely to the research motivations of this paper. Among many interesting findings that clearly showcase wide disparity and inconsistency of what information is reported by colleges on their financial aid award letters was a focus on the misleading packaging of parent PLUS loans. They note that these loans carry the most risk of all the federal loan programs since they are capped at the total cost of attendance (COA) minus other aid from each school, and eligibility is based solely on credit history as opposed to an ability to repay, which can easily allow some parents to borrow excessive amounts year after year. In their survey of 515 schools, 128 included parent PLUS loans on their award letters. 67 of these used unique terms to describe the loan and 12 of them even failed to use the word "loan" in the description of the parent PLUS loan.

They also find that approximately 15 percent of institutions presented the parent PLUS loans as an item of aid, which is misleading since the parents have to apply and be approved for this type of aid. It can also cause confusion and make award packages appear more generous than they actually are. As a result of this lack of uniformity, schools may be able to utilize practices

that both encourage well-qualified borrowers who would likely be better off exploring the private student loan market or less-qualified borrowers in the traditional sense who may not have the capacity to repay these parent PLUS loans. Evans, Boatman, and Soliz (2019) measure the framing and labelling effect to see if student loan participation changes based on how the financing option is presented to students. They introduce an experiment where they frame the financing option as either an income-based repayment or an income-sharing arrangement where students are made aware of what their monthly payment is and what it would be if their income increased. In the experiment group they labeled the first option as loan and the second as an income-sharing agreement.

As a result, they find that by simply labeling a contract a loan reduces the likelihood of selecting that option by 8-11 percent and that these effects are more pronounced among black and Hispanic high school students who are twice as likely to avoid the loan option when it is labelled as a loan. Their research does not suggest that lower loan participation is necessarily bad, since this could also reflect the optimal choice for a student; however, it is interesting to think about this as it compares with research provided by New America and uAspire (2018) since the framing and labelling used in financial aid award letters could result in confusion and sub-optimal choices for borrowers. Although Evans, Boatman, and Soliz (2019) only analyze the borrowing preferences of undergraduate students, it is important to consider how this framing is understood by parent borrowers as well. The research in this paper identifies differences between the effect of average net price on average parent PLUS loan borrowing at public institutions compared to private nonprofit and private for-profit, thus it is very possible that the use of various financial aid packaging strategies at these institutions could contribute to these differences, especially since financial aid award letters communicate net price amounts to

families. Standardizing financial aid award letters may reduce the differential effects of average net price on average parent PLUS loan borrowing between different types of institutions.

B. College Scorecard Enhancements

In order to assist parents and prospective students going through the process of evaluating public, private nonprofit, and private for-profit institutions, the federal government launched the College Scorecard website in 2015 to help families navigate the evaluation of more quantitative factors related to costs, admissions, and results, such as graduation rates and employment opportunities. The College Scorecard site provides information on more than 7,000 institutions of higher education and data is compiled from several different resources, including NSLDS, IPEDS, and the U.S. Department of the Treasury. The site has received wide use with over 2.5 million users accessing the site between 2015 and 2017 alone.¹⁶ While recent enhancements have been made to the site to display information such as first-year median-earnings figures by major, the site can still be improved when it comes to displaying information related to borrowing at the institution level. Currently, the College Scorecard displays the median amount of debt borrowed by undergraduate students through the federal student aid program, but does not report any information related to parent PLUS loan borrowing.

Based on the previously discussed findings that a large percentage of students and parents view the repayment of parent PLUS loans as a shared responsibility, the average or median amount of parent PLUS loan borrowing for each institution should be reported on the College Scorecard website to increase transparency related to the borrowing decisions made by families.

¹⁶ This figure was reported in a 2017 article from Inside Higher Ed <https://www.insidehighered.com/news/2017/09/29/education-dept-updates-higher-ed-consumer-tool-adds-new-comparison-feature>.

Only reporting information related to the borrowing decisions of students at each institution inaccurately suggests that education debt is either only taken out by the student or that parent borrowing is not an important factor to consider when evaluating colleges. As is shown throughout this paper, the student debt problem extends past just the student, and, as a result, a re-framing of the student debt problem needs to occur to shift the focus from the student to the family since parents and students are both involved in financing higher education costs.

It is also important to note that if, in practice, parents and students are both repaying parent PLUS loans then this type of debt might also be viewed as disguised student debt to some extent given the limitations that are in place to prevent excessive student loan borrowing at the undergraduate level and the possible existence of side arrangements being made between parents and students to repay this debt.¹⁷ As average net price has a positive and significant effect on average parent PLUS loan borrowing, it is possible that disclosing parent PLUS loan borrowing information for all public, private nonprofit, and private for-profit institutions through the College Scorecard may influence borrowing decisions, since parents will become more aware of how other parents may be funding the average cost at each school.

C. Improved Loan Cost Disclosures

If parents are increasingly more willing to borrow to pay for college, enhancements need to be made with respect to what information is provided to potential borrowers in order to support transparency in truth in lending practices. Two ways this transparency might be approached would be through education (loan counseling) and improved cost disclosures. While

¹⁷ A 2019 article from Savingforcollege.com mentioned how side arrangements between students and parents can be arranged to handle the repayment of parent PLUS loans. <https://www.savingforcollege.com/article/is-the-student-responsible-for-repaying-a-parent-plus-loan>.

entrance and exit loan counseling are required for all undergraduate students, loan counseling for parent PLUS loan borrowers is only mandatory for borrowers who have adverse credit histories and receive approval to borrow or happened to find an endorser. Perhaps making loan counseling mandatory for all parent PLUS loan borrowers might result in an improved understanding of the costs and repayment options associated with this type of loan.

As previously mentioned, parent PLUS loans carry high origination fees and no APR equivalent is presented to borrowers so parents can't easily or fairly compare the costs of federal loans with the costs of private loan alternatives. One policy change that would alleviate the current "apples to oranges" environment of comparing student loan financing options for parents would be to require the presentation of APR figures using various repayment terms that properly incorporate the cost of origination fees. Providing APR figures to potential borrowers before they borrow, while they are evaluating options (perhaps displayed on financial aid award letters or during mandatory loan counseling), and after the deferral period ends could increase awareness, which might result in more responsible borrowing behavior.

