

FINANCING ADULTHOOD: THE RISKS AND HOPES OF PARENT BORROWING
THROUGH THE PARENT LOAN FOR UNDERGRADUATE STUDENTS (PLUS)

PROGRAM

Kennan Cepa

A DISSERTATION

in

Sociology

Presented to the Faculties of the University of Pennsylvania

in

Partial Fulfillment of the Requirements for the

Degree of Doctor of Philosophy

2021

Supervisor of Dissertation

Co-Supervisor of Dissertation

Hyunjoon Park
Korea Foundation Professor of Sociology

Grace Kao
IBM Professor of Sociology
Yale University

Graduate Group Chairperson

Jason Schnittker
Professor of Sociology

Dissertation Committee

Paul D. Allison
Professor Emeritus of Sociology

Laura W. Perna
Vice Provost for Faculty, GSE Centennial
Presidential Professor of Education

FINANCING ADULTHOOD: THE RISKS AND HOPES OF PARENT BORROWING
THROUGH THE PARENT LOAN FOR UNDERGRADUATE STUDENTS (PLUS)
PROGRAM

COPYRIGHT

2021

Kennan Ceba

ACKNOWLEDGMENTS

This dissertation would not exist without the thoughtful guidance of my committee members: Grace Kao, Hyunjoon Park, Paul Allison, and Laura Perna. They welcomed me into the fields of Sociology and Education and met with me in-person (and then virtually) to help me develop ideas and refine my methods. Thank you for your encouragement, time, and wisdom.

I was also lucky enough to have mentors along the road to graduate school and through my Ph.D. program. Jim Rosenbaum, without you I would never have even thought I could start this journey. Zeyu Xu was my first methods instructor and showed me that I could pursue quantitative research. Frank Furstenberg and Chuck Bosk showed me immense kindness throughout graduate school and especially at the points when I doubted myself most. I owe you so much gratitude for shepherding me through this process.

To my cohort, Aashish, Angie, Haley, Daesung, Amarachi, Jeylan, Megan, Yana, Liz, and Yun, I am so grateful that I got to do graduate school with you. To the lovely folks with the Korean Millennials program who gave me thoughtful comments on my work and welcomed me at events. Working with you all was one of my fondest graduate school experiences. Thank you to the Education and Inequality working group for reading early drafts of this dissertation along with much of my other work. I also owe thanks to Phoebe and David who were the best officemates a graduate student could ask for. I send immense thanks to Katee, Audra, and Marcus. You made graduate school both easier to manage and more enjoyable. Finally, special thanks to Ellen, Mina, and Patricia who talked about debt, college, families, and young adulthood over long walks, at porch

hangouts, and over dinners. Our conversations continuously inspired the work I produced in this dissertation and your friendship sustained me during the hard work of conveying individual's financial stress and hardship with dignity.

To my friends, thank you for patiently and graciously understanding when I missed calls, dinners, or events because of graduate school. These were not my best moments, but you buoyed me up regardless and you let me ramble about debt and education and families for years. I give special thanks to Morgan. I'm pretty grateful we will never have to study for finals together ever again, but our semi-annual study sessions were some of the highlights of graduate school.

To my family, your support means more than you can ever know. Thank you for believing this was possible for me.

But most importantly, I give my thanks to Jacob. Words will never be enough.

This research was supported by a grant from the American Educational Research Association (AERA), which receives funds for its "AERA Grants Program" from the National Science Foundation (NSF) under NSF award NSF-DRL #1749275. Opinions are my own and do not necessarily reflect those of AERA or NSF.

ABSTRACT

FINANCING ADULTHOOD: THE RISKS AND HOPES OF PARENT BORROWING THROUGH THE PARENT LOAN FOR UNDERGRADUATE STUDENTS (PLUS)

Kennan Cepa

Hyunjoon Park

Grace Kao

Funding children's college expenses can be a family project, often requiring substantial savings from parents and educational debt from children, but parents also borrow to support their children's postsecondary ambitions. Despite growing use of debt to finance children's college expenses, studies have overlooked parent borrowing's role in intergenerational financial support. This study investigates parent borrowing through the federally-funded Parent Loans for Undergraduate Student (PLUS) program to illustrate the risks and hope current higher education policies demand of families across the income distribution who are working to provide a middle-class life for their children.

To do so, this research uses three datasets from the National Center for Education Statistics, including the National Postsecondary Student Aid Study (NPSAS), a nationally-representative, cross-sectional survey of American undergraduates in 2015-16, the Beginning Postsecondary Student Longitudinal Study (BPS), a nationally-representative, longitudinal study of American undergraduates followed between 2003 and 2009; and finally, the Educational Longitudinal Study of 2002 (ELS:2002), a nationally-representative, longitudinal study of 10th-graders surveyed between 2002 and 2012. First, this study investigates the risks parents take when they borrow through PLUS by identifying parents' debt burdens across the income distribution. Second, I consider

whether parent borrowing delivers on parents' hopes by examining whether PLUS eases children's path into adulthood by increasing Bachelor's degree attainment and financial wellbeing for families across the income distribution.

My project finds that parents', regardless of their means, are burdened by PLUS loans, albeit in different ways. In addition, PLUS loan debt is highest among high- and upper-middle income parents, demonstrating that college costs are beyond the means of even advantaged families. In addition, rather than supporting young adult children as they transition to adulthood, PLUS is not guaranteed to deliver on parents' hopes. Instead, PLUS provides limited benefits in terms of degree attainment, and higher levels of PLUS loans are associated with greater financial stress for young adult children. I discuss the theoretical and policy implications for intergenerational family support, debt, and college affordability.

TABLE OF CONTENTS

<u>ACKNOWLEDGMENTS</u>	<u>III</u>
<u>ABSTRACT.....</u>	<u>V</u>
<u>TABLE OF CONTENTS</u>	<u>VII</u>
<u>LIST OF TABLES</u>	<u>IX</u>
<u>LIST OF FIGURES</u>	<u>X</u>
<u>INTRODUCTION.....</u>	<u>1</u>
College and Educational Debt.....	3
The current study.....	6
<u>CHAPTER 1 PARENT BORROWING AND DEBT BURDENS FROM PARENT PLUS LOANS.....</u>	<u>10</u>
Abstract.....	10
Introduction.....	11
Educational debt burden, college affordability, and wealth	14
Parents’ debt burden across the income distribution.....	17
<i>Parent borrowing is not a crisis: PLUS does not contribute to inequality</i>	<i>20</i>
<i>Parent borrowing is a crisis: PLUS loans contribute to inequality</i>	<i>22</i>
Data and Methods	24
Data.....	24
Variables	26
Analytic Strategy.....	29
Findings.....	31
Descriptive Findings	31
Multivariable Regression Analysis of Parent Borrowing Patterns	32
Multivariable Regression Analysis of Parents’ Debt-to-Income Ratios.....	36
Discussion.....	37
<u>CHAPTER 2 PARENT BORROWING THROUGH PLUS AND THEIR CHILDREN’S BACHELOR’S DEGREE COMPLETION</u>	<u>54</u>
Abstract.....	54

Introduction.....	54
College Affordability, Parent Borrowing, and Educational Attainment.....	57
<i>Quantitative characteristics of money: Amount and degree attainment</i>	<i>60</i>
<i>Qualitative characteristics of money: Type of resource and who borrows and degree attainment.....</i>	<i>61</i>
Data and Methods.....	64
<i>Data.....</i>	<i>64</i>
<i>Measures.....</i>	<i>66</i>
<i>Methods.....</i>	<i>71</i>
Findings.....	72
<i>Descriptive Findings.....</i>	<i>72</i>
<i>Multivariable Logistic Regression Findings.....</i>	<i>76</i>
Discussion.....	79

CHAPTER 3 YOUNG ADULTS' FINANCIAL WELLBEING: PARENTS' EDUCATIONAL DEBT AND INTERGENERATIONAL SUPPORT..... 94

Abstract.....	94
Introduction.....	95
Financial Wellbeing and Debt in Young Adulthood.....	97
Parent PLUS Loans and Intergenerational Support in Young Adulthood	101
<i>Parent borrowing through PLUS supports youth's financial well-being</i>	<i>102</i>
<i>Parent borrowing through PLUS may hurt youth's financial well-being</i>	<i>104</i>
Family Income and Young Adult Financial Hardship	107
Data and Methods.....	109
<i>Data and Sample.....</i>	<i>109</i>
<i>Variables</i>	<i>111</i>
<i>Methods.....</i>	<i>114</i>
Findings.....	114
<i>Descriptive Findings.....</i>	<i>114</i>
<i>Findings from Ordinary Least Squares and Quantile Regressions.....</i>	<i>117</i>
<i>Ordinary Least Squares and Quantile Regressions of Objective and Subjective Financial Hardship across Family Income</i>	<i>121</i>
Discussion.....	124

DISCUSSION AND CONCLUSION 143

BIBLIOGRAPHY 162

APPENDIX..... 152

LIST OF TABLES

Table 1.1. Parent Borrowing and Debt-to-Income Ratio by Parents' Income	46
Table 1.2. Odds Ratios of Any Debt (Logit), Debt among Borrowers (Truncated Regression; $\ln(y y>0)$), and Odds Ratios of Borrowing More than \$10,000 (Logit)	47
Table 1.3. Weighted Estimates Predicting Mean Debt-to-Income Ratio (OLS), Median Debt-to-Income Ratio (Quantile regression)	51
Table 2.1. Descriptive Statistics for Entire Sample and by Parent Borrowing	86
Table 2.2. Logistic Regression of Bachelor's Degree Completion on Whether Borrowed through PLUS	89
Table 2.3. Logistic Regression of Bachelor's Degree Completion on Amount of PLUS Borrowed	91
Table 2.4. Logistic Regression of Bachelor's Degree Completion on Parent Borrowing by Parents' Income	92
Table 3.1. Descriptive Statistics by Parent Borrowing	131
Table 3.2. Coefficients from Ordinary Least Squares Regression of Subjective Measure of Financial Hardship, N =5,010	134
Table 3.3. Coefficients from Ordinary Least Squares Regression Models and Quantile Regression Models Estimating Objective Financial Hardship, N=5,010	137
Table 3.4. Coefficients from Ordinary Least Squares Regression Models by Parent Income, N=5,010	139

LIST OF FIGURES

Figure 1.1A. Predicted Probabilities of Parent Borrowing through PLUS by Parent Income	50
Figure 1.1B. Predicted Amount Parents Borrowed through PLUS (\$)	50
Figure 1.2. Predicted Debt-to-Income Ratio among Parent Borrowers with Non-Zero Income net of Controls	53
Figure 2.1. Predicted Probabilities of Bachelor's Degree Attainment by Parent Borrowing and Family Income	93
Figure 3.1. Predicted Mean of Financial Stress by PLUS Loan Debt	136
Figure 3.2. Predicted Values of Debt-to-Income Ratio by PLUS Loan Debt	136
Figure 3.3. Predicted Mean Non-Mortgage Debt by PLUS Loan Debt	136
Figure 3.4 Predicted Mean Financial Stress by Parents' Income & PLUS Loan Debt ...	141
Figure 3.5. Predicted Mean and Median Debt-to-Income Ratio by Parents' Income and PLUS	141
Figure 3.6. Predicted Mean Non-Mortgage Debt by Parents' Income and PLUS	142

LIST OF APPENDICES

Appendix Table 1A. Descriptive Statistics for by Parent Borrowing through PLUS ...	152
Appendix Figure 1A. Predicted Probability of Borrowing through PLUS by Parents' Income and Race/Ethnicity	154
Appendix Figure 1B. Predicted Mean PLUS Loan Debt among Parent Borrowers by Parents' Income and Race/Ethnicity	154
Appendix Figure 1C. Predicted Probability of Borrowing More than \$10,000 of PLUS Loans by Parents' Income and Race/Ethnicity	154
Appendix Figure 1D. Predicted Median Debt-to-Income Ratio among Parent Borrowers with Non-Zero Income by Parents' Income and Race/Ethnicity	155
Appendix 3A. T-Tests Comparing Parent and Student Characteristics of Those with Missing Values for Financial Stress and Those without Missing Values	156
Appendix 3B. Quintiles of PLUS on Youth Financial Wellbeing, N=5,010	158
Appendix 3C. Comparison of Coefficients from Ordinary Least Squares Regression Models and Conditional Quantile Regression Models of PLUS with and without a Spline	159
Appendix 3D. Distribution of Debt-to-Income Ratio	160
Appendix Figure 3A. Predicted Median Debt-to-Income Ratio by PLUS and Race/Ethnicity	161

INTRODUCTION

In less than a decade, Americans' use of credit and debt increased by 26% between 2013 and 2020 (Federal Reserve Bank of New York 2020) and 80% of Americans hold some type of debt in order to pay for medical, housing, and educational expenses (Urahn et al. 2015). Americans may borrow even more in the coming years as households and the economy recover from the current recession caused by the global pandemic. Given how much credit and debt has permeated American life, it is surprising that there has been little attention to whether families borrow to support one another (see Pugliese et al. 2020 for an exception). In particular, parents provide considerable financial support to their young adult children as they mature, attend college, and find their footing as they transition into adult roles (Cooney and Uhlenberg 1992; Kornrich and Furstenberg 2013; Maroto 2018; Schoeni and Ross 2005). Yet, less is known about parent borrowing during children's young adult years and it is an open question as to whether parents' borrowing helps smooth their children's transition into adulthood.

Over the last three decades, parents have increasingly provided financial support to their children navigating the transition to adulthood (Kornrich and Furstenberg 2013; Schneider, Hastings, and LaBriola 2018; Schoeni and Ross 2005). In 2008, parents spent roughly \$8,000 quarterly on their young adult children, a 67% increase from three decades prior (Kornrich and Furstenberg 2013). This financial support is critical for children's attainment of adult milestones, by smoothing unexpected financial setbacks and supporting milestone and socioeconomic attainments, like a college degree (Swartz 2009; Swartz et al. 2011). Yet, families differ in the resources they have to support their young adult children, and scholars document a large and growing gap in parent-child

financial support for families across the income distribution (Kornrich and Furstenberg 2013; Schneider et al. 2018; Schoeni and Ross 2005). Recognizing this, scholars of family life show that parents' financial support is not restricted to cash contributions. Parents offer in-kind support, which is often interpreted as housing or food when children live at home (Fingerman, Huo, and Birditt 2020; Schoeni and Ross 2005; Swartz 2009) and this type of financial support is more commonly provided by low- and middle-income families (Aquilino 2005; Schoeni and Ross 2005). This material support is provided in addition to emotional support that parents may offer their children, through advice or close conversation (Fingerman et al. 2020; Swartz 2009). Despite the different types of parental support scholars have investigated, they have been largely silent on parents' use of debt to help support their children.

This omission is surprising, because much has been said about stagnating wages for most Americans between 1970 and the present day, coupled with rising costs-of-living, such as food, housing, and educational expenses (Atkinson, Piketty, and Saez 2011; Dwyer 2018; Houle 2014a; Keister and Moller 2000; Leicht and Fitzgerald 2006; Ma et al. 2019; Western et al. 2012). In response to these economic shifts, many families have tightened their belts, but also taken on debt, to afford daily life and expenses like college (Dwyer 2018; Houle 2014a; Tevington, Napolitano, and Furstenberg 2017). Indeed, the growing gap between costs and family resources is especially notable when it comes to higher education. After taking into account grant aid from federal, state, and institutional sources, college students and their families are expected to contribute an average of \$14,590 a year to college tuition, fees, room and board in the 2015-16 academic year (Ma et al. 2019), or 20% of the median family income in 2015 (Proctor,

Semega, and Kollar 2016a). Families often prepare for these college expenses by saving ahead of time or managing costs by enrolling their children in less expensive postsecondary schools (Tevington et al. 2017; Zaloom 2019). Even so, students and their parents have increasingly turned to debt to help finance college (National Center for Education Statistics 2016, 2020).

College and Educational Debt

College is critical for children's trajectory to, and through, adulthood. Those with a college degree are more likely to avoid poverty, find dependable jobs that pay a living wage, and live longer, healthier lives (Hout 2012; Ma, Pender, and Welch 2016). In other words, college helps youth secure a middle-class life and attain adult milestones. Parents are keenly aware of the importance of college for their children, and there is a strong norm about providing financial support for their children enrolled in college (Fingerman et al. 2020; Hartnett et al. 2013; Napolitano, Pacholok, and Furstenberg 2014). Yet, as with investigations of intergenerational support more generally, the conversation about parents' contributions for college has largely centered around cash transfers, and to a more limited degree, parents' in-kind contributions (Elliott and Friedline 2013; Henretta et al. 2012; López Turley and Desmond 2011; Rauscher 2016; Steelman and Powell 1991). There has been much less acknowledgment that parents turn to debt to help finance college.

Using debt to pay for college is common. In 2015, 61% of students borrowed to fund college expenses (National Center for Education Statistics 2020). In addition, the share of Bachelor's degree recipients whose parents borrow through the federally-financed Parent Loans for Undergraduate Students (PLUS) program grew by 151%

between 1989 and 2015 (National Center for Education Statistics 2016, 2020). Although parents may use other types of debt, like credit cards, private loans, or refinancing their home, to fund college, Sallie Mae Foundation's annual survey of American households with a college student found that PLUS was the most common source of debt parents used to pay for their children's college expenses (Sallie Mae 2019). In part this is because debt through PLUS is also more accessible to families because parents do not need to own a home (like with refinancing a mortgage), and it has lower credit requirements than other forms of debt (Baum, Blagg, and Fishman 2019; Di, Fletcher, and Webster 2019). Instead, to access federal grants or loans, parents and students provide information about their financial situations through the Free Application for Student Aid (FAFSA) (Federal Student Aid 2021), which determines applicants' financial need and eligibility. Eligibility for PLUS loans depends on being a biological or adoptive parent of a college student, being creditworthy, and whether or not students and parents displayed financial need according to FAFSA (Federal Student Aid 2021; U.S. Department of Education 2019b, 2019a). Overall, because of strong norms about parents' financial support during children's years in college, declining college affordability, and relatively easy access to educational debt, PLUS loans provide an opportunity to understand which parents rely on debt to support their young adult children and how this type of support influences mobility and family life.

In addition, parents' financial support of their young adult children underscores how much financial demand is placed on parents (Maroto 2017, 2018; Tevington et al. 2017; Walsemann and Ailshire 2016; Zaloom 2019). Ignoring parent debt provides an incomplete picture of parents' financial support and the financial burden of

intergenerational support. This is a critical cultural and political moment to discuss these issues. In the wake of the Great Recession, politicians, policymakers, and advocates have more seriously acknowledged the educational debt crisis and declining college affordability (Dwyer 2018; Keister and Lee 2014). Currently, we are in the midst of another economic crisis spurred by the global pandemic, and debt cancellation and free college policies are being promoted and debated in earnest (Murakami 2021; Zumeta and Huntington-Klein 2020). Yet, parent borrowers are largely absent from these discussions, limiting our understanding of what parents' use of educational debt tells us about college affordability.