In theory, rational borrowers should choose the loan with the lower interest rate, assuming all other terms are similar, and if prior research provides evidence of a positive correlation between income and credit score, then parents with higher incomes should be pursuing private loan options over parent PLUS loans. However, evidence suggests that parents in higher income households are borrowing more parent PLUS loans on average than parents in lower income households (Baum, Blagg, and Fishman, 2019). The reasons behind this are unclear if it is assumed that these borrowers are seeking the lowest cost loan option and have good credit. It may be possible that the lack of uniformity and financial aid award letter confusion or the lack of transparency in loan cost disclosures coupled with voluntary loan

counseling opportunities may influence these sub-optimal borrowing decisions among parents. Improved and effective disclosures of loan costs may prevent borrowers who are more likely to have trouble in repayment from taking out these loans to begin with, such as parent borrowers associated with private for-profit institutions, and they may also influence more affluent parents at both public and private non-profit institutions to pursue more cost effective financing options in the private market.

D. Income-Driven Repayment Plan Enhancements

While the limitations parent PLUS loan borrowers face when choosing between repayment plan options has been discussed, this paper posits that these borrowers should be allowed to participate in modified versions of the income-driven repayment plans that are currently available to student borrowers today. Contrary to this recommendation, Baum, Blagg, and Fishman (2019) argue that an income-driven repayment plan system shouldn't apply to parent PLUS loans for several reasons including the notions that parent incomes are not interrupted by their children's college enrollment and they are better able to predict and plan for repayment than students are. They also suggest that allowing more parent PLUS loan borrowers to access income-driven repayment plans would jeopardize the program's long-term viability and would pre-dominantly benefit higher-income families. Although their rationale is justified and problems do exist in the current income-driven repayment plan system, their suggestions to exclude borrowers from these types of repayment plans is neither recommended nor optimal, especially if certain modifications can be made.

In order to address the concerns of making sure financially affluent borrowers do not take advantage of the system, and to provide flexibility and a safety net for disadvantaged borrowers,

modifications to the existing income-driven repayment plans could include additional requirements to better assess a borrower's ability to pay along with modifications to the existing loan forgiveness provisions. Baum, Blagg, and Fishman (2019) note that parent PLUS loan borrowers might change their earnings behavior or choose to retire early if it would reduce their payments and/or possibly qualify them for loan forgiveness at some point in the future. If this is the case, then perhaps an assessment of both income and assets could be used when evaluating a borrower's ability to pay and determining the corresponding monthly payment, similar to how the EFC formula uses both to arrive at an approximation for a family's ability to pay for college costs. Assessing assets of student borrowers would not likely change their monthly payments under the existing income-driven repayment plans since most of them would not have had sufficient time to accumulate a substantial amount of assets. When considering the long-term viability of this federal program, perhaps the benefits of loan forgiveness would be restricted only to student borrowers. Therefore, all parent PLUS loan borrowers would be responsible for paying back the full balance originally borrowed, but the repayment term lengths would vary based on an improved annual assessment of a borrower's ability to pay.

When considering disadvantaged borrowers, especially older borrowers in this category or borrowers at private for-profit institutions, they should take care in evaluating the consequences of taking out parent PLUS loans especially if their income fluctuates, they are near retirement, or if they really won't be able to repay despite the ease in which they are able to obtain these loans in the first place. These borrowers may face additional hardships in the future if they are not able to participate in modified income-driven repayment plans that tie their monthly payment to their ability to repay since the federal government can garnish wages, tax refunds, and Social Security benefits in the case of default. Walsemann and Ailshire (2016)

identify characteristics of parents with child-related educational debt among the late baby boom cohort. They note that acquiring educational debt for children can compete with other economic priorities such as saving for retirement, paying down a mortgage, or delaying retirement, which may heighten their financial risk in older adulthood. The motivation behind their study is well supported and their mention of how parents are often overlooked in policy debates about education debt is properly aligned with the motivations of this paper. To illustrate the heightened financial risk in older adulthood referenced by Walsemann and Ailshire (2016), approximately 114,000 borrowers age 50 and older had their Social Security benefits offset to repay defaulted federal student loans in 2015 (GAO-17-45 Social Security Offsets Report).

While the proposal presented by Baum, Blagg, and Fishman (2019) to tie the parent PLUS loan borrowing limit to the family's EFC calculation is supported by the author, it must be acknowledged that this proposal is prospective and does nothing to help existing loan borrowers who already carry this type of debt. Implementing the suggested improvements and modifications to income-driven repayment plans for parents should benefit parent PLUS loan borrowers regardless of which institution they are associated with. Future research should examine the repayment outcomes of parent PLUS loan borrowers associated with different institution types to help determine where education financing policy efforts should be focused for improved outcomes.

In conclusion, requiring improved disclosures that incorporate all loan costs, recommending standardization and uniformity in financial aid award letters, incorporating parent PLUS loan borrowing data on the College Scorecard website, and expanding the eligibility to participate in modified income-driven repayment plans may result in improved borrower behavior and loan outcomes for current and potential parent borrowers associated with public,

private nonprofit, and private for-profit institutions. As college costs continue to rise, parent PLUS loans become a more popular answer to the question asked by millions of families, “how are we going to afford this?”

X. REFERENCES

- Avery, C., & Turner, S. (2012). Student Loans: Do College Students Borrow Too Much – Or Not Enough? *Journal of Economic Perspectives*, 26(1), 165-192.
- Barr, N. (2016). Milton Friedman and the Finance of Higher Education. *Milton Friedman: Contributions to Economics and Public Policy*, New York and Oxford, Oxford University Press, Ch. 22, 436-463
- Barr, N. (2017). *Funding post-compulsory education*. In: Johnes, Geraint, Johnes, Jill, Agasisti, Tommaso and López-Torres, Laura, (eds.) *Handbook on the Economics of Education*. Edward Elgar.
- Barr, N., Chapman, B., Dearden, L., & Dynarski, S. (2019). The US college loans system: Lessons from Australia and England. *Economics of Education Review*, 71, 32-48.
- Baum, S., Blagg, K., & Fishman, R. (2019). Reshaping Parent PLUS Loans: Recommendations for Reforming the Parent PLUS Program. *Urban Institute – Center on Education Data and Policy*, April 2019.
- Beer, R., Ionescu, F., & Li, G. (2018). *Are Income and Credit Scores Highly Correlated?* FED Notes No. 2018-08-13.
- Bricker, J., & Thompson, J. (2016). Does Education Loan Debt Influence Household Financial Distress? An Assessment Using the 2007-2009 Survey of Consumer Finances Panel. *Contemporary Economic Policy*, 34(4), 660-677.
- Chou, T., Looney, A., & Watson, T. (2017). *Measuring Loan Outcomes at Postsecondary Institutions: Cohort Repayment Rates as an Indicator of Student Success and Institutional Accountability* (NBER Working Paper No. 23118). Retrieved from National Bureau of Economic Research Website: <http://www.nber.org/papers/w23118>
- Clarke, P., Crawford, C., Steele, F., & Vignoles, A. (2010). *The Choice Between Fixed and Random Effects Models: Some Considerations for Educational Research*. IZA Discussion Paper No. 5287.
- Country Financial (2019, June 4). *Country Financial Security Index*. Retrieved from <https://www.countryfinancial.com/en/about-us/newsroom/year2019/paying-the-price-of-parenting--more-than-half-of-americans-willi.html>
- Deming, D., Goldin, C. and Katz, L. (2012). The For-Profit Postsecondary School Sector: Nimble Critters or Agile Predators? *Journal of Economic Perspectives* 26 (1), 139–64.
- Evans, B., Boatman, A., & Soliz, A. (2019). Framing and Labelling Effects in Preferences for Borrowing for College: An Experimental Analysis. *Research in Higher Education*, 60, 438-457.

- Fletcher, C., Webster, J., & Wenhua, D. (2020). *PLUS Borrowing in Texas: Repayment Expectations, Experience, and Hindsight by Minority-Serving Institution Status*. Trellis Company. Retrieved from: <http://www.trelliscompany.org/wp-content/uploads/2020/01/PLUS-Borrowing-in-Texas.pdf>
- Goodell, J. (2016). Do for-profit universities induce bas student loans? *The Quarterly Review of Economics and Finance*, 61, 173-184.
- Looney, A., & Yannelis, C. (2015). A Crisis in Student Loans?: How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Defaults. *Brooking Papers on Economic Activity*, Fall 2018, 1-89.
- Looney, A., & Yannelis, C. (2019). How useful are default rates? Borrowers with large balances and student loan repayment. *Economics of Education Review*, 71, 135-145.
- Ma, J., Baum, S., Pender, M., & Libassi, C. (2018), *Trends in Student Aid 2018*. New York: College Board.
- Ma, J., Baum, S., Pender, M., & Libassi, C. (2019), *Trends in College Pricing 2019*. New York: College Board.
- Mankiw, N. G. (1986). The allocation of credit and financial collapse. *The Quarterly Journal of Economics*, 101, 455–70.
- Mazzeo, C. (2007). *Private Lending and Student Borrowing: A Primer*. Footing the Tuition Bill, Washington, D.C.: AEI Press.
- Menges, K., & Leonhard, C. (2016). Factors that Affect Willingness to Borrow Student Loans among Community College Students. *Journal of Student Financial Aid*, 46(2), Article 5.
- Nasiripour, S., & Levitt, H. (2020, February 5). *Getting into Harvard May Mean Cheaper Loans than Going to Howard*. Bloomberg. Retrieved from <https://news.bloomberglaw.com/banking-law/loan-rates-seen-higher-for-students-at-less-prestigious-schools>
- New America – uAspire. (2018). *Decoding the Cost of College: The Case for Transparent Financial Aid Award Letters*. June 2018.
- Norvilitis, J., & Batt, M. (2016). Beyond Financial Need: Predictors of Student Loans and Student Loan Attitudes. *Journal of Student Financial Aid*, 46(3), Article 4.
- Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. R. (1998). Using the Correct Statistical Test for the Equality of Regression Coefficients. *Criminology*, 36(4), 859–866.

Radwin, D., Conzelmann, J.G., Nunnery, A., Lacy, T.A., Wu, J., Lew, S., Wine, J., and Siegel, P. (2018). *2015–16 National Postsecondary Student Aid Study (NPSAS:16): Student Financial Aid Estimates for 2015–16* (NCES 2018-466). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018466>.

Regulation Z (12 CFR 1026).