Despite how common it is for students and parents to rely on debt to pay for college expenses, as well as other aspects of everyday life, borrowing has been characterized as a “double-edged sword” that offers access to rewards to borrowers but also introduces risks (Dwyer 2018; Dwyer, McCloud, and Hodson 2012). On one hand, debt facilitates inclusion into opportunities for mobility like education or home ownership that can lead to stronger labor market outcomes and increased wealth accumulation and life happiness (Dwyer 2018; Dwyer et al. 2012; Heller 1997; Killewald and Bryan 2016). On the other, debt also generates risks for borrowers by exacting a material and psychological toll. Specifically, debt is tied to greater financial hardship as borrowers repay their loans with interest and with higher emotional and mental stress associated with being indebted (Archuleta, Dale, and Spann 2013; Bricker and Thompson 2016; Cherney et al. 2020; Despard et al. 2016; Drentea 2000; Drentea and Reynolds 2015; Dwyer 2018; Kim and Chatterjee 2019). It is critical to understand how this duality between risks and rewards plays out in an intergenerational context.

Although scholarship on debt largely focuses on the middle-class (Houle 2014b; Leicht and Fitzgerald 2006; Porter 2012; Sullivan, Warren, and Westbrook 2000; Tevington et al. 2017; Wolff 2010, 2013; Zaloom 2019), many policymakers assert that parent borrowing is a practice unique to high-income parents (Baum et al. 2019; Murakami 2021). Understanding patterns in parent borrowing provides a clearer picture of who uses PLUS loan debt to support children's college endeavors and the potential risks these parents might face from borrowing. Patterns in parent PLUS loans have implications for young adult children's milestones and mobility as well. Various types of financial resources support educational attainment to a different degree depending on families' position in the income distribution (Alon 2011; Dwyer et al. 2012). Similarly, PLUS loans may not support Bachelor's degree attainment to the same extent for all children of parent borrowers. In addition, norms about intergenerational support and families' material resources vary across the income distribution (Cepa and Furstenberg 2021; Schoeni and Ross 2005). Parent PLUS loans may further complicate patterns in parent-child support by either limiting parents' material resources or straining intergenerational ties. Similarly, parents across the income distribution may use PLUS for different reasons. Some may use it to fund tuition expenses while others may rely on PLUS to help manage their children's own debt burden (Friedline et al. 2017; Hamilton 2016; Perna 2008). Understanding patterns in parent PLUS loans and their implications for young adult children across the income distribution provides insight into how universal educational debt is, including its risks and its rewards.

The Current Study

Given that PLUS is explicitly designed as a form of intergenerational financial

support, it provides a unique opportunity to investigate the role of debt in the intergenerational family project of financing postsecondary opportunities that smooth the passage to adulthood. My dissertation takes the dichotomy of debt as both risk and reward and modifies it slightly. I argue that PLUS loans allow parents to hope their children will reach college and economically stable adulthood, while still opening parents to financial risks. More specifically, this dissertation looks more closely at these hopes and risks to gain a better understanding of PLUS as a resource for families across the income distribution. In addition, because family resources, reasons for borrowing, and norms about adulthood depend on families' economic situation, I investigate whether the risks and hopes associated with PLUS vary for families across the income distribution.

To investigate this, I ask three, interrelated questions with different data sources from the National Center for Education Statistics (NCES) to understand whether PLUS loans help parents smooth their children's path to adulthood. Specifically, the first empirical chapter conceptualizes the risks of PLUS loans as parents' debt burdens when they borrow. I identify the implications of PLUS for college affordability and parents' economic stability. The remaining two empirical chapters consider whether PLUS loans deliver on parents' hopes to help smooth the entry into adulthood for the young adult children of parent borrowers. These chapters focus on children's educational attainment and financial wellbeing in young adulthood. Each has implications for intergenerational relationships and provides insight into debt as a part of family life for parents and children across the income distribution. Overall, I show that educational debt encroaches on family life across the income spectrum with limited promise towards improving children's lives in young adulthood. I argue that parent borrowing specifically, and high

college costs more generally, hamper a smooth transition to adulthood.

To be clear, this study does not question whether or not parents need to borrow to support their children's college ambitions and it does not argue that PLUS should no longer exist in the current system of high college prices, stagnant grant aid and family incomes. Many parents hope to provide educational opportunities for their children and to shield them from financial stress (Friedline et al. 2017; Hamilton 2016; Perna 2008). Debt provides a financial avenue for some parents to do that. Indeed, previous work shows that PLUS is critical for gaining access to postsecondary education, especially for disadvantaged or marginalized students (Johnson, Bruch, and Gill 2019; Kargar and Mann 2018; United Negro College Fund 2017). But getting into college is not enough to guarantee positive life outcomes for youth (Hout 2012; Ma et al. 2016; Vuolo, Mortimer, and Staff 2016) and it is important investigate whether PLUS loans also help young adults' complete college and find financial security.

This study uses parent borrowing through the PLUS program to show that debt has limited efficacy in helping youth transition to adulthood successfully. Instead, PLUS underscores how far beyond families' means college has become. Abandoning PLUS without addressing the underlying issue of college costs will not go far towards helping youth reach stable adulthood. This study documents how and for whom debt may help parents financially support their children as they navigate the transition to adulthood and identifies which parents are at risk by using debt to finance their hopes. This dissertation broadens our understanding of intergenerational support by taking debt into consideration. My dissertations also enriches current understandings of debt by incorporating life course theories and other theories of family support. Finally, it gives

policymakers insight into whether debt should be a go-to strategy for expanding access to opportunities like college given the implications for youths' opportunities and parents' economic security. By taking an intergenerational approach, these findings have implications for other types of debt beyond PLUS and raise concerns about how parents with increasingly limited resources can financially support their children.

CHAPTER 1

Parent Borrowing and Debt Burdens from Parent PLUS Loans

Abstract

To finance their children's postsecondary opportunities, parents increasingly borrow through the Parent Loans for Undergraduate Students (PLUS) program. Yet, there has been little investigation into parents' educational debt burdens, which may vary by income and contribute to inequality among parents. Using the 2015-16 National Student Postsecondary Student Aid Study (NPSAS), I find that low-income parent borrowers have higher debt-to-income ratios and are more likely to hold debt greater than \$10,000 in a single year. Middle-income parents are more likely to borrow through PLUS and high-income parent borrowers carry more PLUS loan debt and are more likely to borrow more than \$10,000. By extending investigations of educational debt to parents, this study shows that educational debt is not just a crisis for middle-income students and that college affordability is an issue even for high-income parents.

Introduction

By 2020, Americans held \$1.6 trillion in educational debt (Federal Reserve Bank of New York 2020). In part, educational debt is considered a crisis because of the burden it places on students' wealth accumulation as they enter adulthood (Addo, Houle, and Sassler 2019; Baum and Schwartz 2006; Board of Governors of the Federal Reserve System et al. 2016; Hess 2020; Houle 2014b; Houle and Addo 2018; Houle and Berger 2015). Even though parents also increasingly take on educational debt (Lee and Kim 2007; Mann 2011; National Center for Education Statistics 2016), parent borrowers are often overlooked in conversations about the debt crisis and its impact on wealth accumulation and inequality (Murakami 2021). By 2016, 20% of parents of undergraduates borrowed \$28,500 on average through the federally-funded Parent Loans for Undergraduate Students (PLUS) program (National Center for Education Statistics 2016), or nearly 40% of the median family income in 2016 (U.S. Bureau of the Census 2018). In response, the popular press has begun to refer to parents as "the latest victims of the student debt crisis" (Epperson and Dickler 2019). Yet, there has been limited empirical attention to parents' debt burden from PLUS and whether that burden varies across families. Without investigation, questions remain about PLUS loans' implications for wealth inequality and whether parents are also victims of rising educational debt in the United States.

In part, many scholars focus on debt burdens because it indicates borrowers' ability to repay their debt, which has consequences for wealth-building and inequality (Addo et al. 2019; Baum and Schwartz 2006; Board of Governors of the Federal Reserve System et al. 2016; Hess 2020; Houle 2014b; Houle and Addo 2018; Houle and Berger

2015). Investigations of student debt show that youth from middle- and low-income students are more likely to face heavy debt burdens, contributing to wealth inequality across race and social class (Addo, Houle, and Simon 2016; Baker 2019; Hillman 2014; Houle 2014b; Houle and Addo 2018; Looney and Yannelis 2015). A similar pattern may be observed among parents, with heavier PLUS loan burdens among those with fewer financial resources. On the other hand, recent scholarship and policy conversations assert that parent borrowers using PLUS are more likely to have high levels of income, and thus are not particularly burdened by their educational debt (Baum et al. 2019; Elliott and Friedline 2013; Looney 2021; Murakami 2021; Walsemann and Ailshire 2016). Yet, this recent research is limited in a number of ways. For example, it relies on data collected after parents have already begun PLUS loan repayment and often focuses on the amount parents borrow without attention to other measures of debt burden. This study addresses these limitations by using administrative data on debt disbursement and considers parents' debt-to-income ratio, a measure increasingly used to indicate financial wellbeing and debt burdens (Baker 2019; Baum and Schwartz 2006; Chen and Wiederspan 2014; Grinstein-Weiss et al. 2016; Houle 2014a; Kim and Wilmarth 2016; Luna-Torres et al. 2018; Price 2004; Velez, Cominole, and Bentz 2019). Understanding debt burden for parents across the income distribution provides insight into whether PLUS loans contribute to inequality among older Americans.

Debt burdens are also policy tools for measuring college affordability (Baker 2019; Hillman 2014; Perna and Li 2006; Texas Higher Education Coordinating Board 2015). Given rising college costs, contracting family wages, and the growing discrepancy between financial aid disbursements and tuition, fees, room and board over the last 30

years (Doyle 2010; Kelly and Goldrick-Rab 2014; Ma et al. 2018), college affordability has declined in the United States according to number of measures (Long and Riley 2007a; Ma et al. 2018; Perna and Li 2006). When designing policies to assess college affordability, state higher education agencies measure student debt burdens as either the amount of educational debt among their students or with student debt-to-income ratios (Baker 2019; Texas Higher Education Coordinating Board 2015). By focusing on parents' debt burden through PLUS, this study considers parents' experiences as an additional metric for measuring college affordability.

Using the 2015-16 National Student Postsecondary Student Aid Study, 2015-16 (NPSAS), this study investigates parents' debt burden from the federally-financed Parent Loans for Undergraduate Students (PLUS) program and documents who borrows, how much debt parent borrowers use, and their debt-to-income ratios. By extending research on educational debt burdens to parents, I show that low- and middle-income parents are burdened by educational debt, in terms of who borrows and parents' debt-to-income ratios. This adds to concerns about college affordability in the United States and gives empirical support to public assertions that parents are also victims of the educational debt crisis. In addition, my findings contradict arguments that parent borrowers should be excluded from recent policy conversations around debt cancellation on the grounds that parent borrowers are primarily high-income and that parent debt burdens are manageable (Baum et al. 2019; Murakami 2021; Walsemann and Ailshire 2016). By focusing on educational debt burdens, this study illustrates that parents, and not just young adults, are at risk when they borrow and that this may have implications for inequality among parents of college students.

Educational Debt Burden, College Affordability, and Wealth

As Americans' access to credit and debt increased between the 1980s and the present day (Dwyer 2018), scholars have become increasingly concerned by borrowers' debt burdens, or their ability to repay their debt and the implications this has for wealth inequality (Debelle 2004; Houle 2014a; Leicht and Fitzgerald 2006). In addition, as educational debt became an increasing part of how students and their parents fund college (Houle 2014a; National Center for Education Statistics 2016; Perna and Li 2006), higher education scholars and policymakers have expressed similar worries about youths' ability to repay and used educational debt burdens as an indicator of college affordability (Baker 2019; Perna and Li 2006). Recently, a few states have begun to hold their colleges accountable for students' debt burdens. In Wisconsin and Vermont, state policies measure student's debt burden by the amount of educational debt students borrow (Baker 2019). Indeed, previous work finds that higher debt burdens are associated with greater economic vulnerability (Kus 2015; Lewin-Epstein and Semyonov 2016). For example, mortgage debt is often considered "good" debt that promotes wealth accumulation (Dwyer 2018; Killewald and Bryan 2016), but higher mortgages are associated with higher levels of consumer debt, especially among middle-aged adults (Lewin-Epstein and Semyonov 2016). Similarly, higher student loan debts are associated with lower odds of homeownership or degree completion, both important wealth-building tools for many Americans (Bleemer et al. 2014; Dwyer, Hodson, and McCloud 2013; Dwyer et al. 2012; Houle and Berger 2015; Kantrowitz 2015; Mezza et al. 2016), and lower net worth among graduates (Elliott and Nam 2013; Velez et al. 2019). Indeed, even holding student debt is associated with greater risks of paying bills late by 60 days or more and with

difficulty accessing credit among families (Thompson and Bricker 2014). As a result, the amount of debt hampers wealth accumulation.

Yet, others argue that debt-to-income ratios are a better indicator of college affordability and more accurately predict repayment difficulties that may compromise wealth (Baker 2019; Baum and Schwartz 2006; Keister and Lee 2014; Texas Higher Education Coordinating Board 2015; Woo et al. 2017). In particular, higher amounts of debt may not be difficult for high-income or wealthy borrowers to repay. For example, in 2010, individuals and households in the top 1% of wealth held over \$200,000 in debt, considerably more than the average American, but had a total net worth of \$6.8 million (Keister and Lee 2014). In other words, whether or not families borrow, or even how much debt they hold, may not accurately reflect households' debt burden, or the consequences for wealth. Instead, debt-to-income or debt-to-asset ratios can also be interpreted as the amount of income (or wealth) needed to repay debt holdings (Chapman and Dearden 2017; Harris, Evans, and Beckett 2010; Keister and Lee 2014; Wolff 2010, 2013). Debt-to-income ratios can be calculated as the ratio of debt repayment to gross income (Baum and Schwartz 2006; Chapman and Dearden 2017; U.S. General Accounting Office 2003) or as the total amount of debt to annual earnings (Baker 2019; Chiteji 2007; Houle 2014a; Texas Higher Education Coordinating Board 2015). According to the Texas Higher Education Coordinating Board, severe debt burden occurs when the ratio of total amount of debt to annual earnings exceeds 0.6 (Baker 2019; Texas Higher Education Coordinating Board 2015), which is roughly equivalent to the recommended maximum of 0.08 often used for educational debt repayment-to-gross income (Baker 2019; Baum and Schwartz 2006; Chapman and Dearden 2017; U.S.

General Accounting Office 2003). Generally, higher debt-to-income ratios are associated with more repayment issues and a higher likelihood of default (Woo et al. 2017), which may reduce borrowers' wealth by prolonging repayment, increasing borrower's interest, and resulting in worse borrowing terms for any debt borrowed later. Yet, the research on educational debt burdens has largely focused on student loans and has paid less attention to parent PLUS loans and how PLUS may influence wealth accumulation among parents.

Parents' distinct financial circumstances and the unique types of debt available to them are consequential for parents' wealth. The life cycle hypothesis contends that parents accumulate wealth early in their child's life to then spend those savings once children reach young adulthood (Modigliani 1986). Given rising costs to raising children at any age, recent studies find limited support for the life cycle hypothesis and that most families' wealth declines throughout parenthood (Grinstein-Weiss, Wages, and Ssewamala 2006; Maroto 2018). This has concerning implications for parents' savings for their own needs, including retirement, healthcare, and mortgage payments (Jalbert, Stewart, and Johnson 2010; Mann 2011). Furthermore, these patterns underscore the possibility that parents may turn to debt rather than savings to help finance young adult children's expenses.

Parents' borrowing patterns and their loan terms through the federally-financed Parent Loans for Undergraduate Students (PLUS) may be particularly consequential for wealth accumulation. Although parents can borrow from a number of sources to help finance their children's postsecondary expenses, the PLUS program is the most commonly used (Sallie Mae 2019). PLUS loans are only available to parents who are creditworthy, which may influence which families borrow. Although the threshold for

creditworthiness is comparatively low (Di et al. 2019),¹ it still may constrain access to PLUS, especially among those who may be more likely to struggle with repayment. Second, parents can borrow considerable sums through the PLUS program, with the maximum allowable annual debt equivalent to the net college price (Di et al. 2019; U.S. Department of Education 2019b). On average, parent borrowers relied on \$28,600 over the course of their children's enrollment (National Center for Education Statistics 2016). In addition, PLUS loans carry higher interest rates than federal student loans (Federal Student Aid 2020). The high levels of debt and the higher interest rates relative to other federal loans may mean that PLUS loans are difficult for parents to repay. This can lead to families' wages, tax refunds, and even their social security being garnished (Federal Student Aid 2020), directly affecting their ability to save. Moreover, when individuals struggle to repay their loans, especially those with more punitive repayment terms, their credit scores are further jeopardized (Fourcade and Healy 2013), indicating that debt can produce a downward financial spiral. Add to this the distinct economic demands facing middle-aged Americans and it is critical to investigate parents' educational debt burdens through the PLUS loan programs.

Parents' Debt Burden across the Income Distribution

Because of the potential consequences for parents' savings and wealth accumulation, it is critical to investigate PLUS loan debt burdens across the income

¹ In the 2015-16 academic year, PLUS loan creditworthiness was considered adverse if a credit report showed any delinquent accounts that have an outstanding balance greater than \$2,085 for more than 90 days, accounts in collection or charged off at any point in the two years prior to the credit report, any default determination, repossession, foreclosure, bankruptcy discharge, wage garnishment, tax lien, or charge-off or write-off of student aid debt in the five years prior to the credit report, bankruptcy discharge in the five years prior to the credit report.

distribution. A few studies have begun to investigate these patterns, finding that high-income families are more likely to borrow and hold greater amounts of debt (Baum et al. 2019; Walsemann and Ailshire 2016). But these studies are limited in a number of ways. First, most focus on who uses PLUS and how much parents borrow, with less attention to debt-to-income ratios (Baum et al. 2019; Cha, Weagley, and Reynolds 2005; Murakami 2021; Walsemann and Ailshire 2016), which may lead to an incomplete picture of parents' debt burden from PLUS. In addition, some studies use data that collected information on parent borrowing years after PLUS loans were disbursed (Walsemann and Ailshire 2016), even though PLUS enters into repayment once disbursed (Federal Student Aid 2020). This may lead to biased findings in borrowing patterns. On one hand, those who borrow the most may be the most likely to have remaining PLUS loan debt. On the other, consistent with findings on student debt, those with lower amounts of PLUS loan debt may struggle more with repayment and be more likely to report debt years after PLUS was disbursed. Finally, some of these studies define income groups in misleading ways. One study argues that parents in the top 25th percentile of earnings in 2015 hold more dollars of PLUS loan debt than parents in the lowest 20th percentile (Baum et al. 2019; Proctor, Semega, and Kollar 2016b), but this ignores that parents from the higher income households are more likely to have children enrolled in college. In other work, policymakers define high-income parents as those who make more than three times the poverty level (Murakami 2021), but this cut-off is still below the median family income (\$55,590 versus \$72,165) (Proctor et al. 2016a). By using such generous cut-offs for high-income, these studies may be overinflating how many high-income parents use parent PLUS loans.