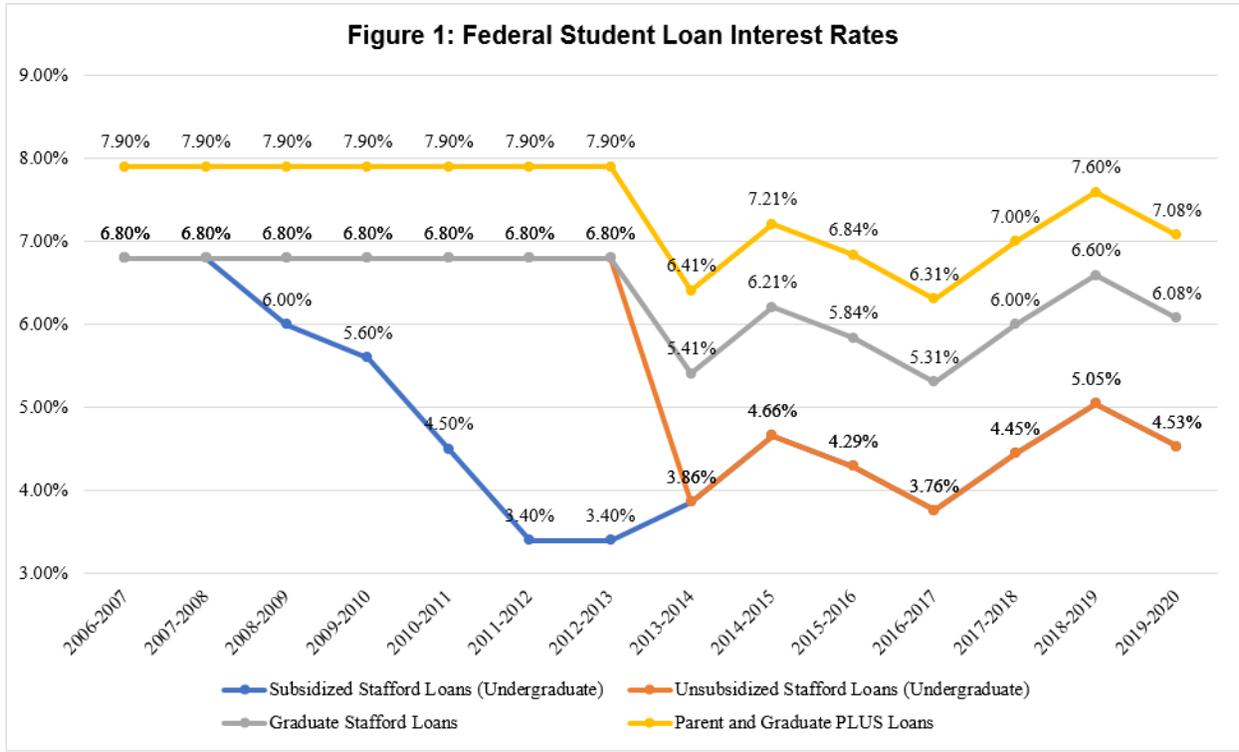
Sallie Mae & Ipsos. (2018). *How America Pays for College: Sallie Mae's national study of college students and parents conducted by Ipsos Public Affairs*. Washington, DC: Author. Available from <https://www.salliemae.com/assets/research/HAP/HowAmericaPaysforCollege2018.pdf>

Sallie Mae & Ipsos. (2019). *How America Pays for College: Sallie Mae's national study of college students and parents conducted by Ipsos Public Affairs*. Washington, DC: Author. Available from <https://www.salliemae.com/assets/research/HAP/HowAmericaPaysforCollege2019.pdf>

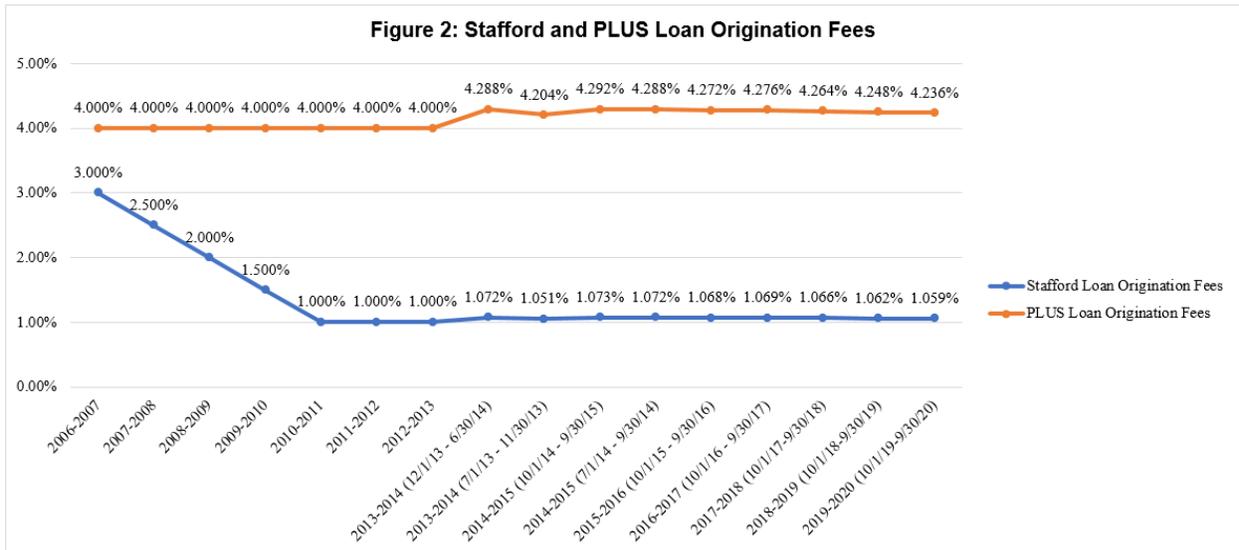
United States Government Accountability Office. (2016). *Social Security Offsets: Improvements to Program Design Could Better Assist Older Student Loan Borrowers with Obtaining Permitted Relief*. GAO-17-45, Washington, D.C.: December 19, 2016.

Walsemann, K., & Ailshire, J. (2017). Student Debt Spans Generations: Characteristics of Parents Who Borrow to Pay for Their Children's College Education. *Journals of Gerontology*, 72(6), 1084-1089.

XI. APPENDIX



Source: The Office of Federal Student Aid (2006-2020)