In addition, some of these studies only take into account parents' economic circumstances when investigating parent borrowing (Walsemann and Ailshire 2016). Yet, previous work on student borrowing has argued for the importance of using a multi-level conceptual model that takes into account different layers of context that impacts how students and their families finance college (Paulsen and St. John 2002; Perna 2008). In particular, these studies argue that the willingness to use loans depends on family and school contexts which shape perceptions of college's value and the financial resources needed or available for college (Perna 2008). For example, human capital theory demonstrates how individual-level characteristics, like students' academic achievement, age, and gender, factor into family-level decisions about whether or not, how much, and why parents and students borrow for college expenses (Becker 2009; Sewell, Haller, and Portes 1969; Steelman and Powell 1989, 1991). In addition, depending on a college's selectivity and sector, schools influence the information that families and students have about financial aid options, the availability of grants and scholarships, and the college expenses families face (Cottom 2017; Houle 2014a; Paulsen and St. John 2002), which may impact how much families borrow. As a result, it is important to consider these factors when investigating who borrows and how much. This study addresses these limitations by using administrative data on parent borrowing to capture the amount of loans parents borrow in a given academic year, investigating debt-to-income ratios, using different income thresholds, and taking into account school context to determine whether or not PLUS loans are a crisis for parents.

Parent Borrowing is Not a Crisis: PLUS Does Not Contribute to Inequality

Currently, some policymakers argue that parent borrowing through PLUS is not a crisis because high-income parents are more likely to use PLUS and these families command enough resources to manage their debt (Baum et al. 2019; Murakami 2021). Because of this, these policymakers argue that including parents in policy conversations about student debt cancelation would contribute to wealth inequality (Baum et al. 2019; Murakami 2021), implicitly suggesting that current parent borrowing patterns does not contribute to inequality. Indeed, there is reason to believe that high-income parents are more likely to borrow and rely on greater amounts of PLUS loan debt than less-advantaged households. Status attainment and human capital theories connect family cultural, social, and financial resources to parents' emotional and economic investment in their children's educational opportunities (Becker 1981, 2009; Sewell et al. 1969; Sewell and Shah 1968). Both theories support the idea that more advantaged parents are better situated to leverage resources and invest in their children. Empirical investigations illustrate the positive relationship between parents' resources and their contributions to college (López Turley and Desmond 2011; Nam 2020; Rauscher 2016; Steelman and Powell 1989, 1991). Family income is positively associated with parents' assessment of their ability to pay for college, their belief that they will not encounter financial barriers to college, and the amount they contribute to their children's college expenses (López Turley and Desmond 2011; Nam 2020; Rauscher 2016; Steelman and Powell 1989, 1991). In part, these families spend more on college not just because they have the money to do so, but also because they leverage resources in order to provide access to more expensive postsecondary opportunities (Bastedo and Jaquette 2011; Deil-Amen and

López Turley 2007; Gerber and Cheung 2008; Lucas 2001; Posselt et al. 2012; Roksa et al. 2007). Because these opportunities are more costly, it is possible that even more advantaged families will need the extra resources from PLUS to provide access to different types of colleges and on-campus experiences for their children. In addition to higher costs from more selective schools and additional expenses to enhance students' lives on campus, high-income parents also report wanting to shield their children from debt. Specifically, while parents at low-resource schools worry the cost of educational debt will exceed college's benefits, parents from high- and middle-income schools do not question the value of college but report that they plan to help their children avoid debt to lessen financial burdens post-college (Perna 2008). High-income parents report similar goals to shield their children from debt (Friedline et al. 2017; Hamilton 2016). In other words, higher income parents may leverage greater resources to help children access both additional educational opportunities and economically stable adulthood.

If human capital and status attainment theories are applicable to PLUS loans, then more advantaged families will be more likely to borrow and rely on greater amounts of debt due to the different types of institutions their children attend, the more expensive campus activities and lives their children experience at school, or as a classed strategy to shield their children from loans. Indeed, previous findings of debt holdings for families across the income distribution found that high-income families hold more debt than middle- and low-income families (Keister and Lee 2014). Similarly, studies that combine parents' cash and debt contributions to children's college expenses find that high-income parents contribute more overall (Elliott and Friedline 2013), which may mean that high-income parents are also using more debt. Yet, despite borrowing, high-income parents are

less burdened by their debt. In 2010, the top one percent of households had a debt-to-income ratio of 58.8% (Keister and Lee 2014), while the next nine percent of households had a debt-to-income ratio of 106.6% and the remaining ninety percent of households had 145.3% (Keister and Lee 2014). In other words, high-income parents may be more likely to borrow and borrow more, but have manageable debt-to-income ratios. If so, this may indicate that parent PLUS loan debt is not a crisis, though it raises concerns that college affordability is a challenge even for high-income students and parents.

Parent Borrowing is a Crisis: PLUS Loans Contribute to Inequality

In contrast, parent borrowing may be a crisis, especially if it is often used by low- or middle-income families and if these households face high debt-to-income ratios. Given stagnating incomes, fewer government benefits, and increasing reliance on debt in the United States, scholars propose the middle-income squeeze hypothesis, contending that middle-income families are most likely to use debt (Dwyer 2018; Elliott and Friedline 2013; Houle 2014b; Leicht and Fitzgerald 2006; McCloud and Dwyer 2011; Rowan-Kenyon, Bell, and Perna 2008; Sullivan et al. 2000). Patterns in student borrowing suggest that this may be the case for PLUS loans as well. With high levels of unmet financial need (Presley and Clery 2001), students from middle-income households are more likely to borrow and borrow more than students from either lower- or higher-income households (Elliott and Friedline 2013; Houle 2014b). Similarly, qualitative studies detail middle-income parents' decisions to borrow to help finance their children's college ambitions, though these studies do not provide evidence that low- or middle-income parents also borrow to reduce their children's own need for debt (Rowan-Kenyon et al. 2008; Tevington et al. 2017; Zaloom 2019). Given students' experiences, it is

possible that middle-income parents will be more likely to use PLUS and that they will borrow more.

In addition, scholarship on debt and wealth inequality argue that both middle- and low-income households are more likely to struggle with their debt burdens, which has consequences for wealth inequality. For example, families with fewer resources are more likely to rely on unsecured debt, which are associated with worse repayment terms (Dwyer 2018; Fourcade and Healy 2013). Beyond their riskier loan terms, how low-income families respond to their debt also contributes to inequality. Qualitative work on families with annual incomes below \$40,000 finds that lower-income individuals may put off debt payments in favor of financing regular, necessary expenses, like rent (Tach and Greene 2014). In addition, compared to lower-income households, families in the middle of the income distribution are more likely to declare bankruptcy and to be denied credit (McCloud and Dwyer 2011). Similarly, comparing debt-to-income ratios between 2007 and 2010, scholars find that middle-class households' debt burdens have outpaced more advantaged households (Wolff 2010, 2013). In addition, examining parents' savings across the wealth distribution, one study finds that high net worth parents continue to accumulate assets when their children reach college age (18 years or older), but middle- and low-wealth households' assets decline (Maroto 2018). This suggests that parents' investment in college contributes to wealth inequalities among parents. Thus, PLUS loans may contribute to disadvantage among low- and middle-income parents if they are more likely to use PLUS, borrow more, and have higher debt-to-income ratios. In addition, these findings would further support arguments that low- and middle-income families struggle to afford college.

Data and Methods

Data

This study relies on the 2015-16 National Student Postsecondary Student Aid Study (NPSAS), which collected administrative data, including the National Student Loan Data System (NSLDS), Free Application for Student Aid (FAFSA) files, and institutional records, as well as student surveys documenting how 89,220² students finance higher education. Organized by the National Center for Education Statistics, NPSAS is collected using a two-stage sampling design. The first stage involves the stratified selection of Title IV-eligible postsecondary institutions that offer an educational program for those who completed high school; offered an academic, occupational, or vocational program of study that lasted for at least 3 months; offered courses open to students who are not employees or members of the company; are located in the United States or Puerto Rico; and have signed the Title IV participation agreement with the U.S. Department of Education (Wine et al. 2018). Two thousand institutions were sampled from a strata of 11 types of colleges and about 1,750 institutions provided enrollment lists to begin the second stage of sampling. The second sampling stage surveyed about 122,000 graduate and undergraduate students enrolled in one of these eligible postsecondary institutions in an academic program, a credit-bearing course, non-credit remedial coursework eligible for Title IV aid, or in an occupational or vocational program that culminates in a credential, and is not enrolled in a high school or high school completion program between July 1, 2015 and June 30, 2016. The second stage

² Per NCES disclosure rules, sample sizes are rounded to the nearest tens.

employed a stratified systematic sampling design with 17 strata and collected information on 89,220 undergraduate students. A few types of students are oversampled, including potential Bachelor's recipients who are veterans, are enrolled in STEM or teacher education programs, and students enrolled in for-profit institutions. In contrast, undergraduate students in business programs were under sampled.

NPSAS is well-suited to address questions about parent borrowing because it collects information on whether or not, as well as how much, parents borrow through the federal PLUS program for their child's undergraduate education by using students' social security numbers to link to the National Student Loan Data System (NSLDS) to determine federal financial aid recipients. Unlike other studies, NPSAS can also take into account the diverse characteristics of higher education institutions, from tuition, room, and board and fees to institutional selectivity, and the multitude of parent characteristics, such as their educational background and marital status that may be consequential for their and financial burden. Because this study is interested in parent borrowing through the PLUS loan program, it restricts the sample to the undergraduate, dependent student population at four-year colleges (45% of full sample) who applied for federal financial aid (77% of full sample) in NPSAS during the 2015-16 academic year. These are both necessary steps to borrowing through the PLUS program. I perform multiple imputation using the chained command in Stata 13 with 5 imputations. I impute for missing values for parents' educational attainment (0.05% missing) and annual tuition, room and board, and fees (16.8% missing³). This leaves a final sample size of 22,190.

³ All of these missing values are from students who attended multiple institutions in a year. NPSAS did not populate tuition, fees, room and board variables for students under these conditions.

Variables

PLUS Loans. This study focuses on four dependent variables related to parent borrowing through the federal PLUS loan program, which is the most common way parents borrow for their children's college (Sallie Mae 2019). The first measure of interest is a dichotomous indicator of whether or not a student's parents borrowed in the 2015-16 academic year and is collected from college's administrative data. The second is the amount of PLUS loans parents borrow for their children's undergraduate educations in the 2015-16 academic year. In my multivariable analyses, I log this variable to address its skewed distribution and to interpret the effects as constant percentage changes. Both of these variables are likely conservative estimates of the total amount that parents may borrow to fund college expenses since parents may also take use debt from other sources as well, such as home mortgage loan, credit card debt, or private educational loans. I also investigate a third variable, the likelihood of holding parent PLUS loan debt greater than \$10,000. I use this threshold because current debates about legislation canceling federal educational debt often focus on \$10,000 (Murakami 2021; Nadworny 2021).

Parents' debt-to-income ratio. To understand whether or not parent borrowing through PLUS is associated with financial hardship, I construct a ratio of the amount of PLUS loans parents borrowed to their annual income. I restrict my analyses to families that have PLUS loans (16%) and positive, nonzero income (3%). By doing this, I am likely underestimating debt-to-income ratios because unemployed parents are not included in the sample. This will be the most consequential for the low-income families, because unemployed parents were included in this category. In addition, because my analyses focus on PLUS loans and not other types of debt that parents may use to fund

college expenses, my estimate for debt-to-income ratios are likely lower overall, but especially for middle- and low-income families who are more likely to use these forms of debt.

Key Parents' Characteristics. Parental income is my key independent variable and I use a measure that collects parents' income from FAFSA and divides households into five groups.⁴ The low income (\$60,000 or less) student grouping corresponds to those with the highest likelihood of using Pell grants (Protopsaltis and Parrott 2017). Lower-middle income (\$60,001 to \$88,999) students are those between roughly the 45th and 60th percentile; Middle income (\$89,000 to \$121,999) students fall between the 60th and 75th percentile; Upper-middle income (\$122,000 to 182,999), and high-income students (\$183,000 or more) are from families whose earnings are in the top 10 percent of my sample.⁵ Second, parents' education may indicate their familiarity with loans (Henretta et al. 2012; Steelman and Powell 1991) so I compare parents who completed college to those who did not. In addition, access to resources varies across race and ethnicity so I compare the borrowing and contribution patterns of white families to Black, Latinx, Asian, Native, and multiracial families. The measure comes from students' self-reports of their race and ethnicity.

⁴ I perform sensitivity analyses with equal quartiles and quintiles of parents' income with similar results. In addition, the income distribution in my sample is very similar to the household income distribution for 2015 (Proctor, Semega, and Kollar 2016b).

⁵ Although it would be preferable to have a measure of family wealth when discussing family inequality, NPSAS does not collect information on families' net worth. As a result, I rely on income to help understand patterns of economic inequality across parents with children. The literature on wealth asserts that wealth is conceptually distinct from income, yet the correlation between wealth and single-year income, as I use here, is 0.55 (Killewald, Pfeffer, and Schachner 2017). Indeed, in a review of the literature on wealth, Killewald and colleagues (2017) state that "wealth and income are strongly associated" (p. 392), and notes that the relationship becomes stronger at higher levels of income. Given that families who send their children to college are more advantaged than the general population (Houle 2014b), it is likely that the correlation between income and wealth is even higher in my sample.

Additional Parent Characteristics. Parents' likelihood of borrowing may depend on their understanding of the higher education system. Those who were educated outside of the United States may have less familiarity with the financial aid system and students who were born outside of the United States may not be eligible for financial aid per nationality requirements. As a result, I control for whether or not both parents were US-born in comparison to families where one parent is US-born and households where neither parent was US-born. In addition, parents' marital status is consequential for how much they spend on their children's educations (Fomby and Kravitz-Wirtz 2019; Henretta et al. 2012; López Turley and Desmond 2011) so I compare parents who are married or remarried to those who divorced, separated, or widowed and to those who are single parents or never married.

Student Characteristics. These include students' academic achievement, as measured by their high school grade point average, their age, and their gender. In addition, families with multiple children in college often receive more financial support and are less likely to use debt so I account for whether or not a student has siblings who attend college in the 2015-16 school year, which is collected in student surveys.

College characteristics. I account for a few different college characteristics. The first is a four-part variable for college sector, comparing those enrolled at public institutions to those attending not-for-profit private colleges, for-profit institutions, and students who attended multiple types of institutions in the 2015-16 academic year. Second, I control for institutional selectivity with a NPSAS-created measure that divides institutions into four categories: open admission without minimum academic requirements, minimally selective, moderately selective, and very selective. The four-

year institutions with academic requirements were divided into quartiles based on the admission rate and the distribution of ACT and SAT scores. The moderately selective category contains the two middle quintiles. Third, families may attend colleges with different financial costs so I adjust for these potential differences by controlling for the total amount of tuition, fees, room and board the institution charged. Similarly, I take into account the amount of federal, state, and institutional grant aid in two separate variables as well as student loans, and other sources of financial aid disbursed to students in the 2015-16 academic year. Institutional grant aid includes both need and non-need based aid. Student debt is drawn from administrative data files and includes the amount of debt students borrow from federal and private sources. Other sources of financial aid include work-study, private grants, and federal veterans' benefits and military aid. These financial measures come from the college administrative files⁶. Finally, in part due to discriminatory state funding policies, historically black colleges and universities (HBCUs) are underfunded relative to historically white institutions (Dougal et al. 2019; Sav 2010) so families at HBCUs are more likely to rely on debt (Johnson et al. 2019; Zaloom 2019), therefore I include an indicator of for HBCU enrollment during the 2015-16 school year.

Analytic Strategy

To understand the relationship between family income and PLUS loans, I use a logistic regression and then a truncated linear regression among those who borrowed. Unlike ordinary least squares, a truncated regression restricts the analyses to those who

⁶ In addition, rather than separate measures for grants and costs, I performed robustness checks using a single measure for net price, which reflects the cost of tuition, fees, room and board minus grants. Results remained consistent with the specification.

borrowed. This helps distinguish how much parents borrow from who borrows, which is especially useful in instances where borrowing rates are low, as with the PLUS program. In addition, by differentiating between who borrows and how much debt borrowers use, this conceptualizes loans as a two-step process, which is likely more reflective of parents' decision process about loans: they first decide whether or not to use PLUS and then determine how much they will borrow.⁷

To illustrate the financial burden that PLUS loans put on families across the income distribution, I examine their debt-to-income ratios implementing two different analytic strategies. The first is an ordinary least-squares regression of debt-to-income ratio across family income after taking into account student, parent, and college characteristics. This provides information on the differences in the conditional means of debt-to-income across families with different income levels. However, given the considerable skew of the debt-to-income ratio and the possibility that predictors of debt vary across the income distribution (Baker 2019; Killewald 2013), focusing on the mean may provide biased estimates of the variation that exists across the income distribution. To address this, I rely on conditional quantile regression technique and present the income-based differences at the median (Houle 2014b). Altogether, these analyses allow me to determine who borrows and how heavy their debt burden is, providing insight into how PLUS loans may influence wealth inequality among parents.

⁷ Recent work on educational debt has relied on two-tier Craggit models which first fits a probit model to predict the likelihood of parent borrowing and then uses a truncated regression to model the amount of debt borrowed while taking into consideration the probabilities determined in the probit model. Craggit models are particularly useful for variables like loans where the most common value is zero (Burke 2009; Houle 2014b; Walsemann and Ailshire 2016). I perform a Craggit model (see Appendix 1C) and find that the results are comparable to those in the logit and truncated regressions. Because the coefficients are more interpretable in the logit and truncated regression models, I show these findings.

Findings

Descriptive Findings

In my sample, 16% of the parents borrow PLUS loans for their dependent children's college educations and the average annual debt among borrowers is approximately \$14,600.⁸ The distribution of PLUS debt is considerably skewed with a maximum amount of family debt of almost \$67,000. Similarly, the debt-to-income ratio is also skewed with a mean of 0.59 among borrowers and a median of 0.15. These numbers are concerning because they indicate that parents who borrow may be financially burdened by their PLUS loans since it would take the average borrower 7 months (0.59 of a year) of their income to repay their debt.

Yet, parent borrowing and debt burden differs by parents' income (Table 1.1). The parents of low-income students are less likely to borrow (14%) and carry less debt (\$11,000), but they have a much higher debt-to-income ratio. Among borrowers, the parents of low-income students carry debt levels that are almost 1.21 times their incomes on average. The parents of low-middle and middle income students are more likely to borrow (19% and 20%, respectively), borrow slightly more through PLUS (about \$14,000 and \$15,000, respectively), and they face debt-to-income ratios between 0.15 and 0.2. Although upper-middle income parents are similarly likely to use PLUS as lower-middle and middle income parents (19%), they borrow more and their debt-to-income ratios are lower. Finally, high-income parents are slightly less likely to use PLUS loans (17%), though those that do borrow more (\$22,000). Despite their higher debt

⁸ Borrowing is relatively rare in my sample, likely because it includes students at all stages of their educations, and some parents have not yet begun to borrow. Thus, my findings are conservative estimates.

loads, high-income parents are the least burdened by their debt according to their debt-to-income ratios. Together, these findings about parent borrowing across the income distribution indicates a complex relationship between family income and PLUS loans. Policymakers and scholars who argue that parent PLUS loans are primarily used by affluent families are ignoring critical patterns. Namely, the parents of lower-middle, middle, and upper-middle income students are more likely to borrow through PLUS, and PLUS puts low, lower-middle, middle, and upper-middle income families at greater risk for experiencing financial hardship.

Multivariable Regression Analysis of Parent Borrowing Patterns

There are additional differences in families across the income distribution that may influence their use of PLUS loans and families' risk of experiencing financial hardship. For example, family structure, parents' education, student, demographic, and college characteristics all vary across family income. To take into account all of these characteristics, Table 1.2 presents findings from the logistic and truncated least square regression models to investigate patterns in the odds of using parent PLUS loans and the amount parents borrowed through PLUS. I find that the parents of low- and high-income students have lower odds of using parent PLUS loans as low-middle, middle, and upper-middle income parents⁹. This contradicts previous analyses and underscores that the importance of using timely data to capture parent borrowing before repayment begins. In addition, consistent with previous work on racial and ethnic patterns in both student and parent borrowing (Addo et al. 2016; Houle 2014b; Houle and Addo 2018; Jackson and

⁹ A global test of the equality of coefficients confirms these patterns.

Reynolds 2013; Zaloom 2019), Black parents have 76% higher odds of borrowing through PLUS when compared to white parents. In addition, students whose parents have some college or an Associate's degree have higher odds of borrowing than parents with a Bachelor's degree. These findings highlight that assertions that parent borrowing is a resource primarily for affluent, white parents are overstated.

In supplemental analyses (Appendix Figure 1A), I find that this relationship between income and the likelihood of using PLUS varies across race and ethnicity. In particular, the middle-income squeeze pattern is unique to white families. In contrast, Black, Native, and Multiracial parents are similarly likely to borrow regardless of their income level. Among Latinx parents, low-income parents are less likely to borrow than middle-income Latinx parents, but middle- and high-income Latinx parents are similarly likely to use PLUS. Among Asians, high-income parents are less likely to use PLUS than middle-income parents, but low- and middle-income parents are similarly likely to borrow.

Focusing on borrowers only, the second column of Table 1.2 documents patterns in the amount of PLUS loans parents used and finds different patterns than those observed for the likelihood of borrowing. Namely, the parents of high-income students use more parent PLUS loans than middle-income parents (14% more), and low and lower-middle income parents borrow less than middle-income parents (27% and 12% less, respectively), net of student and college characteristics¹⁰. In addition, after taking into account student and college characteristics, parent borrowers of educational

¹⁰ Again, a global test of the equality of coefficients shows that the amount borrowed varies across the income distribution.

backgrounds rely on similar amounts of parent PLUS loans. In addition, Asian parent borrowers rely on 19% more PLUS loan debt than white parents. In supplemental analyses (Appendix Figure 1B), I find that these income patterns across income do not vary depending on race and ethnicity.

Finally, the third column considers whether some parents are more likely to take on high amounts of debt through the parent PLUS program. As a reminder, I use \$10,000 as the benchmark for high amounts of debt, since this is the amount currently being discussed in policy proposals (Murakami 2021; Nadworny 2021). Relative to middle-income parents, low, low-middle, and high-income parents all have lower odds of carrying parent PLUS loan debts greater than \$10,000¹¹. In addition, Black parents have 69% higher odds of holding debt loads greater than \$10,000 as compared to white parents. Policy proposals that seek to cancel \$10,000 in federal educational debt primarily benefit low, lower-middle, and high-income parent borrowers, but continue to leave middle, upper-middle income and Black parents with debt to repay. This is concerning because these groups are more likely to borrow.

Supplemental analyses shows that this pattern is again predominantly observed among White parents (Appendix Figure 1C). Among Black and Latinx parents, low income parents are less likely to hold more than \$10,000 in PLUS loan debt than middle-income parents, but low-middle, middle-, upper-middle, and high-income same-race parents all have similar odds of holding PLUS loan debt greater than \$10,000. Asian, Native, and Multiracial parents across the income distribution would be equally likely to see their PLUS loan debt cancelled. As a result, it is important to recognize the ways that

¹¹ Global tests of the equality of coefficients confirm these findings.

race and family income generate different patterns for PLUS loan debt.

Across the three models, a number of additional characteristics are associated with parent borrowing. First, students with two parents who were born outside of the United States have lower odds of having parents who borrow, they have parents who borrow less debt, and their parents have lower odds of borrowing more than \$10,000. In addition, students with higher high school grades have lower odds of having parents who borrow in any amount or who borrow more than \$10,000. As students get older, their parents are also borrowing less and have lower odds of using PLUS and having debt burdens above \$10,000. Students at moderately-selective institutions have higher odds to have parents who borrow and parents who borrow more than \$10,000 as compared to students who attend open admission or very selective institutions. Similarly, parents of students attending for-profit colleges are more reliant on PLUS in terms of both their odds of borrowing at all through PLUS and of borrowing more than \$10,000 in PLUS loan debt. A similar pattern is observed for the parents of students who attended multiple institutions in the 2015-6 academic year. Consistent with previous findings (Zaloom 2019), the parents of HBCU students have higher odds of using PLUS loans. Finally, different financial considerations are associated with parent borrowing. Parents of students who attend more expensive schools are more reliant on PLUS loans, but as institutional grant aid, grant aid from state and federal sources, student loan debt, other sources of aid, and parents' own contributions from income and savings increase, parents have lower odds of using PLUS and borrow less of it when they do.

To make this more concrete, Figure 1.1A and 1.1B shows predicted values net of family, student, and college characteristics. Figure 1.1A documents that parents in the

middle of the income distribution are more likely to borrow than either low- or high-income parents. For example, while low- and high-income parents are 15% and 14% likely, respectively, to use PLUS, low-middle, middle, and upper-middle income parents are between 17 and 19% likely to use parent PLUS loans. Although parent borrowing is still relatively uncommon among the parents of undergraduates, it is not solely a phenomenon among high-income parents.

Figure 1.1B shows that high-income parent borrowers use about \$14,430 in PLUS loan debt. This is about \$1,000 more than upper-middle income parents, \$2,000 more than middle, \$3,000 than lower-middle income parents, and about \$5,000 more than low-income students. Although high-income parent borrowers use higher amounts of PLUS loan debt, parents in the middle of the income distribution also borrow more than \$10,000 on average. Rather than showing that parent borrowing is primarily used by high-income families as policymakers often assert, these patterns suggest that it is instead often experienced among middle-income parents.

Multivariable Regression Analysis of Parents' Debt-to-Income Ratios

To understand how burdened parents are by their debt from the PLUS program, Table 1.3 presents parents' debt-to-income ratio in three different ways among those who borrow, net of all controls. Low-income parents have 42% higher average debt-to-income ratio relative to middle-income parents conditional on borrowing and net of controls. In contrast, high-income parents have 6% lower average debt-to-income ratios than middle-income parents¹². This indicates that even though low-income parents are the least likely

¹² These differences are confirmed with a global test of the equality of coefficients.

to borrow and borrow the least, their debt is a greater burden. Column 2 shows median debt-to-income and illustrates greater burden among low- and low-middle income families and high-income parents continue to have less. Consistent with existing literature (Baker 2019; Houle 2014b), there are a few other characteristics associated with parents' financial hardship. There is limited evidence that debt burdens vary considerably across parents' education level, Black parents have higher median debt-to-income ratios. Supplemental analyses show that low-income families across race and ethnicity all face much higher debt-to-income ratios than their same-race peers with higher incomes (see Appendix Figure 1D).

Figure 1.2 displays predicted debt-to-income across the income distribution net of student and family characteristics. First, the predicted average debt-to-income ratio for low-income parents is above the threshold for burdensome debt-to-income ratios (0.60). In contrast, low-middle income parents have an average debt-to-income ratio of 0.2. Middle, upper-middle income, and high-income parents have lower average debt-to-income ratios (0.18, 0.17, and 0.15 respectively). The predicted median debt-to-income ratio depicts a similar story, though predicted debt-to-income ratios are lower because the median is less influenced by the influence of outliers. Specifically, low-income parents have median debt-to-income ratios about half of the 0.6 threshold used in Texas. Low-middle, middle, upper-middle, and high-income parents have lower median debt-to-income ratio (0.16, 0.14, 0.12, and 0.09, respectively).

Discussion

Scholars and policymakers often describe parent borrowing through the Parent Loans for Undergraduate Students (PLUS) program as a phenomenon unique to high-

income parents (Baum et al. 2019; Murakami 2021; Walsemann and Ailshire 2016). This is sometimes used as a reason to exclude parent borrowing from current policy discussions about federal educational debt (Murakami 2021). Similarly, academics interested in college affordability or economic inequality have been less inclined to investigate the economic consequences of parent borrowing through PLUS (see Di et al. 2019; Elliott and Friedline 2013; Walseman and Ailshire 2016; Zaloom 2019 for notable exceptions). Yet, the public increasingly refers to parent borrowers as “victims” of the educational debt crisis (Epperson and Dickler 2019). This study challenges assumptions about who borrows through the PLUS program and finds empirical evidence to support the concern that educational debt is a crisis for parents as well as students. I consider parent borrowing’s implications for inequality by documenting the patterns in parents’ PLUS loan debt burdens. Consistent with descriptions of the middle-income squeeze (Dwyer 2018; Houle 2014b; Wolff 2010, 2013), I find that parent borrowing is more common for middle-income parents and that debt is especially burdensome for low-income parents.

A narrow focus on the amount parents borrow may lead to the conclusion that PLUS is largely used by high-income parents. Indeed, high-income parent borrowers, defined in this study as those who make \$183,000 or more and is equivalent to the top 10% of earners, use more PLUS debt. This showcases how unaffordable college tuition, fees, room and board have become because even some high-income parents lack the savings to cover the net college price. But this is only part of the story. Parents from the middle of the income distribution (or between the 40th and 90th percentile of earners) are more likely to use PLUS. In addition, an average middle-income parent has higher

average PLUS loan debt than an average high-income parent (analyses available upon request). This provides additional support for the middle-income squeeze hypothesis that has documented the different expenses middle-income families increasingly pay for with debt because of declining wages and increasing costs for medical care, goods, and education (Dwyer 2018; Houle 2014b; Perna and Li 2006; Wolff 2010). To date, educational debt was largely considered an issue for middle-income youth, but this study shows that middle-income parents also rely on debt to pay for college expenses.

Notably, the middle-income squeeze has been documented among student loan borrowers (Houle 2014b). Although increasing student loan amounts are associated with less parent PLUS debt in this study, students who borrow are more likely to have parents who use PLUS and their parents borrow more PLUS debt (analyses available upon request) (Fishman 2018). This may reflect parents' greater willingness to use loans if their child also borrows, that financial aid policies encourage parents to delay borrowing until their child has maximized their federal debt (U.S. Department of Education 2019b), or the depth of families' unmet financial need (Fishman 2018). Regardless, this pattern is concerning because it indicates that multiple generations in a family, especially middle-income families, hold educational debt to pay for a single child's college education, which has implications for intergenerational support and economic inequality.

Beyond family income, this study also documents racialized borrowing patterns previously observed across other types of debt (Baradaran 2019; Dwyer 2018; Houle and Addo 2018; Oliver and Shapiro 2006; Zaloom 2019). Specifically, Black parents are more likely to borrow than whites. There are a number of explanations for this. First, Black students report relying on counselors and parents' social networks to learn about

managing college costs (McCabe and Jackson 2016). It is possible that these networks are more likely to suggest PLUS than white students' contacts. In addition, given the historical racial inequities in wealth and access to credit (Baradaran 2019; Killewald, Pfeffer, and Schachner 2017; Oliver and Shapiro 2006; Percheski and Gibson-Davis 2020; Spilerman 2000), Black parents' higher likelihood of using PLUS loans may reflect differences in the types of credit and debt families can access across race and ethnicity. For example, given the discriminatory mortgage policies they are subject to, Black parents may be less likely to rely on home wealth to finance college and thus may use PLUS instead. Similarly, Black students are more likely to attend colleges where borrowing is common. For example, reflecting years of underinvestment, historically black colleges and universities (HBCUs) receive less financial support from federal and state governments (Sav 2010). This translates into less institutional aid for students and greater need for students and their parents to borrow (Johnson et al. 2019; Sav 2010). Similarly, Black students are more likely to enroll at for-profit institutions, where students are more likely to borrow than at either public or private institutions (Cottom 2017). In addition, I find that Asian parent borrowers rely on higher amounts of PLUS loan debt than white parents, net of college characteristics like cost and selectivity. To date, there has been less attention to Asian borrowing patterns, but these findings suggest the importance of investigating more deeply. Finally, supplemental analyses for all of my measures of debt burden find that some patterns across income also vary by race and ethnicity. Measures for odds of borrowing at all or amounts greater than \$10,000 primarily capture the experiences of White parents, while total debt among borrowers and debt-to-income ratios are more reflective of the debt burdens experienced by parents

across race and ethnicity. These findings serve as a reminder that there are both racialized and classed patterns in debt. To identify appropriate policy solutions to address these racialized patterns in borrowing, future work should examine these different patterns and explanations more closely.

To provide a more complete accounting of how significant of an issue PLUS loans are for parents, this study investigates parents' debt burden. Scholars of debt have increasingly called for research to take into account the nuances of how debt influences borrowers' economic situations (Baker 2019; Quadlin and Conwell 2020; Zaloom 2019). This study investigates parents' debt burden from PLUS with three different measures to show that low- and middle-income parents are more burdened by PLUS loan debt. This further confirms that parent PLUS loans are a concern not just for high-income parents but also have economic consequences for middle- and low-income parents. Given that high debt-to-income ratios are associated with slower repayment and greater risks of defaulting (Baum and Schwartz 2006; McCloud and Dwyer 2011), heavier PLUS loan burdens among low-income parents may contribute to inequality. Previous work on intergenerational financial support noted that low- and middle-wealth families lose wealth when their children reach young adulthood, while high-wealth families do not (Maroto 2018). By extending the middle-income hypothesis to parent borrowers, I identify PLUS loans specifically and college costs more generally as mechanisms leading to widening inequality among parents of young adult children.

My findings also have implications for higher education policies. First, when policymakers dismiss parent PLUS loans as being primarily used by high-income families, they obscure the higher rates of borrowing among middle-income parents and

the heavier debt burdens borne by low-income parents. This misrepresentation is concerning because it ignores parents' financial sacrifices and stalls conversations that might alleviate parents' burdens (Baum et al. 2019; Murakami 2021). For example, my findings show that current policy proposals to cancel \$10,000 in student debt would leave middle- and upper-middle income parents with debt to repay. Policy proposals that cancel greater amounts of federal debt would be more likely to address all of middle-income parents' PLUS loan debt. In addition, by framing parent PLUS loans as a resource for high-income families, policymakers implicitly treat less advantaged borrowers as if they are irresponsible for using PLUS loans (Baum et al. 2019; Cellini, Darolia, and Ritter 2020). These policymakers sometimes point to high default rates among low- and middle-income parent borrowers and advocate for restricting access to PLUS by increasing credit requirements (Baum et al. 2019; Cellini et al. 2020). Although this policy solution may address the heavy debt burden that low- and middle-income parents are at greater risk of experiencing, this solution is short-sighted because it restricts access to funds that help parents provide college opportunities for their children (Johnson et al. 2019; United Negro College Fund 2017). Instead, addressing the conditions that necessitate parent borrowing—like unaffordable college costs and declining wages—would be more likely to address parents' debt burden without restricting educational opportunities.

Although this work presents a first step in understanding the implications parent borrowing has for inequality, it is not without limitations. First, this study asserts that patterns in parent borrowing and parents' debt burden from PLUS loans may contribute to wealth inequality for parents across the income distribution. Yet, I am unable to

directly tie PLUS loans to wealth gaps across families because my data lacks a measure for parent wealth. Although wealth is conceptually distinct from income, the correlation between wealth and single-year income, as I use here, is 0.55 (Killewald et al. 2017). Indeed, in a review of the literature on wealth, Killewald and colleagues (2017) state that “wealth and income are strongly associated” (p. 392), and notes that the relationship becomes stronger at higher levels of income. Given that families who send their children to college are more advantaged than the general population (Houle 2014b), it is likely that the correlation between income and wealth is even higher in my sample. Regardless, future work should more directly interrogate the link between parent PLUS loans and wealth inequality. For example, investigating repayment rates, deferrals, or defaults would be a more direct way to link PLUS loans to wealth.

In addition, debt-to-income ratios are imperfect measures of debt burden in part because of difficulties in capturing unemployed borrowers’ burden. In this study, I restrict the debt-to-income analyses to employed parents. Although most parents in the sample were employed (97%), my findings do not generalize to all parent borrowers of dependent undergraduates. This is especially important to consider during the current economic recession that has led to staggering unemployment (Cohen and Hsu 2020). To address this, some studies use debt-to-asset ratios instead (Houle 2014a), but even fewer Americans’ have positive assets so it leads to similar issues. Others impute a small income for unemployed borrowers (Chiteji 2007; Houle 2014a). I ran sensitivity analyses using this method and my results stayed consistent, but this method risks overinflating debt-to-income. Others have used a measure that calculates whether borrowers paid any of their principal loan balance over a period of time (Kelchen and Li 2017). This

approach seems promising, but data limitations may prove to be an issue for uptake on this measure. Future work should continue to consider other ways of measuring borrowers' debt burdens.

In addition, this study presumes that families across the income distribution borrow through PLUS for similar reasons, but this may not be the case. For example, there is evidence that low-income parents use PLUS to help their child access college (Kargar and Mann 2018). In contrast, high-income parents report using PLUS to try to shield their children from burdensome student debt (Perna 2008). Future work should consider different reasons that parents borrow through PLUS to understand income-differences in parent borrowing patterns. Similarly, the data does not include information on what financial aid options were available to families so it is unclear whether differences in borrowing across the income distribution reflect a refusal of PLUS loans, a lack of need, or a lack of information about PLUS loans. PLUS exists in a broader context of grant aid, student loans, and other forms of financial assistance that parents and families may choose between. Knowing the full options available to students and their families will aid in disentangling why parents decide to borrow on behalf of their children.