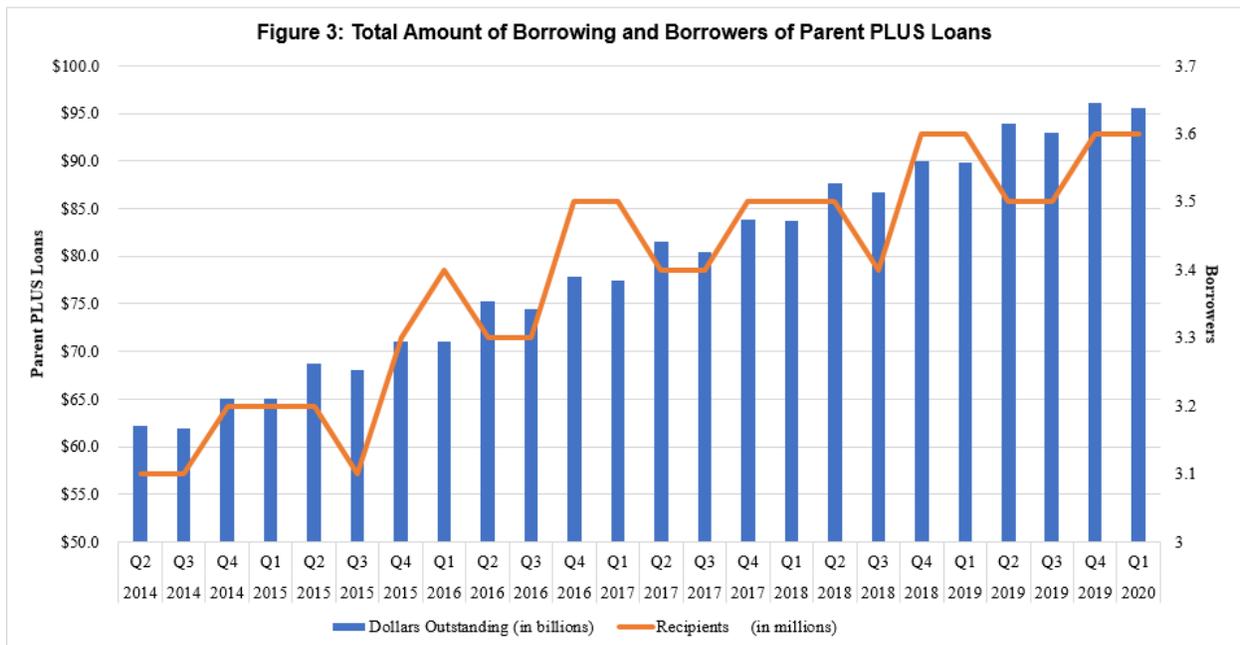
Source: The Office of Federal Student Aid (2006-2020)

Equation 1: APR Formula

$$APR = \left(\left(\frac{\text{Interest} + \text{Fees}}{\text{Principal}} \right) \times 365 \right) \times 100$$

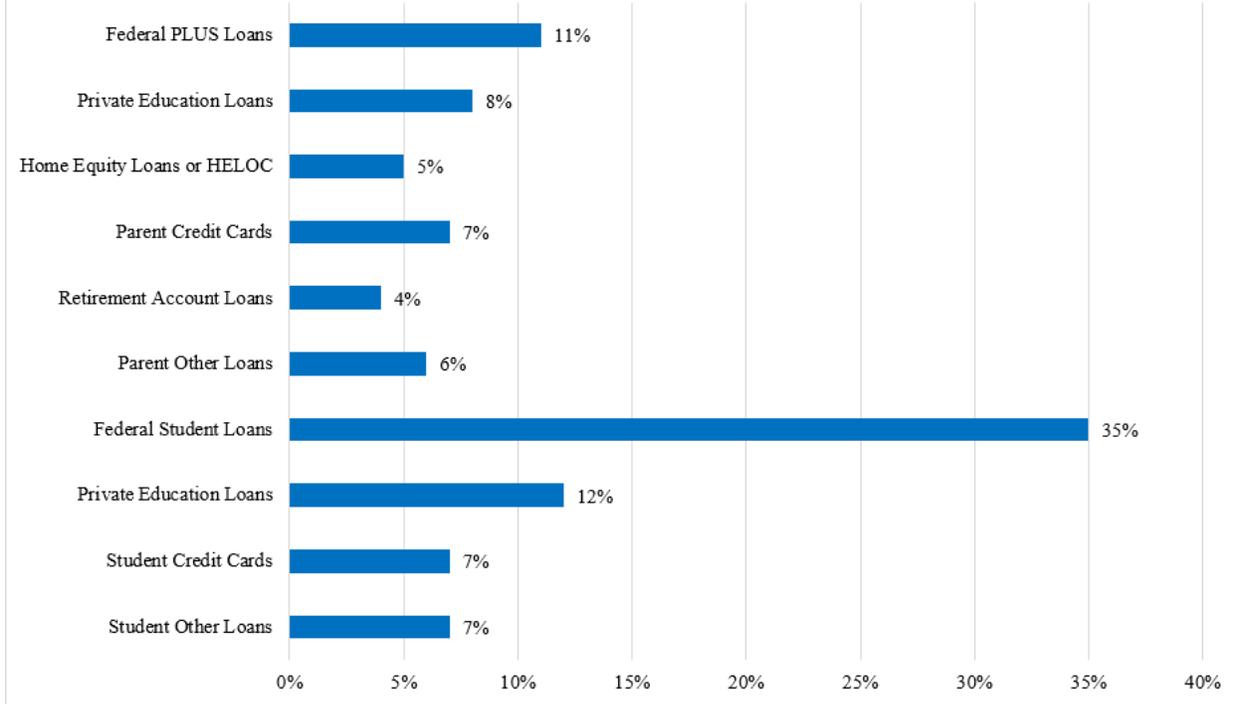
Table 1: Parent PLUS Loan vs. Private Loan APR Comparison

	<i>Parent PLUS Loan</i>	<i>Private Loan</i>	<i>Difference</i>
Initial Loan Balance	\$50,000	\$50,000	
Interest Rate	7.08%	8.00%	-0.92%
Origination Fee	4.236%	0%	4.236%
Adjusted Loan Balance	\$47,882	\$50,000	(\$2,118)
10-Year Monthly Payment	\$582.61	\$606.64	(\$24.03)
30-Year Monthly Payment	\$335.34	\$366.88	(\$31.54)
10-Year APR	8.07%	8.00%	0.07%
30-Year APR	7.52%	8.00%	-0.48%
Difference in 10-Year APR Compared to Stated Interest Rate	0.99%	N/A	
Difference in 30-Year APR Compared to Stated Interest Rate	0.44%	N/A	