Recent work on the costs of higher education and the growing reliance on educational debt has largely focused on students and the implications for inequality in young adulthood. Despite growing reliance on debt among Americans of all ages (Dwyer 2018; Houle 2014a; National Center for Education Statistics 2016), there has been less attention to parent borrowing (for exceptions see Di et al. 2019; Elliott and Friedline 2013; Walseman and Ailshire 2016; Zaloom 2019). Policymakers and scholars have largely asserted that parent borrowers are high-income (Baum et al. 2019; Murakami

2021; Walsemann and Ailshire 2016), but this study shows that this is not necessarily the case. Instead, patterns in parent borrowing through the PLUS loan program largely mirrors the middle-income squeeze hypothesis and raises concerns that financing college, especially through educational debt, may contribute to wealth inequality among middle-aged parents. This underscores the importance of considering parents' educational debt in conversations about college affordability and wealth inequality. Finally, this study provides empirical support that many parents are victims of educational debt because higher education leaves low- and middle-income parents disproportionately vulnerable to financial risks as they try to provide postsecondary opportunities to their children. Policymakers and higher education advocates should consider that educational debt generates risks for both multiple generations of student borrowers and seek policy solutions that reduce the need for educational debt by providing more financial aid, advocating for a living wage for families, and increasing government support to higher education to reduce net college prices.

Table 1.1. Parent borrowing and debt-to-income ratio by parents' income

		Use PLUS	PLUS (\$)	Debt-to-income ratio
Low income	mean	0.136	11,202	0.536
	se	0.006	486	0.031
	N	9,750	1,300	1,220
Lower-middle	mean	0.189	13,620	0.185
	se	0.010	519	0.007
	N	3,610	690	690
Middle income	mean	0.198	15,430	0.148
	se	0.011	556	0.005
	N	3,310	660	660
Upper-middle	mean	0.190	18,036	0.124
	se	0.010	664	0.005
	N	3,310	610	610
High income	mean	0.17	22,310	0.088
	se	0.012	823	0.003
	N	2,210	370	370

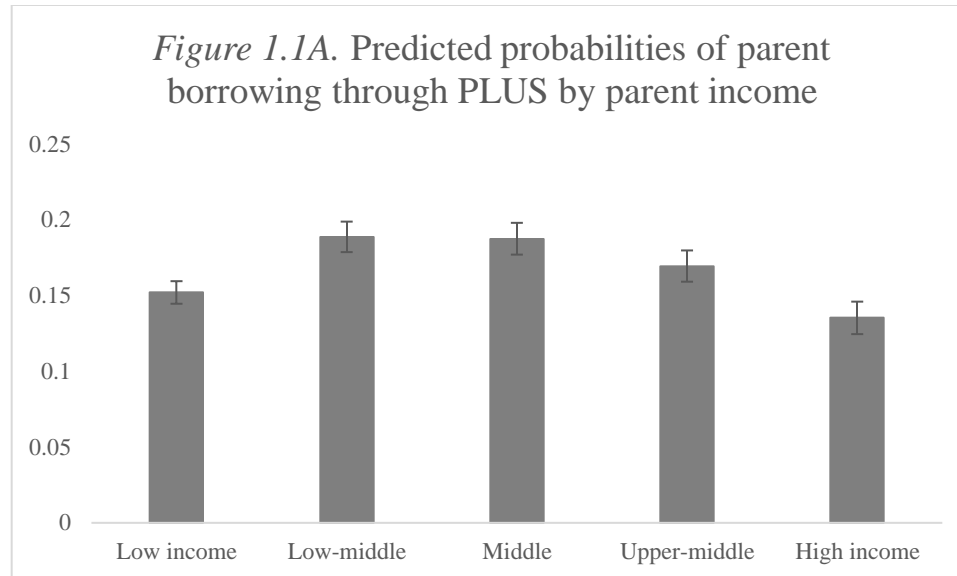
Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Analysis of amount of PLUS loan debt further limited to those who borrow through PLUS; Analysis of debt-to-income ratios further limited to those with parents who have non-zero income; Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05; Ns rounded to nearest tens per NCES disclosure rules

Table 1.2. Odds Ratios of Any Debt (Logit), Debt among Borrowers (Truncated Regression; $\ln(y|y>0)$), and Odds Ratios of Borrowing More than \$10,000 (Logit)

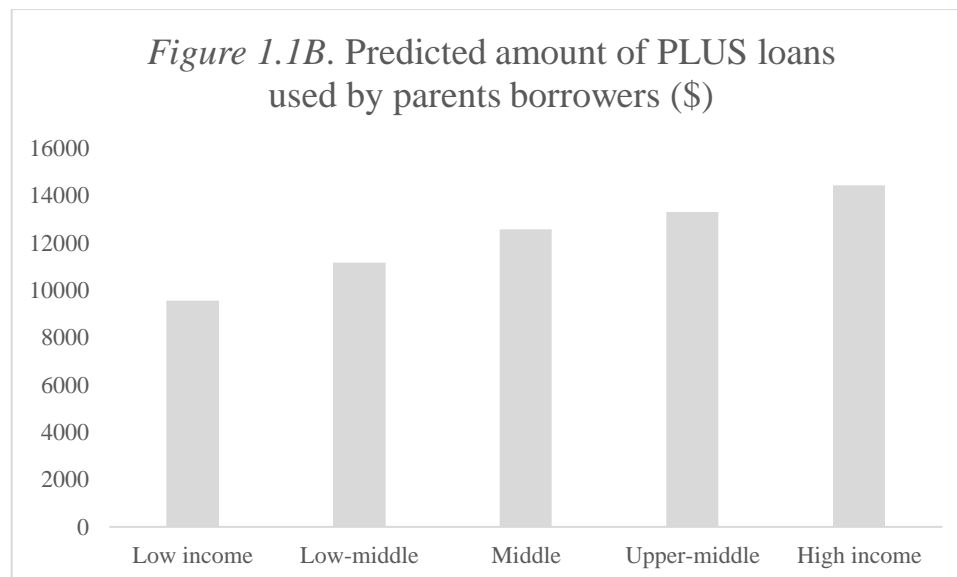
VARIABLES	1	2	3
	Odds of using PLUS	Debt, Logged, among borrowers	Odds of using \$10,000 or more of PLUS
Parent Income (Middle income omitted)		-	
Low income, \$50,000 or less	0.765** (0.077)	0.274*** (0.054)	0.567*** (0.080)
Low-middle income, \$50,001 - 71,999	1.009 (0.099)	-0.118* (0.049)	0.933 (0.114)
Upper-middle income, \$95,000 - 161,999	0.877 (0.082)	0.057 (0.044)	0.914 (0.101)
High income, \$162,000+	0.662*** (0.075)	0.139** (0.051)	0.716* (0.095)
Parents' education (Bachelor's degree omitted)			
High school diploma or less	1.063 (0.108)	-0.076 (0.056)	0.884 (0.124)
Some college or AA	1.209* (0.094)	0.026 (0.039)	1.094 (0.104)
Master's degree	0.934 (0.071)	0.019 (0.040)	0.872 (0.080)
Parents' marital status (Re/married omitted)			
Divorced or widowed	0.922 (0.068)	0.011 (0.039)	0.943 (0.092)
Single parent	1.099 (0.131)	-0.059 (0.075)	0.997 (0.164)
Race/ethnicity (Whites omitted)			
Black	1.761*** (0.174)	0.097 (0.051)	1.686*** (0.206)
Latinx	0.918 (0.094)	0.039 (0.055)	1.011 (0.127)
Asian	0.799 (0.113)	0.193* (0.098)	0.885 (0.162)
Native American	0.718 (0.267)	0.185 (0.221)	0.781 (0.335)
Multiracial	0.973 (0.146)	-0.107 (0.097)	0.770 (0.173)
Nativity (Both parents born in the United States)			
Both parents born outside of the US	0.801* (0.074)	-0.131* (0.053)	0.713** (0.091)
One parent born outside of the US	1.012	0.021	1.112

	(0.115)	(0.069)	(0.162)
Has a sibling in college	1.016	-0.012	1.083
	(0.065)	(0.035)	(0.087)
Female	1.022	0.006	1.063
	(0.060)	(0.030)	(0.076)
Grade point average in high school	0.918*	-0.019	0.908*
	(0.032)	(0.017)	(0.039)
Students' age as of 12/31/2015	0.937***	-0.021*	0.927**
	(0.018)	(0.009)	(0.021)
College selectivity (Moderately selective omitted)			
Open admission	0.682*	-0.108	0.668*
	(0.122)	(0.114)	(0.125)
Minimally selective	1.071	-0.015	1.001
	(0.154)	(0.060)	(0.168)
Very selective	0.802*	0.020	0.772*
	(0.079)	(0.048)	(0.095)
College sector (Public college omitted)			
Private	0.955	0.078	0.941
	(0.097)	(0.054)	(0.127)
For-profit	2.064***	0.125	2.105***
	(0.382)	(0.131)	(0.416)
Multiple college types	1.477***	0.301***	1.305*
	(0.115)	(0.063)	(0.147)
Historical black college indicator	1.398*	0.063	1.471
	(0.232)	(0.094)	(0.407)
College tuition, fees, room and board (\$1000)	1.041***	0.029***	1.060***
	(0.003)	(0.002)	(0.004)
		-	
State or federal grant aid (\$1000)	0.950***	0.029***	0.923***
	(0.007)	(0.005)	(0.009)
		-	
Institutional grant aid (\$1000)	0.974***	0.024***	0.962***
	(0.004)	(0.003)	(0.004)
Student loans (\$1000)	0.998	-0.016**	0.984***
	(0.004)	(0.006)	(0.004)
Other types of aid (\$1000)	0.953***	-0.006	0.953**
	(0.012)	(0.009)	(0.014)
Parents' contribution (\$)	0.993**	0.005***	0.994
	(0.003)	(0.001)	(0.003)
Constant	0.619	9.217***	0.351
	(0.274)	(0.240)	(0.198)
Observations	22,190	3,630	22,190

Notes: Analysis limited to dependent students enrolled in a four-year institution during the 2015-6 school year; Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Ns rounded to nearest tens per NCES disclosure rules



Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Predicted probabilities control for parents' education, marital status; students' race/ethnicity, nativity, gender, high school grade point average; College selectivity, sector, HBCU, college tuition, fees, room, and board, state and federal grant aid, institutional grant aid, student loans, and parents' contribution.



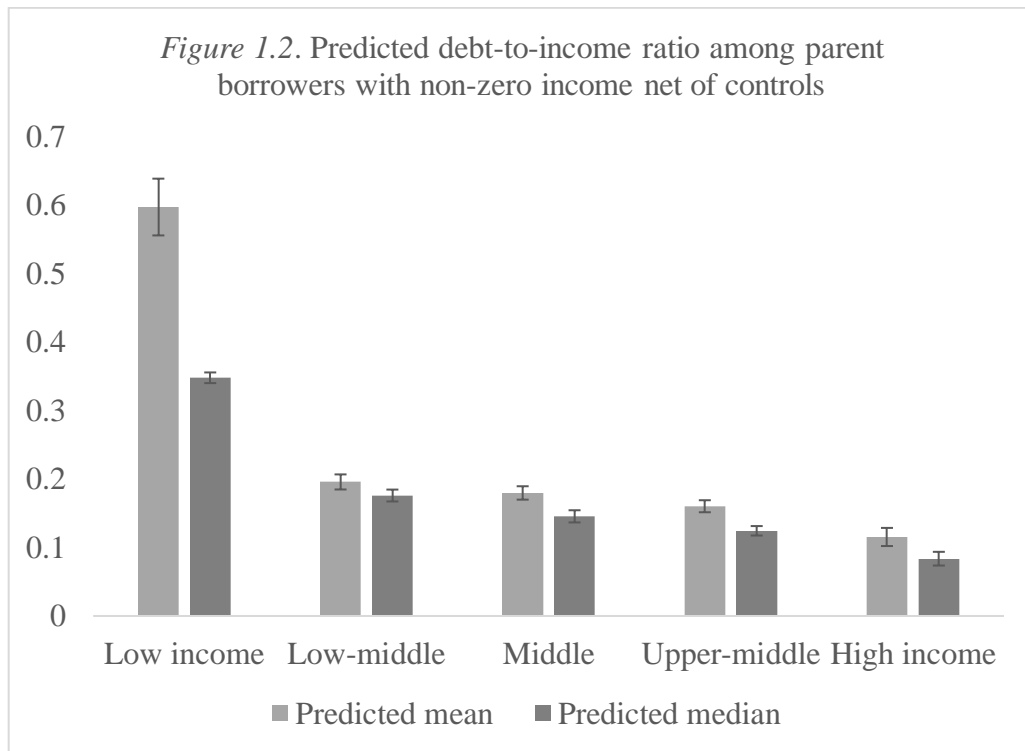
Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Predicted values control for parents' education, marital status; students' race/ethnicity, nativity, gender, high school grade point average; College selectivity, sector, HBCU, college tuition, fees, room, and board, state and federal grant aid, institutional grant aid, student loans, and parents' contribution.

Table 1.3. Weighted estimates predicting mean debt-to-income ratio (OLS), median debt-to-income ratio (Quantile regression)

	(1)	(2)
VARIABLES	Mean Debt-to- income ratio	Median Debt-to- income ratio
Parent Income (Middle income omitted)		
Low income, \$50,000 or less	0.417*** (0.044)	0.211*** (0.011)
Low-middle income, \$50,001 - 71,999	0.016 (0.016)	0.039*** (0.012)
Upper-middle income, \$95,000 - 161,999	-0.019 (0.011)	-0.015 (0.010)
High income, \$162,000+	-0.064*** (0.013)	-0.055*** (0.012)
Parents' education (Bachelor's degree omitted)		
High school diploma or less	-0.002 (0.050)	-0.011 (0.011)
Some college or AA	-0.022 (0.031)	-0.006 (0.008)
Master's degree	-0.017 (0.025)	0.002 (0.009)
Parents' marital status (Re/married omitted)		
Divorced or widowed	0.049 (0.035)	0.009 (0.009)
Single parent	0.068 (0.072)	0.014 (0.013)
Race/ethnicity (Whites omitted)		
Black	0.063 (0.038)	0.020* (0.010)
Latinx	-0.022 (0.036)	-0.000 (0.011)
Asian	0.112 (0.068)	0.024 (0.018)
Native American	-0.144 (0.096)	0.022 (0.038)
Multiracial	0.007 (0.065)	0.005 (0.018)
Nativity (Both parents born in the United States)		
Both parents born outside of the US	-0.045 (0.033)	-0.004 (0.011)
One parent born outside of the US	0.051	0.022

	(0.046)	(0.014)
Has a sibling in college	-0.030	-0.011
	(0.020)	(0.007)
Female	0.004	0.004
	(0.020)	(0.007)
Grade point average in high school	-0.004	-0.004
	(0.013)	(0.003)
Students' age as of 12/31/2015	-0.000	-0.003
	(0.006)	(0.002)
Constant	0.204	0.230***
	(0.163)	(0.051)
Observations	3,540	3,540

Notes: Analysis limited to dependent students enrolled in a four-year institution during the 2015-6 school year and whose parents had non-zero income; Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Ns rounded to nearest tens per NCES disclosure rules



Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Predicted values control for parents' education, marital status; students' race/ethnicity, nativity, gender, high school grade point average; College selectivity, sector, HBCU, college tuition, fees, room, and board, state and federal grant aid, institutional grant aid, student loans, and parents' contribution.

CHAPTER 2

Parent Borrowing through PLUS and their Children's Bachelor's Degree Completion

Abstract

Considerable research has examined whether, and how, families and students leverage financial resources, such as direct investments from parents, grants, scholarships, and student loans, for Bachelor's degree attainment, but there has been little attention to the role parent borrowing plays in college completion. Using the Beginning Postsecondary Student Longitudinal Study, 2004-2009 (BPS:09), this study investigates whether parent borrowing through the Parent Loans for Undergraduate Student program supports Bachelor's degree attainment. Drawing on cultural sociological theories, this study underscores the importance of considering qualitative dimensions of financial resources, like how money is disbursed and who uses it, to understand differences in how grants, scholarships, and loans influence degree attainment. Parent borrowing is associated with stronger degree completion for low-income students, but the amount of PLUS loans does not influence degree attainment. These findings have theoretical implications for educational attainment and policy implications for how to address college affordability.

Introduction

In the United States, a college degree is viewed as a gateway to opportunity (Hout 2012; MacLeod 2009), but only about 60% of college students complete their degree

(National Center for Education Statistics 2019; Radford et al. 2010). Completing college depends on a number of factors, but college affordability is a serious impediment for degree attainment, especially for students from low-income families (Delaney 2014; Long and Riley 2007b; Perna and Li 2006; Radford et al. 2010; Woo and Lew 2020). As family wages and grant aid have stagnated and the net price at four-year colleges has risen to \$15,380 a year, a growing proportion of families across the income distribution have turned to educational debt to cover remaining college costs (Long and Riley 2007b; Ma et al. 2019; Perna and Li 2006). Scholarly and public attention is largely focused on student loans, but families' reliance on debt is increasingly a product of parent borrowing. Between the 2010-11 and 2017-18 school year, the percent of undergraduate loans disbursed to parents through the Parent Loans for Undergraduate Student (PLUS) program grew from 18 to 23 percent (Woo and Lew 2020). As more parents borrow, it is important to understand whether parent PLUS loans help address college affordability issues and support college completion.

Parents are a critical source of financial and emotional support to children as they navigate college (Elliott, Destin, and Friedline 2011; Hamilton 2013, 2016; Hamilton, Roksa, and Nielsen 2018; McCabe and Jackson 2016; Perna 2006; Rauscher 2016; Rowan-Kenyon et al. 2008; Steelman and Powell 1989). Despite the importance of parents' financial resources for students' college success, college costs even after taking into account grants and scholarships are beyond the means of many families (Delaney 2014; Long and Riley 2007b; Perna and Li 2006; Radford et al. 2010) so parent PLUS loans are an important avenue for families to provide financial support. Yet, policy discussions about parent borrowing are often divorced from larger conversations about

college affordability. Scholars and policymakers often argue for restricting access to PLUS by creating stricter credit requirements without considering that parent borrowing is a critical resource parents use to support their children's college education (Baum et al. 2019; Cellini et al. 2020). Evidence shows that such a policy change would reduce college access (Johnson et al. 2019; Kargar and Mann 2018; United Negro College Fund 2017), but it is unclear how it would impact college completion.

This study draws on different sociological literatures on money and financial resources to investigate whether or not parent borrowing supports children's degree attainment and under what conditions. Status attainment and human capital theories suggest that more money, regardless of its source or who uses it, will improve graduation rates (Becker 2009; Goldrick-Rab, Harris, and Trostel 2009; Sewell et al. 1969; Sewell and Shah 1968). Yet, cultural sociological theories argue that qualitative characteristics of money, like its source and who uses it, are also significant (Bandelj 2020; Goldrick-Rab and Kolbe 2016; Hamilton 2013; Zelizer 1997). As a result, documented associations between other resources—like student loans or grant aid—and educational attainment may not be observed for parent borrowing. Indeed, a growing body of research shows that grants and student loans influence Bachelor's degree attainment differently, depending on who relies on the resource and the amount used (Alon 2007; Dwyer et al. 2012; Hamilton 2013). This suggests that grants, student loans, and perhaps parent PLUS loans are not interchangeable, making it important to consider the different relationships between types of financial resources and college completion.