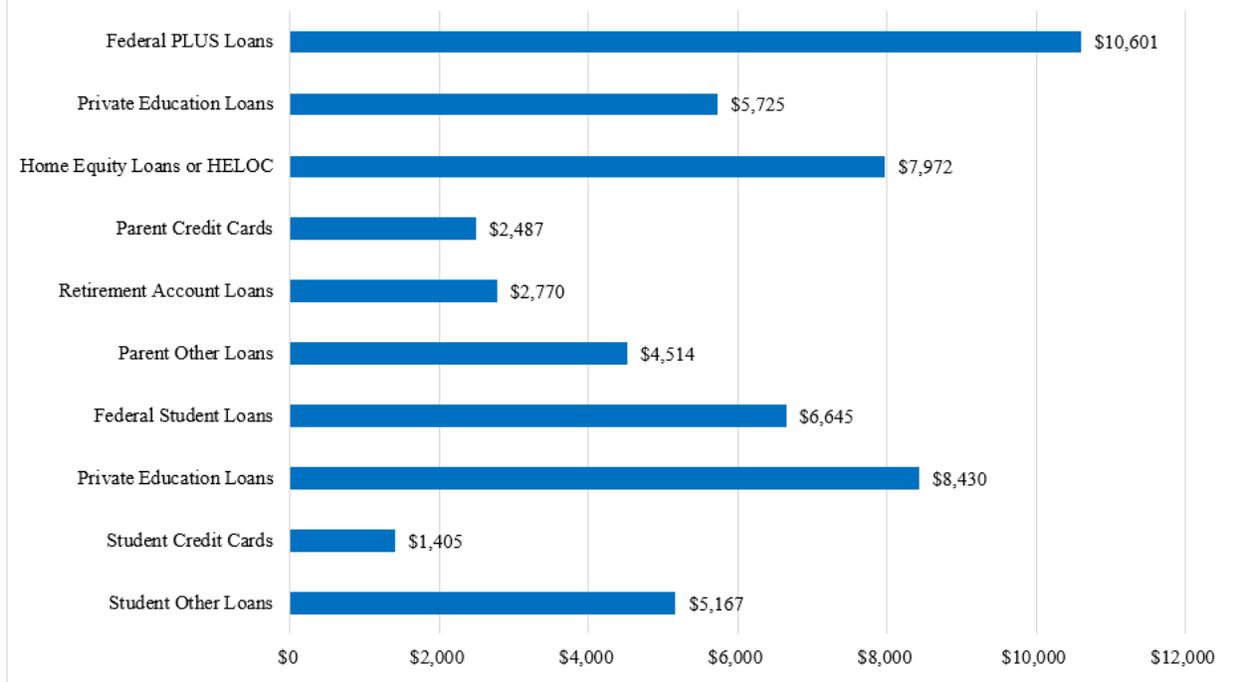
Source: National Student Loan Data System (Q2 2014 - Q1 2020)

Figure 4: Percentage of Families Using Each Source of Financing (2019)

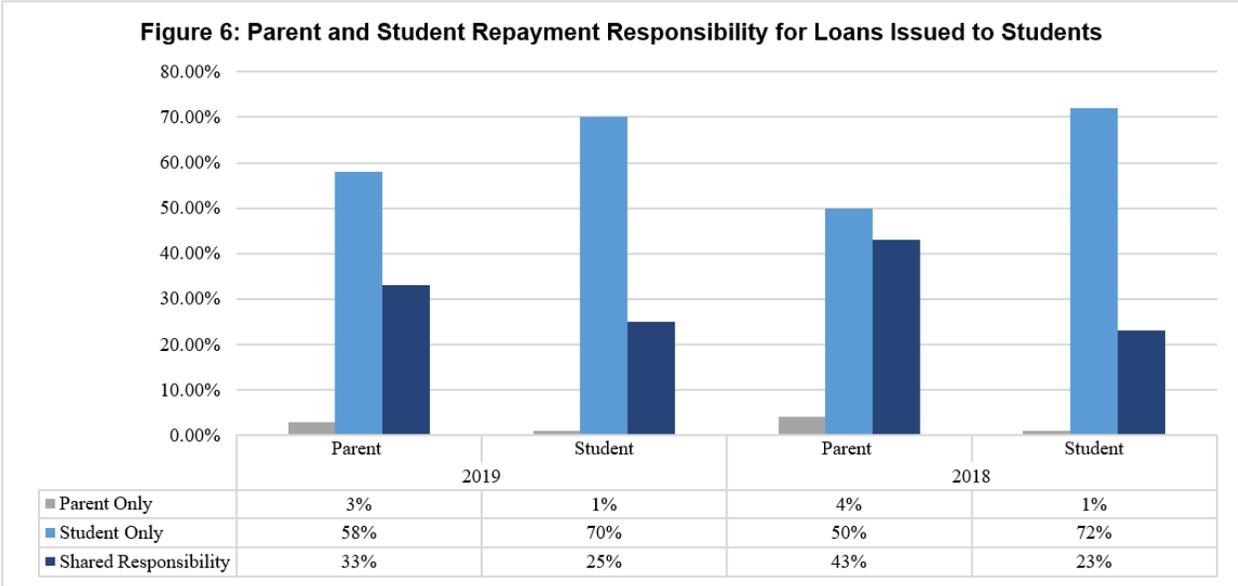


Source: Sallie Mae's How America Pays for College (2019)

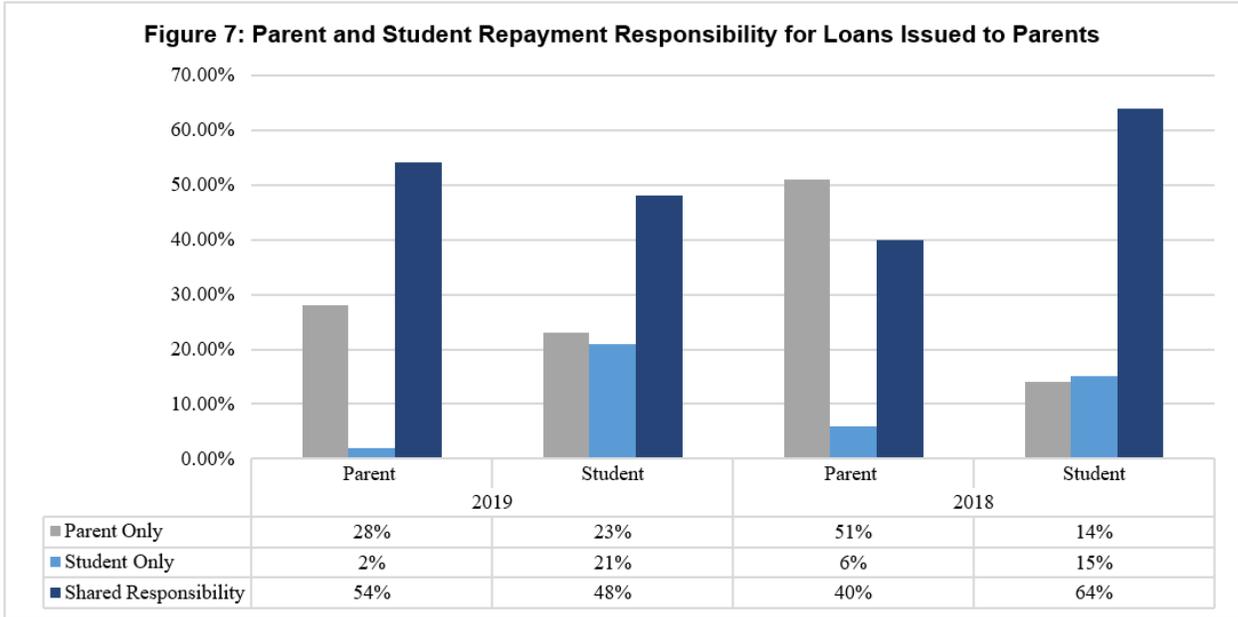
Figure 5: Average Amount Borrowed from Each Source (2019)