By investigating parent borrowing through the PLUS program, this study contributes to theories of educational attainment by clarifying what types of financial

resources and under what conditions that resource supports degree completion. In the context of high college costs, stagnating family incomes, and limited grant support, showing whether or not children are more likely to complete college when their parents borrow helps policymakers and scholars advocate for more effective policies that better address declining college affordability. Using data from the 2003-09 Beginning Postsecondary Longitudinal Study (BPS), I find that parent borrowing is not associated with Bachelor's degree attainment overall, regardless of the amount borrowed. Yet, low-income children of parent borrowers do see a slight improvement in degree attainment relative to their low-income peers whose parents did not borrow. These findings are consistent with cultural sociological theories that emphasize qualitative dimensions of money. These findings indicate that parent borrowing cannot effectively substitute for other resources like grant aid, but policy solutions that restrict access to parent PLUS loans are overly simplistic. I discuss the implications for college affordability and the importance of developing financial aid policies that are more supportive of students' degree attainment.

College Affordability, Parent Borrowing, and Educational Attainment

A college degree has become a gatekeeper for middle-class life in America. In response, American family life has been reorganized around the project of financing higher education and supporting children through graduation (Hamilton 2016; Tevington et al. 2017; Zaloom 2019). Even though parents' financial support for college helps children complete their degree (Hamilton 2013; Steelman and Powell 1991), not every parent has the means to help their child pay for college (Long and Riley 2007b; Sallie Mae 2019). Over the last thirty years, college has become less affordable for students and

their parents (Delaney 2014; Perna and Li 2006). Between 1984 and 2011, the average cost of tuition, fees, room and board at four-year public institutions grew from 16.4% of the median household income to 33.5% (Delaney 2014), and 60% of dependent students had unmet financial need (college tuition, room and board, and fees minus Expected Family Contribution and grant aid) in 2003-04 (Long and Riley 2007b). These declines in college affordability hamper students' access to, and success in, college (Avery and Hoxby 2003; Bresciani and Carson 2002; Paulsen and St. John 2002), making it imperative to reduce college costs or to provide families with resources to help finance college.

Higher education policy posits that financial resources like educational debt and grant aid should help students and families address the gap between their resources and college costs and should support college completion. To understand the effectiveness of these solutions, studies investigate the relationship grants and student loans have with college enrollment and degree attainment (Alon 2007, 2011; Dwyer et al. 2012; Hamilton 2013; Herzog 2018; Jackson and Reynolds 2013). The relationship differs depending on the type of resource (Alon 2007; Chen 2008; Chen and DesJardins 2010; Heller 1997), underscoring the importance of disaggregating the various resources available to families and investigating their distinct associations with college outcomes. Similarly, the educational benefits observed for a given resource differ depending on who uses it (Alon 2007, 2011; Dwyer et al. 2013, 2012; Heller 1997; Jackson and Reynolds 2013). In addition, especially for educational debt, the amount used influences college outcomes differently (Dwyer et al. 2013, 2012). As a result, to determine the benefits of these different types of resources, multiple characteristics of that resource—who uses it and

how much—must be considered along with different educational outcomes.

Parent PLUS loans are unique from student loans and grant aid in terms of who uses them and the amount of debt families use. Like federal grant aid and student loans, families apply for PLUS loans through the Free Application for Student Aid (FAFSA). Unlike grants and student loans, PLUS loan eligibility depends on a few additional factors. First, parents must be a biological, adoptive, or step-parent to a child enrolled at least half-time in college. In addition, parents must meet certain credit requirements, which are much lower than the threshold they would have to reach for many other sources of credit, such as taking out an additional mortgage or other lines of credit (U.S. Department of Education 2019a). Together this suggests that families with parent borrowers are more advantaged than parents who do not use PLUS, but less advantaged than families where parents use other forms of debt to pay for college (Cepa ND, Walsemann & Ailshire 2016). Second, the amount of PLUS loans parents can borrow varies dramatically across families because it depends on the difference between college costs and financial aid (U.S. Department of Education 2019b). In other words, institutional characteristics and the amount of grant aid that students already receive may matter for how parent borrowing influences degree attainment. As a result, parent PLUS loans may have a distinct relationship to degree attainment than other resources like grant aid and student loans that are used to address college affordability.

Unlike grant aid and student loans, less is known about the educational benefits of parent borrowing through the PLUS program, including how it impacts degree attainment and under what conditions (for exceptions see Woo and Lew 2020). Instead, existing investigations have largely focused on college access and enrollment (Johnson et al.

2019; Kargar and Mann 2018; United Negro College Fund 2017). These studies find that many students, especially Black students and those from low-income households, discontinued enrollment or did not matriculate after policy changes restricted access to federally-financed parent loans (Johnson et al. 2019; Kargar and Mann 2018; United Negro College Fund 2017), though some work finds a negative association between PLUS loans and persistence (McClure 2017). In contrast, there is limited evidence that the children of parent borrowers are more likely to complete college once selection into the PLUS program and other student and college characteristics are considered (Woo and Lew 2020). In part, parent borrowing's relationship to Bachelor's degree attainment may depend on who is using PLUS loans and how much they borrow, but this possibility has not been investigated. My study moves beyond the existing literature by considering the ways that different characteristics of parent borrowing may influence degree attainment. This provides clarity about the benefits of PLUS, why certain resources are not fungible, and insight into policy levers that address college affordability issues.

Quantitative Characteristics of Money: Amount and Degree Attainment

Originating in theories of rational choice and status attainment, this perspective argues that families invest in educational opportunities to support children's human capital accumulation (Becker 2009; Goldrick-Rab et al. 2009; Sewell et al. 1969; Sewell and Shah 1968). For families with limited financial resources, grants and scholarships, and to a lesser extent, educational debt, helps cover college expenses. This investment into educational opportunities is expected to support college completion, regardless of the resource and who uses it. For example, when parents draw on their savings and income to finance college, their children are more likely to complete a Bachelor's degree (Steelman

and Powell 1989), regardless of their socioeconomic position. In addition, grant and scholarship aid supports degree attainment (Alon 2011; Goldrick-Rab et al. 2016), making it a potential substitute for parents' resources. As a result, investment from families' income and savings as well as grants and scholarships can fund educational opportunities that support degree completion.

However, the amount students borrow has a more complex relationship to degree attainment. Instead of a linear relationship where each additional dollar of debt is associated with increased odds of degree attainment, this relationship is only observed up until about \$10,000 of student loan debt (Dwyer et al. 2013, 2012). When student borrowing exceeds \$10,000, educational debt reduces the odds of degree attainment (Dwyer et al. 2013, 2012), in contrast to the findings for parents' investment and grant aid. Although the mechanisms driving this relationship are largely untested, this curvilinear relationship between parent borrowing and degree attainment is more pronounced at public colleges than private institutions and for low- and middle-income students than high-income students (Dwyer et al. 2012). Although speculative, this appears to be because students in public colleges lack the supports that private colleges can provide, such as more individualized attention from faculty and advisors, which can help students engage in campus life and complete their degree (Bowen, Chingos, and McPherson 2009; Dale and Krueger 2002). Similarly, parent borrowing through PLUS may influence degree attainment differently depending on how much is borrowed.

Qualitative Characteristics of Money: Type of Resource and who Borrows and Degree Attainment

In contrast, cultural sociology theories argue that a dollar from one financial

resource is not necessarily equivalent to a dollar from another, depending on the money's characteristics and the characteristics of those who use it (Bandelj 2020; Goldrick-Rab et al. 2009; Goldrick-Rab and Kolbe 2016; Hamilton 2013; Sykes et al. 2015; Zelizer 1997). Focusing first on the variation across types of money, scholars have identified a few distinct processes (Bandelj 2020; Zelizer 1997). On one hand, people interpret money differently depending on how it is packaged (Bandelj 2020; Zelizer 1997). For example, students interpret grant aid as a sign from colleges that they belong at the school and deserve to be there, but they do not interpret student loans this way (Goldrick-Rab et al. 2009). Perhaps this is because students must pay back any money they borrow, meaning it does not discount tuition the same way that grants or scholarships do, dampening the impact of loans on degree attainment relative to grants. On the other, how money is packaged and received also impacts how individuals spend the money, with recipients earmarking money for different purposes (Bandelj 2020; Sykes et al. 2015; Zelizer 1997). For example, research focusing on the receipt of social welfare programs finds that individuals earmark money from the Earned Income Tax Credit to pay down debts and to finance long-term financial goals, unlike money received from other means-tested government transfer programs (Sykes et al. 2015). This suggests that parents and students may earmark grants, student loans, and PLUS for different expenses as well, which may lead to differential impacts on degree attainment.

In the context of the financial resources used to pay for college, empirical evidence on grants, parents' cash transfers, and student loans underscores the importance of considering the qualitative aspects of money. For example, a dollar of grant aid supports degree attainment to a greater degree than a dollar of student loan debt (Alon

2007; Chen 2008). Similarly, parents' cash contributions improve the likelihood of degree attainment to a greater degree than either student loans or grants and scholarships (Hamilton 2013). Yet, it is less clear whether the impact of PLUS loans differs from that of student loans or parents' cash transfers. Assuming that students can differentiate between parent borrowing and other financial contributions, students may interpret PLUS loans differently. Relative to student loans, students may feel some of the same risks when their parents borrow through PLUS, they may feel buffered from those risks because their parents have taken them on, or they may be even more concerned about those risks if they recognize their parents' financial sacrifice. Indeed, qualitative studies show that students often recognize the financial sacrifices parents make to finance college, even when their parents attempt to shield them from this reality (McCabe and Jackson 2016; Zaloom 2019). Alternatively, families may earmark PLUS loans differently than they do other resources. For example, parents may use grants, their cash contributions, and federal student debt to secure enrollment and a college degree, but use PLUS to help their children reduce their educational debt burden by avoiding private student loans or credit card debt (Friedline et al. 2017; Hamilton 2016; Perna 2008). If this is the case, then PLUS may have less of an impact on degree attainment than other types of financial assistance.

Second, who accesses a certain resource also shapes its influence on outcomes (Bandelj 2020; Goldrick-Rab et al. 2009; Perna 2006; St. John et al. 2000; Sykes et al. 2015; Zelizer 1997). In part, this has been explained by students' and families' sensitivity to college costs, how they earmark resources, as well as the uneven dissemination of information about college costs, affordability, and financial resources, depending on

institutional practices and students' background (Chen 2008; Heller 1997; Perna 2006). Empirical evidence shows that the impact of grant aid and educational debt differ across students' social class and race (Alon 2007, 2011; Dwyer et al. 2012; Goldrick-Rab et al. 2016, 2009; Jackson and Reynolds 2013). For example, student loan debt has a greater impact on educational outcomes among low- and middle-income students than it does for high-income borrowers (Dwyer et al. 2012). Similarly, students from low- and middle-income families have higher completion rates with increased grants and scholarship support, while students from high-income families do not (Alon 2011; Goldrick-Rab et al. 2016). In addition, Black students also enjoy stronger educational outcomes from grants and scholarships than white students do (Alon 2007; Goldrick-Rab et al. 2009). Altogether, these findings suggest the importance of considering students' background characteristics when investigating educational outcomes associated with parent borrowing outcomes. In addition, it is critical to disaggregate the relationship between parent borrowing and degree attainment by family income to understand whether low- and middle-income students are also more likely to benefit from parent PLUS loans.

Data and Methods

Data

Using the 2004-09 Beginning Postsecondary Longitudinal Study (BPS), I examine the association between parent PLUS loans and college completion. BPS is a nationally-representative sample of 18,640¹³ students who were in their first year of undergraduate education at any postsecondary institution that met all criteria for

¹³ Per NCES disclosure rules, I round to the nearest ten for all sample sizes.

distributing federal aid under Title IV of the Higher Education act during the 2003-04 school year¹⁴. Although almost 19,000 students were surveyed initially, only 16,680 were actually first-time beginning postsecondary students (FTBs), provided enough information to construct enrollment history, and remained alive through the entire study period (from 2003 to 2009) (Wine, Janson, and Wheelless 2011). Students surveyed in BPS needed to be enrolled in an academic program, at least one course that could be fulfill an academic degree requirement, or an occupational or vocational program that required 3 months of study towards a formal educational award; and could not be simultaneously enrolled at a high school or General Educational Development (GED) program.

Collected by the National Center for Education Statistics (NCES), all students surveyed in BPS were drawn from the 2003-04 National Student Postsecondary Student Aid Study (NPSAS) sample, and as such includes detailed information about students' 2003-04 financial aid packages from administrative data files. NPSAS, and by extension BPS, respondents were surveyed using a two-stage design that first selected 1,670 institutions and then 49,410 sampled potential FTBs within 1,360 eligible institutions that responded to requests for student enrollment lists. After verifying FTB status, about 23,090 students remained and responded to the first follow-up survey in 2005-06 and 18,640 remained for the final survey wave in 2008-09. In the follow-up waves, students were surveyed in the 2003-04, 2005-06, and 2008-09 school years about students'

¹⁴ This means that all students in the sample attended a postsecondary institution that offered an educational program for those who completed high school; offered one or more academic, occupational, or vocational program of study that lasted for at least 3 months; offered courses for students other than employees or members of a company; and was located in a United States state, District of Columbia, or Puerto Rico (Wine, Janson, and Wheelless 2011).

demographic characteristics, their degree completion, and information about the colleges they attended. BPS also collects annual administrative information on loans for every year between 2003 and 2009 from a few different administrative sources, including the National Student Loan Data System (NSLDS). To account for the complex sampling structure of BPS, I use sampling weights in all analyses.

Because I focus on understanding Bachelor's degree completion, I restrict the sample to students who only attended a four-year college where the majority of students earn their Bachelor's degree (40% of the sample)¹⁵. In addition, because I focus on how parent borrowing influences college completion, I restrict the sample to dependent students (70% of the full sample). Finally, to address selection into parent borrowing, I restrict the sample to students who applied for federal financial aid (71% of full sample), a prerequisite for receiving PLUS loans¹⁶. To address missing information in parents' level of education (0.53%) and college selectivity (0.44%), I use multiple imputation using the chained command in Stata 13 with 5 imputed datasets. As a result, the final, analytic sample is 5,470 students.

Measures

College completion. The dependent variable in the analyses is a dichotomous variable for Bachelor's degree completion by the end of the survey period six years later.

Parent borrowing. I investigate parent borrowing through the PLUS loan program with two different measures. First, I use a dichotomous indicator for whether or not a

¹⁵ I also ran analyses that included students who attended community colleges and findings remained largely consistent.

¹⁶ In supplemental analyses, I also restricted the sample to students who only ever enrolled full-time. Findings remained largely unchanged.

parent every borrowed through the PLUS loan program. Second, I calculate the amount parents borrowed through the PLUS loan program in the first year they borrowed. If a parent never borrowed, they are coded as a “0.” This is consistent with previous work on student borrowing that was concerned with a possible spurious relationship that the length of time enrolled likely has with both the total, cumulative amount borrowed and college completion (Dwyer et al. 2013, 2012)¹⁷. The amount of PLUS loans has been updated to constant 2009 dollars as is presented in \$1,000 to ease interpretation.

Family income. Family income is presented as quintiles of family income in the 2003-04 academic year. The low-income quartile represents students whose families made between \$0 and \$50,000, because the majority of families with income below \$50,000 use the Federal Pell Grant program, whereas only 5% of families with higher incomes do (College Board 2018). Although Pell provides needed financial support for low-income students, Pell covered only about a third of the average tuition, fees, room and board published at a public, four-year college (Perna and Li 2006). Despite support from Pell, low-income students still face considerable difficulties in affording college, which may complicate degree attainment. On the other hand, students in the low-middle income (\$50,001 to \$65,000) and middle-income quintiles (\$65,001 to \$98,000) are less likely to have access to Pell, but still have difficulties affording college (Perna and Li 2006), which may influence how PLUS loans impact degree attainment. Students who are categorized as high-middle income come from families that made between \$98,001 and \$140,000, which represents incomes between the 75th and 90th percentile in my sample.

¹⁷ Supplemental analyses using amount parents borrowed in the final year they borrowed produced similar results. In another set of supplemental analyses, I model the amount parents borrowed as the ratio of parent PLUS loans to total aid. Again, this produced similar results.

Finally, high-income students had parents who made more than \$140,00, which reflects students from the top 10% of incomes in my sample¹⁸.

Student Characteristics. Because PLUS is used to a greater extent among more advantaged families whose children are more likely to complete college (Cepa ND), it is critical to take into account their family context and the social, cultural, and financial resources available to students (Goldrick-Rab et al. 2009; Perna 2006). First, I consider social and cultural resources. For example, parents with a college degree may be able to help successfully navigate their children through college and have different feelings about borrowing so I include a dichotomous indicator for whether or not a parent completed college. Similarly, whether or not a student believes their parents helped pay for college costs may not just be an indicator of financial resources, but also of their relationship quality and social and cultural support. I incorporate a dichotomous indicator of whether or not a student believes their parents helped pay tuition and fees during their first year of college into my analyses. In addition, parents' marital status is associated with the use of parent PLUS loans so I include a measure for whether or not parents are single, divorced, or widowed relative to married (Walsemann and Ailshire 2016). In addition, students may benefit from insights of siblings who have attended college before them (Woo and Lew 2020). Having multiple children enrolled in college is also associated with more grant and scholarship assistance and less educational debt so I incorporate a dichotomous indicator for whether or not students had a sibling enrolled in college before or during their first year of college in 2003-04.

¹⁸ I also run the analyses with equal income quartiles. The findings remain consistent with this alternative specification.

In addition, previous work finds that financial resources are critical for students' college outcomes, which may influence the relationship parent borrowing has with completion. The parents of children with higher test scores have earmarked more savings for their children's college education and their children receive more institutional, merit-based aid and there is less need for parent PLUS loans so I include a continuous measure of students' SAT scores¹⁹ (Steelman and Powell 1991). Similarly, receipt of scholarship aid is also dependent on college performance so I include a continuous measure for students' college grade point average in their final year of enrollment. Enrolling part-time reduces the odds of degree attainment within six years of matriculation but also reduces college costs and the likelihood of parents' borrowing (Attewell, Heil, and Reisel 2011; Cha et al. 2005) so I incorporate a dichotomous indicator for whether or not a student had ever enrolled part-time. Recent work also shows that grant aid, educational debt, and parent contributions influence students' choice of majors, which also has an impact on degree attainment (Quadlin 2017). Following Quadlin (2017)'s typology of majors, I compare students who majored in academic non-STEM majors (history, sociology, English, etc.) to those who studied academic STEM fields (biology, chemistry, mathematics, etc.), applied STEM fields (nursing, engineering, computer science, etc.), applied non-STEM (education, business, etc.), and those who are undecided. In addition, I incorporate a dichotomous indicator for whether or not a student's parents owned their home. As an indicator of wealth, this may alter both a parents' eligibility for borrowing PLUS loans and their beliefs about the importance of helping students finance college (Steelman and Powell 1991; Walsemann and Ailshire 2016). In addition, I take into

¹⁹ I also used a continuous variable for students' high school grade point averages with similar results.

account students' grant and scholarship assistance, which is measured as the total amount received in the 2003-04 school year. Finally, I control for student borrowing with a measure of the earliest amount borrowed that has been top-coded at the 99th percentile and presented in \$1,000²⁰. Previous work found a curvilinear relationship between student loans and degree attainment (Dwyer et al. 2013, 2012), so I include a quadratic for student borrowing as well²¹.

Finally, college completion and parent borrowing differs according to students' demographic characteristics. I account for the student's gender with a dichotomous variable for male or female because women are more likely to complete college and are more reliant on debt than men (Buchmann, DiPrete, and McDaniel 2008; Dwyer et al. 2013). In addition, because there is considerable racial and ethnic variation in the likelihood that parents borrow and that students graduate (Walsemann and Ailshire 2016; Zaloom 2019), I take into consideration a student's race and ethnicity with a five-part categorical variable comparing white students to those who identified as Black, Hispanic, Asian, or another racial and ethnic group in 2003.

Institutional Characteristics. Students' likelihood of completing college and their reliance on educational debt differs across institutions (Bowen et al. 2009; Cha et al. 2005; Gerber and Cheung 2008), so I consider a number of institutional characteristics that may shape the association between parent borrowing and degree completion. First, I incorporate a three-part control for college sector, comparing students who are enrolled in

²⁰ As with parent borrowing, I look at a single year of borrowing and not cumulative amount borrowed because of the potential for a spurious relationship between student borrowing and amount of time enrolled (Dwyer, Hodson, and McCloud 2013; Dwyer, McCloud, and Hodson 2012).

²¹ I also tested models using a variable for loans borrowed during students' earliest year of debt with similar findings.

private or for-profit colleges with those who are enrolled in public institutions during their first year of college. Similarly, I take college selectivity into account, comparing students who began college at four-year, moderately-selective institutions to those whose first year was at four-year open enrollment, minimally-selective, or highly-selective college. College selectivity is defined by BPS using the Carnegie classification system. Minimally-selective colleges are defined as those institutions whose students' average test scores fall in the lowest quintile of test scores across colleges. Moderately-selective colleges are those whose students' test scores are in the middle two quintiles and very selective colleges have average test scores among the highest 20 percent. Finally, because there are considerable differences in the use PLUS loans at minority-serving institutions, I take into account whether or not a student attended an HBCU in their first year of college, the only year that this measure is included in the data.

Methods

First, I present descriptive statistics of the sample, comparing relevant completion and student and institutional characteristics across students whose parents borrowed and those who did not using t-tests. Next, to address my first research question about whether or not the children of parent borrowers are more likely to complete college, I analyze two logistic regression models predicting Bachelor's degree completion. The first model is a base model that includes just the dichotomous indicator of parent PLUS loans. The second model includes student and institutional characteristics. I then investigate the relationship between parent borrowing and degree attainment in more detail in two ways. First, I consider whether the amount parents borrow is consequential for students' degree attainment and present four models. I analyze a logistic regression predicting Bachelor's

degree attainment as having a linear relationship with the amount of parent PLUS loans borrowed. I then incorporate student and background characteristics to my second model. The third and fourth models repeat the same, but instead model the likelihood of Bachelor's degree attainment as having a quadratic, curvilinear relationship with the amount of parent PLUS loans borrowed by using a squared term for amount parents borrow. Finally, to understand how the relationship varies across family income, I model Bachelor's degree completion with an interaction term between parent borrowing and parents' income.

Findings

Descriptive Findings

Table 2.1 presents the weighted descriptive statistics of the full sample and across the parent borrowing status. Almost a quarter of the sample had parents who used PLUS loans at some point during college and the parents borrowed about \$2,490 on average per school year. By the last year of the survey wave, 73% of the sample had completed their Bachelor's degree. This is higher than the average completion rate in part because it only includes students who began college at a four-year institution. Comparing the odds of completion for students whose parents borrowed and those who did not, there is little meaningful difference (72% versus 75%, respectively). However, this may be due to differences in the types of colleges the children of parent borrowers enroll in, which would suppress any benefits parent borrowing has for degree attainment. Alternatively, parent borrowing is more common in more advantaged families, which potentially overinflates the benefits of parent borrowing in terms of college completion. As a result, taking into account students' background characteristics and college characteristics is

critical for understanding the relationship parent borrowing has with degree completion.

As previous analyses show, the children of student borrowers are more advantaged. In the overall sample, students are divided into five income groups, with the low-income group capturing students whose family income makes them eligible for Pell grants and thus less likely to use PLUS but also less likely to complete college. The low-income group makes up 39% of the total sample. The remaining four income groups are divided into roughly even groups, with slightly more students found in the middle-income group. The children of parent borrowers are more likely to be middle-income and upper-middle income. Over half of the sample is female (57%), which is consistent with findings about the gendered patterns of college enrollment (Buchmann et al. 2008). The sample is also 68% white, with an even higher proportion among the children of parent borrowers (73%). In contrast, Latinx and Asian students comprise a smaller proportion of the children of parent borrowers than the children of parent non-borrowers. Over half of children in the sample have completed college (56%) and the majority of students come from households with married parents (73%), though there is no difference across parent borrowing. Students in the sample had a wide variety of college experiences. Finally, the sample is comprised of a high percentage of homeowners (86%), with homeownership being more common among parent borrowers (90% versus 85%). Overall, these patterns support previous findings that the children of parent borrowers are already more advantaged and thus may have an advantage when it comes to college outcomes.

In addition, students' experiences on campus can influence their degree attainment and may also vary by their background characteristics and parents' PLUS loan use. For example, students' with stronger academics in college are more likely to

complete, and students in the sample perform relatively well, with an average grade point average of about 3.18. In addition, students who enroll part-time are less likely to complete their degree, especially within six years of matriculation, though this is often associated with students' background characteristics as well (Attewell et al. 2011; Attewell, Heil, and Reisel 2012). In this study's sample, about three out of every ten students is enrolled part-time. Students' field of study have been tied to both family resources and degree attainment (Quadlin 2017). In this sample, students whose parents borrow are more likely to study an applied STEM major and an academic non-STEM major, but they are less likely to study an academic non-STEM major. Similarly, working 20 or more hours a week is often associated with lower likelihood of completing college and is more common among students from low-income backgrounds (Bozick 2007) and about 27% of students work more than hours a week in this sample. In similar work, students' living situations influence how connected students are to campus life, and ultimately their likelihood of persisting in college (Bozick 2007). About 70% of students in my sample live on-campus and an even higher proportion (79%) of those who use PLUS live on-campus. In contrast, only 10% of students live off campus and 20% of students live with their families. Those whose parents use PLUS are similarly likely to live off-campus but less likely (13%) to live with their parents.

In contrast, enrollment patterns are complex and parent borrowing is sometimes associated with student enrollment at institutions with lower completion rates, which may negatively bias the relationship between parent borrowing and degree attainment. For the full sample, enrollment is highest at public colleges (63%) and about a third of students attend a private college, with the remaining 4% of students enrolled at for-profit colleges.

Comparing the children of parent borrowers to those whose parents do not use PLUS there is considerable variation in enrollment patterns. Students whose parents borrowed are less likely to attend public colleges (55% versus 65%), though they are more likely to enroll in private institutions (38% versus 32%). However, the children of parent borrowers are over twice as likely to attend a for-profit college (7% versus 3%), which is concerning given the lower completion rates at these institutions. Students in the full sample are most likely to attend moderately-selective institutions (44%), with the remaining students divided relatively equally among open enrollment, minimally selective, and highly-selective institutions. Enrollment patterns by college selectivity do not vary substantially depending on parent borrowing. Enrolling in an historically black college or university (HBCU) is relatively rare in this sample, with 3% of students at these institutions. However, HBCU enrollment is two times higher among the children of parent borrowers (4% versus 2%).

Finally, recent research argues that benefits of parent borrowing are because they help address liquidity constraints students experience while enrolled. To determine this possibility, other financial resources, such as financial aid, student loans, and parent support must be considered. On average, the sample received about \$1,820 of merit aid and \$3,230 in need-based aid, and \$3,890 in student loans. In addition, 68% of students reported that their parents helped them pay tuition. However, receipt of financial resources from other sources varies depending on whether or not parents borrow, but not in ways that suggest liquidity constraint. Although students whose parents borrow receive less merit aid (\$1,640 versus \$1,880), they borrow more themselves (\$5,270 versus \$3,470) and they are more likely to have parents who help pay tuition (81% versus 64%).

In other words, parent borrowing may not address liquidity constraint for tuition and fees, which these other resources can also cover.

Multivariable Logistic Regression Findings

To gain a better sense of the association between parent borrowing and degree attainment, Table 2.2 presents multivariable analyses that take into account student and institutional characteristics. The base model (Column 1) only includes whether or not parents borrowed and shows that there is no association with degree attainment. The next column incorporates student and institutional characteristics and shows that parent borrowing still has little relationship to degree completion²². Overall, the findings largely suggest that parent borrowing does not support students' degree attainment net of the other financial resources.

The association student characteristics and experiences have with Bachelor's degree reflect those observed in the literature. Specifically, high and upper-middle income students have higher odds of completing college than middle-income students. Women have about 28% higher odds of earning a Bachelor's degree than men. Across race and ethnicity, completion rates are largely similar. In addition, relative to those whose parents are married, students of single or divorced and separated parents have lower odds of completing college and this is observed across all models. Finally, there is a positive relationship between SAT math scores and completing college, while working

²² I also perform inverse probability weighting with regression adjustment to take into account variation in who uses PLUS loans when investigating the relationship between parent borrowing and degree attainment (analyses available upon request). Second, I also performed analyses where I treated PLUS loans as a spline function, which allows me to combine both the dichotomous indicator for parent borrowing with the continuous measure for the amount parents borrowed into a single model. Findings for both supplemental analyses were largely consistent with the main findings.

20 or more hours a week is associated with lower odds of degree attainment. Students' experience in college also influence degree attainment. For example, as students' college grades increase, the odds of completing college increase by a factor of almost three. And compared to students who major in an academic, non-STEM field, those who are undecided have considerably lower odds of completion. In addition, students who live on-campus have higher odds of Bachelor's degree attainment than living with family does.

Comparing outcomes across college characteristics, the association with completion also remain largely consistent with existing literature. Students at for-profit colleges have considerably lower odds of degree attainment than those enrolled at public institutions (about 75% lower odds). In contrast, those who attend very-selective colleges have over 60% higher odds of completing their degrees than those at moderately-selective institutions. Finally, turning to other financial resources, findings are generally consistent with patterns observed in previous literature. Students who receive more merit and need-based aid have higher odds of completing college (by 5% and 4%, respectively). In addition, there is a curvilinear relationship between student borrowing and degree attainment, consistent with previous studies' findings (Dwyer et al. 2013, 2012). Having parents who help pay for tuition is also associated with 35% higher odds of degree completion. Thus, parent borrowing appears to be somewhat of an anomaly among financial resources in that it does not appear to support degree attainment.

In part, the null findings for parent borrowing may be because it operates similarly to student loans. Student loans display a curvilinear relationship, which means that studies comparing outcomes among those who borrowed to those report mixed

findings (Bowen et al. 2009; Dwyer et al. 2012; Ishitani and DesJardins 2002). This may also be observed for parent borrowing. To test this possibility, Table 2.3 focuses on the amount parents borrowed in two different ways. The first is modeling a linear relationship between the amount parents borrowed and degree completion and the second considers that the relationship is curvilinear by using a quadratic expression of amount parents borrow. The first two columns in Table 2.3 show that the amount parents borrow does not have a linear relationship with degree attainment, both before and after taking student and institutional characteristics into account. The last two columns treat the relationship between parent borrowing and college completion as a quadratic with a curvilinear association, but again there is no evidence supporting this perspective. Wald tests show that the relationship parent borrowing has with degree attainment is significantly different from both types of grant aid as well as student loans. Altogether, this further confirms that the relationship between parent borrowing and degree attainment is largely consistent with cultural sociological theories.

Finally, Table 2.4 considers the possibility that the educational benefits of PLUS loans varies for children from families across the income distribution. Although middle-income children of parent borrowers see no difference in their odds of degree attainment, low-income children of parent borrowers have higher odds of completing college. Figure 2.1 documents the predicted probabilities from this model. Low-income students whose parents borrow are 9% more likely to complete college (69% versus 75%), while the predicted probability of completing college remains relatively unchanged for low-middle, middle, upper-middle, and high-income children of parent borrowers. However, this finding should be interpreted with caution because a global test of the equality of

coefficients does not find that the model is improved by including the interaction term between parents' income and PLUS.

However, the amount parents borrow does not have an association with degree attainment for middle-income students and there is little variation in the relationship between parent borrowing and degree attainment across the income distribution, confirmed by a global test for the equality of coefficients. In other words, there is some evidence that PLUS has benefits for low-income students in terms of degree attainment, but the association does not hold once I investigate the amount parents borrow through PLUS. In additional analyses, I find that PLUS has similar null associations with degree attainment across parents' homeownership, race and ethnicity, as well as college type. Overall, the evidence shows that parent borrowing has limited benefit in terms of students' degree completion for advantaged families, but is associated with improved college completion for low-income students.

Discussion

In the United States, only about 60% of four-year college students complete a Bachelor's degree within six years of matriculation (Radford et al. 2010). In part, scholars and policymakers believe stubbornly low graduation rates are due to declines in college affordability (Long and Riley 2007b; Radford et al. 2010; Woo and Lew 2020). To address this, students and their families can access grants and educational debt, including student loans and parent loans, but there has been little attention to completion outcomes when parents borrow through the federal Parent Loans for Undergraduate Students (PLUS) program. By investigating parent PLUS loans, this study expands on existing research investigating whether grants and student loans support degree

attainment (Alon 2007, 2011; Dwyer et al. 2013, 2012; Jackson and Reynolds 2013). My findings show that PLUS helps some students manage unaffordable college costs and complete a degree.

Extending previous investigations of the educational benefits when parents borrow (Woo and Lew 2020), this study finds that parent borrowing influences degree attainment differently depending on parents' income. Among dependent, four-year college students, those whose parents borrow are not more likely to complete a Bachelor's degree. Yet, after disaggregating students by family income, the low-income children of parent borrowers are more likely to complete college than low-income students whose parents do not borrow. In contrast, parent borrowing is not associated with higher completion rates for more advantaged students. These findings are consistent with previous work documenting greater returns to grant aid and student loans for low-income students (Alon 2007, 2011; Dwyer et al. 2012; Goldrick-Rab et al. 2016). In addition, a similar pattern is observed when investigating how and for whom parent PLUS loans influence college access (Johnson et al. 2019; Kargar and Mann 2018; United Negro College Fund 2017).

These findings have theoretical implications for the study of educational attainment. First, education scholars often advocate for incorporating sociological theories into investigations of college success (Goldrick-Rab et al. 2009; Perna 2006) and this study suggest cultural sociological theories of why money matters may be important to incorporate (Bandelj 2020; Goldrick-Rab and Kolbe 2016; Hamilton 2013; Zelizer 1997). Sociologists have applied these theories to families' savings behaviors and receipt of government aid like the Earned Income Tax Credit (Hayes and O'Brien 2020; Sykes et

al. 2015), but have not explicitly used it to understand how students and their parents finance college. These studies suggest that students may interpret grants, loans, and parent contributions differently and that families may earmark the various resources at their disposal for different purposes that may impact degree attainment. I draw on these theories to argue that it is important to investigate not just how much money grants and educational debt provide students and families, but also how the money is given to families and who uses it. Previous quantitative investigations of grant aid and student loans showed that a dollar of one is not equivalent to a dollar of the other in terms of educational attainment (Alon 2007, 2011; Dwyer et al. 2012; Hamilton 2013). In addition, qualitative work shows that students think of loans as separate from grants, and that they do not consider educational debt a form of financial aid (Goldrick-Rab et al. 2009). My study expands on these findings and shows distinctions across different types of debt because a dollar of parent PLUS loans does not have an equivalent relationship to degree attainment as student loans does. In other words, how money is given to families—as grant aid, parent loans or student loans—is an important component of how it influences degree attainment. Future studies should clarify why this is the case and whether students and families make distinctions across other types of resources as well, such as subsidized and unsubsidized debt or when comparing parent PLUS loans to other ways that parents borrow for college.

In addition, this study takes into account whether the relationship between parent PLUS loans and degree attainment depends on who borrows. Previous studies show that students across the income distribution vary in their degree of sensitivity to college costs, information about ways of off-setting tuition, perceptions of different resources, and how

they earmark resources (Chen 2008; Friedline et al. 2017; Heller 1997; Perna 2008). This variation is then observed in the greater educational benefits to student loans and grant aid among low-income students (Alon 2007, 2011; Dwyer et al. 2012; Goldrick-Rab et al. 2016). Future qualitative work should apply cultural sociological theories about money to disentangle these various explanations to investigate why grant aid, student loans, and parent loans impact degree attainment differently for students across the income distribution.

Unraveling why different students and parents see different educational benefits to the various resources for financing college is critical for policy discussions about college affordability. First, investigating these questions provides insight into the most effective way to channel money to students to improve educational outcomes. For example, the children of low-income parent borrowers are more likely to complete college than those who do not borrow, though these benefits are not observed for more advantaged students. These findings are consistent with patterns in college enrollment (Johnson et al. 2019; Kargar and Mann 2018; United Negro College Fund 2017). This suggests that policy proposals to limit access to parent PLUS loans through more stringent credit requirements would likely decrease degree attainment for the least advantaged college students and widen the income gap in degree attainment (Baum et al. 2019; Cellini et al. 2020). In other words, restricting access to parent PLUS loans without addressing low-income families' liquidity constraints with additional Pell grants or reduced tuition may be a misguided practice with educational implications for low-income students.

Second, policymakers should also consider that this study found that the amount

families, including low-income parents, borrowed does not influence degree attainment. Before limiting how much parents can borrow, policymakers should understand how students and parents interpret parent PLUS loans, how they spend PLUS loan dollars, and why they use them. PLUS loans may only be impactful for low-income students because PLUS is the only resource left to address greater liquidity constraints they face. If this is the case, low-income students may interpret PLUS as a last-chance lifeline whereas middle- and high-income students may see PLUS as a less critical add-on to their existing resources. Similarly, this may mean that low-income families have less agency in how they earmark PLUS loans if the funds must go towards paying necessary expenses, like tuition. In contrast, there is some evidence that more advantaged families use PLUS to help their children avoid burdensome student debt, which may be less effective at improving degree attainment (Hamilton 2016; Perna 2008). Either explanation suggests that low-income families could use the additional financial support from grants and that it may be better to strengthen the Pell grant program to disburse additional dollars for each student. This finding is especially salient given that my first dissertation chapter showed that PLUS loan debt burden is particularly problematic for low-income parents.