Source: Sallie Mae's How America Pays for College (2019)



Source: Sallie Mae's How America Pays for College (2018-2019)



Source: Sallie Mae's How America Pays for College (2018-2019)

Table 2: Hausman Test Results

Cross-Section Random Effects (PUBLIC)			Cross-Section Random Effects (PRIVATE_NP)			Cross-Section Random Effects (PRIVATE_FP)			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	
Cross-Section Random	20.282	3,000	Cross-Section Random	519.616	3,000	Cross-Section Random	89.304	3,000	
Cross-section random effects test comparisons			Cross-section random effects test comparisons			Cross-section random effects test comparisons			
Variable	Fixed	Random	Var(Diff)	Prob.	Variable	Fixed	Random	Var(Diff)	Prob.
AVG_NETPRICE	0.455	0.475	0.000	0.000	AVG_NETPRICE	0.123	0.213	0.000	0.000
AVG_PELL	0.519	0.560	0.000	0.054	AVG_PELL	0.172	0.249	0.001	0.018
AVG_FEDUG_LOAN	0.009	0.014	0.000	0.594	AVG_FEDUG_LOAN	0.044	0.027	0.000	0.206
Period Random Effects (PUBLIC)			Period Random Effects (PRIVATE_NP)			Period Random Effects (PRIVATE_FP)			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	
Period Random	20.436679	3	Period Random	45.972	3,000	Period Random	4.595	3,000	
Period random effects test comparisons			Period random effects test comparisons			Period random effects test comparisons			
Variable	Fixed	Random	Var(Diff)	Prob.	Variable	Fixed	Random	Var(Diff)	Prob.
AVG_FEDUG_LOAN	0.552	0.558	0.000	0.000	AVG_FEDUG_LOAN	0.604	0.603	0.000	0.083
AVG_NETPRICE	1.068	1.082	0.000	0.380	AVG_NETPRICE	0.785	0.716	0.002	0.138
AVG_PELL	-0.047	-0.054	0.000	0.087	AVG_PELL	-0.235	-0.224	0.000	0.260

Equation 2: Z-Test

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

Table 3: Descriptive Statistics

Public Institutions (PUBLIC)					
	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
AVG_PLUSLOAN	3976.00	10067.80	3484.10	2000.00	25620.98
AVG_NETPRICE	3976.00	12270.00	3816.93	909.00	25472.00
AVG_PELL	3976.00	4131.56	374.18	1863.00	5986.00
AVG_UGLOAN	3976.00	6685.32	1076.00	831.00	11943.00

Private Nonprofit Institutions (PRIVATE_NP)					
	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
AVG_PLUSLOAN	7140.00	14282.38	5720.17	2066.67	38905.08
AVG_NETPRICE	7140.00	22669.02	6649.87	2584.00	52451.00
AVG_PELL	7140.00	4080.60	456.74	493.00	5769.00
AVG_UGLOAN	7140.00	7329.77	1390.28	457.00	14707.00

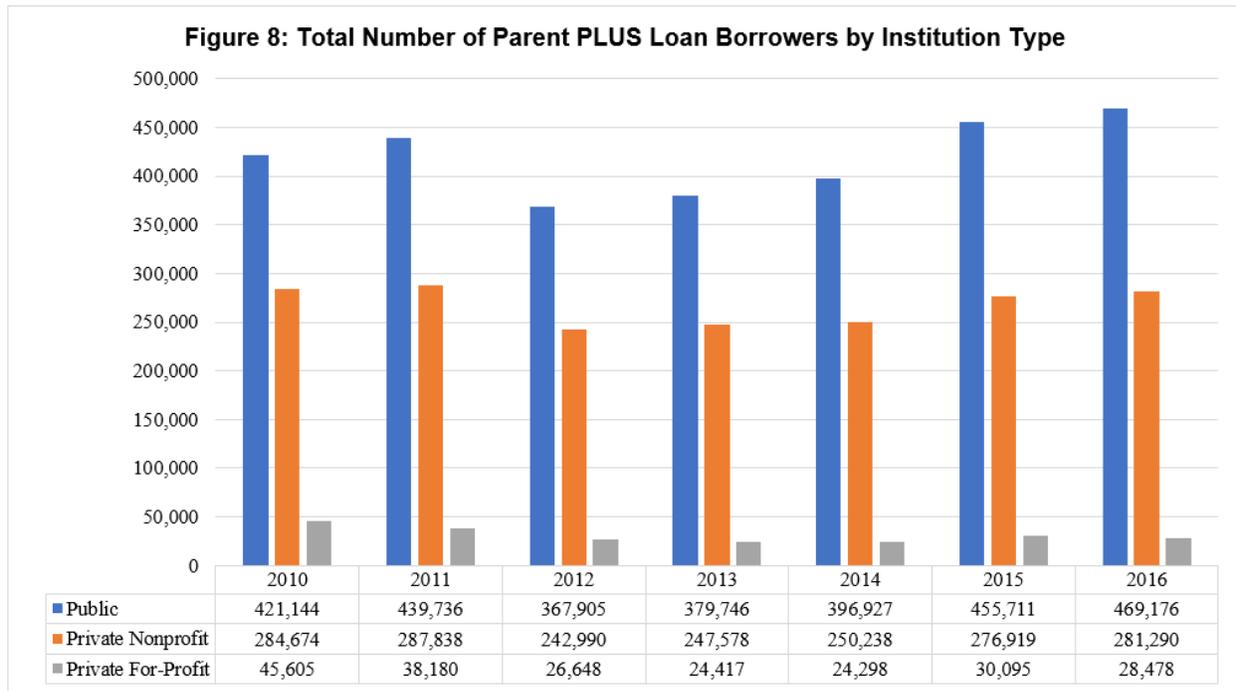
Private For-Profit Institutions (PRIVATE_FP)					
	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
AVG_PLUSLOAN	868.00	11639.00	6320.56	2295.67	41394.90
AVG_NETPRICE	868.00	22585.23	6905.16	1594.00	66743.00
AVG_PELL	868.00	3993.49	742.86	1285.00	5821.00
AVG_UGLOAN	868.00	8217.11	1895.57	1812.00	16630.00

Table 4: Correlation Matrix

	Public Institutions (PUBLIC)			
	AVG_PLUS	AVG_NETPRICE	AVG_PELL	AVG_UGLOAN
AVG_PLUSLOAN	1.000	0.618	0.124	0.188
AVG_NETPRICE	0.618	1.000	0.017	0.284
AVG_PELL	0.124	0.017	1.000	0.271
AVG_UGLOAN	0.188	0.284	0.271	1.000

	Private Nonprofit Institutions (PRIVATE_NP)			
	AVG_PLUS	AVG_NETPRICE	AVG_PELL	AVG_UGLOAN
AVG_PLUSLOAN	1.000	0.774	0.220	-0.115
AVG_NETPRICE	0.774	1.000	0.097	-0.041
AVG_PELL	0.220	0.097	1.000	0.187
AVG_UGLOAN	-0.115	-0.041	0.187	1.000

	Private For-Profit Institutions (PRIVATE_FP)			
	AVG_PLUS	AVG_NETPRICE	AVG_PELL	AVG_UGLOAN
AVG_PLUSLOAN	1.000	0.642	0.032	0.092
AVG_NETPRICE	0.642	1.000	-0.039	0.192
AVG_PELL	0.032	-0.039	1.000	0.394
AVG_UGLOAN	0.092	0.192	0.394	1.000



Source: National Student Loan Data System (2010-2016)

Table 5: ANOVA Single Factor and Tukey's HSD Test

Variable: AVG_PLUSLOAN

SUMMARY

Groups	Count	Sum	Average	Variance	Std Dev.
Public	3976	40029560.11	10067.80	12138958.18	3484.10
Private_NP	7140	101976161.12	14282.38	32720320.31	5720.17
Private_FP	868	10102652.40	11639.00	39949427.69	6320.56

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4.64E+10	2	23201048333.62	878.33	0.00	3.00
Within Groups	3.16E+11	11981	26415063.79			
Total	3.63E+11	11983				

TUKEY'S HSD

		Difference	n (Group 1)	n (Group 2)	SE	q
Public	Private_NP	4214.58	3976	7140	71.91	58.61
Private_NP	Private_FP	2643.38	7140	868	130.64	20.23
Private_FP	Public	1571.20	868	3976	136.15	11.54

Table 6: Regression Results: Fixed Effects

	<i>PUBLIC</i>	<i>PRIVATE NP</i>	<i>PRIVATE FP</i>
<i>Constant</i>	6039.22 (691.53)	9523.16 (456.580)	7425.87 (1049.83)
<i>AVG_NETPRICE</i>	0.23*** (0.02)	0.17*** (0.01)	0.13*** (0.03)
<i>AVG_PELL</i>	0.19 (0.12)	0.18** (0.08)	0.28 (0.20)
<i>AVG_FEDUG_LOAN</i>	0.07* (0.04)	0.03 (0.02)	0.03 (0.08)
R-squared	0.94	0.96	0.89
Adjusted R-squared	0.93	0.96	0.87
No. observations	3976	7140	868

Year Fixed Effects and School Fixed Effects

Standard errors are presented in parentheses

*, **, ***, indicated significance at the 90%, 95%, and 99% level, respectively

Table 7: Z-Tests

AVG_NETPRICE				
<i>Hypothesis</i>	<i>Differences in Coefficients</i>	<i>Differences in SE</i>	<i>Calculated Z-Stat</i>	<i>Result</i>
PUBLIC = PRIVATE_NP	0.063	0.029	2.200	Reject Null Hypothesis
PUBLIC = PRIVATE_FP	0.103	0.042	2.450	Reject Null Hypothesis
PRIVATE_NP = PRIVATE_FP	0.040	0.037	1.070	Do Not Reject Null Hypothesis

AVG_PELL				
<i>Hypothesis</i>	<i>Differences in Coefficients</i>	<i>Differences in SE</i>	<i>Calculated Z-Stat</i>	<i>Result</i>
PUBLIC = PRIVATE_NP	-0.040	0.051	-0.782	Do Not Reject Null Hypothesis
PUBLIC = PRIVATE_FP	0.023	0.047	0.500	Do Not Reject Null Hypothesis
PRIVATE_NP = PRIVATE_FP	0.063	0.056	1.128	Do Not Reject Null Hypothesis

AVG_UGLOAN				
<i>Hypothesis</i>	<i>Differences in Coefficients</i>	<i>Differences in SE</i>	<i>Calculated Z-Stat</i>	<i>Result</i>
PUBLIC = PRIVATE_NP	0.033	0.043	0.767	Do Not Reject Null Hypothesis
PUBLIC = PRIVATE_FP	0.038	0.084	0.454	Do Not Reject Null Hypothesis
PRIVATE_NP = PRIVATE_FP	0.005	0.079	0.066	Do Not Reject Null Hypothesis