This study is among the first to document the ways that parent borrowing influences degree completion (see McClure 2017 and Woo and Lew 2020 for exceptions), but there are several limitations to the work. First, this study could benefit from more complete information about college characteristics and financial resources. Although BPS collects detailed information about schools, students, and how families finance college, students are only asked about grants, college selectivity, and college sector in their first year of college. After that date, it is unclear whether students continue

to receive grant support or if students transfer between colleges. In addition, the measure of family contributions to college is quite broad. Students were asked whether or not parents helped pay for tuition, but it is unclear where the money comes from. Without more specific information, I erred on the side of caution and incorporated parent contributions into my models, though this may lead to underestimation in the association between PLUS loans and degree completion. In supplemental analyses, findings remained consistent even when I did not include parents' contributions. Finally, parents may draw on many different types of debt to fund college and PLUS loans are just one line of credit that may be available to families. Unfortunately, BPS does not ask whether parents took out another mortgage or used other lines of credit beyond PLUS loans to pay for college so the total amount of debt that parents take on to help finance their children's postsecondary education is likely underestimated. Finding data that differentiates between these different types of debt is likely a challenge, but doing so could provide an opportunity to investigate whether different disbursement methods across these types of debt are associated with different completion rates.

Across multiple models, and using different measures of parent PLUS loans, findings consistently showed that parent borrowing is not associated with degree attainment for all but low-income students, but these findings are not causal. To increase comparability between the children of parent borrowers and their peers whose parents' do not borrow, I employed a number of techniques. First, I restricted the sample to dependent students who applied for financial aid through FAFSA, both of which are prerequisites for receiving parent PLUS loans. Second, I conducted supplemental analyses using inverse probability weighting with regression adjustment to take into

account differences in which parents borrow when estimating the relationship between parent borrowing and degree attainment. My findings remained consistent. Future research might consider exploiting data that contain changes in PLUS loan eligibility policies to make a stronger causal claim (see Johnson et al. 2019 for a similar analysis investigating college access).

As parents increasingly borrow to finance their children's college education, it is critical to understand whether PLUS loans support degree attainment. This study finds that PLUS's benefits in terms of college completion are primarily observed for low-income students, which generates questions about how policymakers and scholars should respond. Higher education policies should address the conditions that necessitate parents borrowing through the PLUS program. Many scholars point to declining college affordability as an impediment to degree attainment (Long and Riley 2007b; Radford et al. 2010; Woo and Lew 2020). Paired with more generous grant and scholarship aid at private institutions, current policy proposals to make college more affordable at public four-year colleges and Historically Black Colleges and Universities could go a long way to reducing families' need to use PLUS while also making a degree more attainable. Policies that restrict access to parent PLUS loans without address these underlying issues will likely do more harm than good for disadvantaged students. This study's findings suggest that scholars, policymakers, and higher education advocates should work towards a higher education and financial aid system that better supports students as they work towards a college degree.

Table 2.1. Descriptive Statistics for Entire Sample and by Parent Borrowing

	Full Sample	No PLUS	PLUS	
	mean	mean	mean	p
Complete Bachelor's degree	0.73 (0.01)	0.72 (0.01)	0.75 (0.02)	
Parents borrow PLUS	0.23 (0.01)			
PLUS Amount (\$1000)	2.49 (0.1)		10.83 (0.23)	
Income Quartile				
Low income, <\$50,000	0.39 (0.01)	0.43 (0.01)	0.28 (0.02)	***
Low-middle income, \$50,000 - 65,000	0.13 (0.01)	0.12 (0.01)	0.15 (0.01)	
Middle income, \$65,001 - 98,000	0.24 (0.01)	0.22 (0.01)	0.33 (0.02)	***
Upper-middle income, \$98,001 - 149,900	0.14 (0.01)	0.13 (0.01)	0.15 (0.01)	***
High income, \$149,001+	0.10 (0.005)	0.10 (0.01)	0.09 (0.01)	
Female	0.57 (0.01)	0.57 (0.01)	0.57 (0.02)	
Race/ethnicity				
White	0.68 (0.02)	0.67 (0.02)	0.73 (0.02)	**
Black	0.10 (0.01)	0.10 (0.01)	0.10 (0.02)	
Latinx	0.11 (0.01)	0.12 (0.01)	0.08 (0.01)	***
Asian	0.06 (0.004)	0.07 (0.005)	0.04 (0.01)	***
Other race/ethnicity	0.05 (0.004)	0.05 (0.005)	0.05 (0.01)	
Parent completed college	0.56 (0.01)	0.56 (0.01)	0.56 (0.02)	
Parents' marital status				
Married	0.73	0.73	0.75	

	(0.01)	(0.01)	(0.01)	
Single	0.05	0.05	0.04	
	(0.005)	(0.01)	(0.01)	
Divorced/separated	0.19	0.19	0.19	
	(0.01)	(0.01)	(0.01)	
Widowed	0.03	0.03	0.02	
	(0.003)	(0.003)	(0.01)	
Siblings in college	0.51	0.50	0.51	
	(0.008)	(0.008)	(0.02)	
Parents own home	0.86	0.85	0.90	**
	(0.01)	(0.01)	(0.01)	
SAT math score	517.64	518.91	513.39	
	(4.44)	(5.05)	(6.40)	
College grade point average	3.18	3.19	3.17	
	(0.01)	(0.01)	(0.02)	
Ever enroll part-time	0.30	0.30	0.29	
	(0.01)	(0.01)	(0.02)	
Field of study				
Applied STEM	0.09	0.08	0.11	*
	(0.01)	(0.01)	(0.01)	
Academic STEM	0.12	0.12	0.11	
	(0.01)	(0.01)	(0.01)	
Applied non-STEM	0.45	0.46	0.41	*
	(0.01)	(0.01)	(0.02)	
Academic non-STEM	0.31	0.30	0.34	*
	(0.01)	(0.01)	(0.02)	
Undecided	0.04	0.04	0.03	
	(0.004)	(0.004)	(0.01)	
Work 20+ hours/week	0.26	0.27	0.24	
	(0.01)	(0.01)	(0.02)	
Living arrangements				
On campus	0.70	0.67	0.79	***
	(0.01)	(0.01)	(0.02)	
Off campus	0.10	0.10	0.08	
	(0.01)	(0.01)	(0.01)	
With family	0.20	0.22	0.13	***
	(0.01)	(0.01)	(0.01)	
College sector				
Public	0.63	0.65	0.55	***

	(0.01)	(0.01)	(0.02)	
Private	0.34	0.32	0.38	**
	(0.01)	(0.01)	(0.02)	
For-profit	0.04	0.03	0.07	***
	(0.01)	(0.01)	(0.01)	
College selectivity				
Open enrollment 4-year	0.18	0.18	0.19	
	(0.01)	(0.01)	(0.02)	
Minimally selective	0.16	0.16	0.16	
	(0.02)	(0.02)	(0.02)	
Moderately selective	0.44	0.44	0.44	
	(0.01)	(0.02)	(0.02)	
Highly selective	0.22	0.22	0.20	
	(0.01)	(0.01)	(0.02)	
HBCU	0.03	0.02	0.04	***
	(0.01)	(0.01)	(0.02)	
Merit aid (\$1000)	1.82	1.88	1.64	*
	(0.11)	(0.12)	(0.14)	
Need aid (\$1000)	3.23	3.22	3.25	
	(0.10)	(0.10)	(0.17)	
Student loan (\$1000)	3.89	3.47	5.27	***
	(0.06)	(0.06)	(0.10)	
Parents help pay tuition	0.68	0.64	0.81	***
	(0.01)	(0.01)	(0.01)	
N=	5,470	4,160	1,310	

Source: BPS 03/09. All results are weighted and sample is comprised of dependent, four-year college students who submitted a FAFSA application. Standard error is in parentheses. Per NCES disclosure rules, sample size is rounded to the nearest tens. Both parent and student debt levels are measured in last educational loans taken out while enrolled.

Table 2.2. Logistic Regression of Bachelor's Degree Completion on Whether Borrowed through PLUS

VARIABLES	Base Model Odds ratios	+ Finan. Res. Odds ratios
Parents borrow through PLUS	1.18 (0.11)	1.12 (0.13)
Parents' income (Middle income omitted)		
Low income, Less than \$50,000		0.89 (0.13)
Low-middle income, \$50,000 - 65,000		0.91 (0.14)
Upper-middle income, \$98,001 - 140,900		1.41* (0.22)
High income, \$140,901+		1.58* (0.28)
Female		1.28* (0.13)
Race/Ethnicity (Whites omitted)		
Black		0.79 (0.13)
Latinx		1.04 (0.17)
Asian		1.27 (0.29)
Other racial/ethnic group		0.77 (0.15)
Parents completed college		1.02 (0.11)
Parents' marital status (Married omitted)		
Single		0.63* (0.13)
Divorced/Separated		0.72** (0.08)
Widowed		1.25 (0.35)
Assets: Parent owns home 2003-04		1.06 (0.16)
SAT math score		1.002*** (0.0004)
Sibling in college		1.15 (0.11)
College sector (Public omitted)		
Private		0.83 (0.11)
For-profit		0.26***

		(0.08)
College selectivity (Moderately selective omitted)		
Open enrollment		1.01
		(0.14)
Minimally selective		0.83
		(0.12)
Very selective		1.59***
		(0.22)
Historical Black College indicator 2003-04		0.83
		(0.25)
College grade point average		2.92***
		(0.28)
Ever enroll part-time		0.93
		(0.10)
Field of Study (Academic non-STEM omitted)		
Applied STEM		0.98
		(0.16)
Academic STEM		1.35
		(0.22)
Applied non-STEM		1.09
		(0.12)
Undecided		0.03***
		(0.01)
Work 20+ hours per week		0.71**
		(0.08)
Living Arrangements (On-campus omitted)		
Off campus		0.77
		(0.12)
With family		0.63***
		(0.09)
Merit aid (\$1000)		1.05**
		(0.01)
Need-based aid (\$1000)		1.03**
		(0.01)
Student Loans (\$1000)		1.11**
		(0.04)
Student Loans (\$1000), Squared		0.99***
		(0.003)
Help from parents 2004: Pay tuition and fees		1.27*
		(0.14)
Constant	2.55***	0.03***
	(0.14)	(0.01)
Observations	5,470	5,470

Notes: Ns rounded per NCES disclosure rules; Standard errors in parentheses; ***
p<0.001, ** p<0.01, * p<0.05

Table 2.3. Logistic Regression of Bachelor's Degree Completion on Amount of PLUS Borrowed

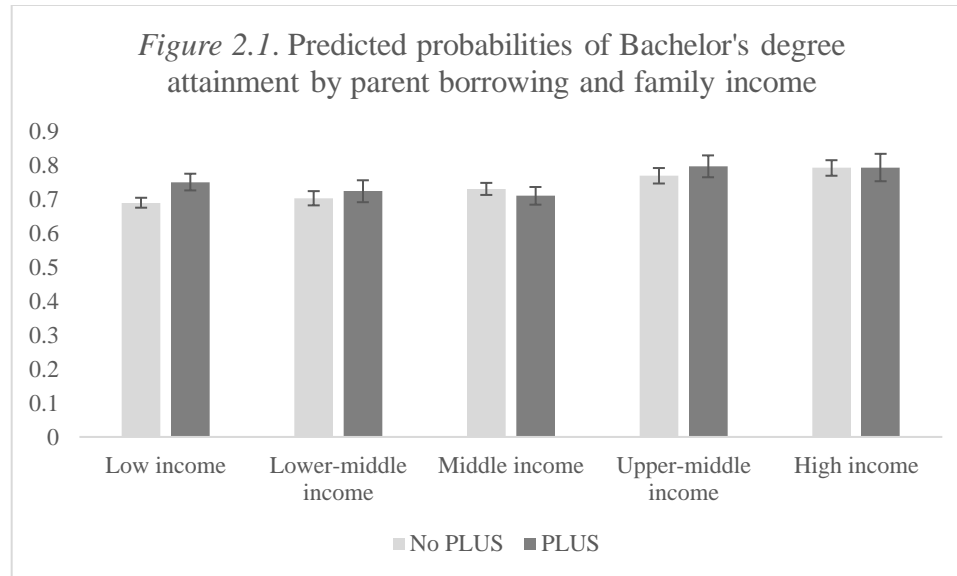
	Column 1	Column 2	Column 3	Column 4
	PLUS (\$1000)		PLUS (\$1000), Squared	
VARIABLES	Odds ratios	Odds ratios		Odds ratios
Parent borrowing	1.0100 (0.01)	1.0040 (0.01)	1.0200 (0.02)	1.0200 (0.03)
Parent borrowing, Squared			0.9996 (0.001)	0.9999 (0.001)
Student & Institutional Characteristics		X		X

Notes: Ns rounded per NCES disclosure rules; Standard errors in parentheses; All models control for students' gender, race/ethnicity, SAT math score, college grade point average, enrollment status, hours worked per week, field of study, living arrangements; Parents' income, educational attainment, marital status, home ownership status; College sector, selectivity, HBCU status; grant aid, student loans, and parent spending; *** p<0.001, ** p<0.01, * p<0.05

Table 2.4. Logistic Regression of Bachelor's Degree Completion on Parent Borrowing by Parents' Income

VARIABLES	Ever PLUS	PLUS (\$1000)
	Odds ratio	Odds ratio
Parent borrowing	0.85 (0.17)	0.98 (0.02)
Parents' income (Middle income omitted)		
Low income, Less than \$50,000	0.79 (0.13)	0.79 (0.13)
Low-middle income, \$50,000 - 65,000	0.83 (0.14)	0.83 (0.14)
Upper-middle income, \$98,001 - 140,900	1.27 (0.25)	1.20 (0.21)
High income, \$140,901+	1.48 (0.31)	1.43 (0.29)
Parent borrowing x Parents' income (Middle income omitted)		
Parent borrowing x Low	1.70* (0.44)	1.04 (0.02)
Parent borrowing x Lower-middle	1.33 (0.43)	1.03 (0.03)
Parent borrowing x Upper-middle	1.41 (0.54)	1.06* (0.03)
Parent borrowing x High income	1.20 (0.55)	1.03 (0.03)
Constant	0.03*** (0.01)	0.02*** (0.01)
Observations	5,470	5,470

Notes: Ns rounded per NCES disclosure rules; Standard errors in parentheses; All models control for students' gender, race/ethnicity, SAT math score; Parents' educational attainment, marital status, home ownership status; College sector, selectivity; Merit aid, Need-based aid, Student loans, financial help from parents; *** p<0.001, ** p<0.01, * p<0.05



Notes: Figure controls for students' gender, race/ethnicity, SAT math score; Parents' educational attainment, marital status, home ownership status; College sector, selectivity; Merit aid, Need-based aid, Student loans, financial help from parents. They are estimated from Model 1 in Table 2.4.

CHAPTER 3

Young Adults' Financial Wellbeing: Parents' Educational Debt and Intergenerational Support

Abstract

Intergenerational family support is increasingly common during young adulthood, with parents supporting children's financial wellbeing and helping them avoid financial hardship. Parents' material and emotional support to their young adult children depends on their financial circumstances, but there has been little attention to the role of parent borrowing. This study uses three measures of financial wellbeing, youth's self-reported financial stress, their non-mortgage debt, and their debt-to-income ratios at age 26 in the Educational Longitudinal Survey: 2002, I find that the children of parent borrowers have stronger financial wellbeing, but higher amounts of parent PLUS loans reduce youths' financial wellbeing. These findings are observed for families across the income distribution and are consistent. This study extends existing theories of intergenerational support by considering the role of debt and provides additional evidence suggesting that financing college has reshaped family life.

Introduction

As four-year, public college net price reached an average of \$15,380 a year and Americans held \$1.5 trillion in educational debt (Federal Reserve Bank of New York 2019; Ma et al. 2019), there is growing acknowledgment that family life has been re-organized around the intergenerational project of financing college with debt (Hamilton 2016; Tevington et al. 2017; Zaloom 2019). Debt, including educational loans, compromises borrowers' financial wellbeing, in part because debt leads to financial stress and hardship (Drentea and Reynolds 2015; Dwyer 2018), but there has been little investigation into the intergenerational ramifications of educational debt. Parents' financial circumstances are transmitted intergenerationally, influencing young adults' wellbeing through the provision of material support and the transmission of financial stress across generations (Fingerman et al. 2020; Schoeni and Ross 2005; Swartz et al. 2011). With parent borrowing becoming increasingly common in the last 30 years (National Center for Education Statistics 2016), it is critical to understand whether it has financial impacts across generational lines. Doing so demonstrates the risks that parents' use of educational debt has for young adult children and provides evidence of how debt and college costs shape intergenerational family relationships through young adulthood.

Both policymakers and researchers increasingly agree that student loans complicate borrowers' lives and finances post-college. Yet, parent borrowers are often lost in current policy conversations around college affordability and debt cancellation because much of the urgency is understandably around supporting youth as they embark on adulthood. In addition, parent borrowers often have high incomes (Walsemann and Ailshire 2016), leading to the assumption that there are minimal, if any, financial

ramifications to debt for either parents or their young adult children. Investigating potential consequences of parent borrowing for young adults' financial wellbeing demonstrates that the financial burden of paying for college has long-term, intergenerational implications. Policies that ignore parents and their debt may then compromise young adults' wellbeing. In addition, by considering whether these financial consequences are experienced across households regardless of means, this study provides evidence that more expansive debt cancellation policies would still benefit youth and their families.

Drawing on life course theories that elaborate the many ways parents' and children's lives remained linked throughout the life course, this study investigates how, why, and for whom parent borrowing is associated with young adult children's financial wellbeing. Some theories of intergenerational support suggest that young adult children of parent borrowers will have better financial wellbeing because children have higher educational attainment and less debt when parents borrow. If parents across the income distribution are motivated to borrow for different reasons (Friedline et al. 2017; Hamilton 2016; Perna 2008), then these benefits may vary for students across the income distribution. Alternatively, children may have lower financial wellbeing when their parents borrow because the amount and direction of material parent-child support will be affected by their parents' debt (Fingerman et al. 2020; Swartz 2009) and the impact will be greatest for young adults' from families with fewer resources. Similarly, the family stress model also predicts that young adults' financial wellbeing will be negatively impacted if their parents borrow, but instead explains this as a function of how debt reshapes parent-child relationships (Conger, Rueter, and Conger 2000; Fingerman et al.

2020) and expects that these changes to parent-child relationships will be experienced by families across the income distribution.

By focusing on parent borrowing for college expenses through the Parent Loans for Undergraduate Students (PLUS) program, this study contributes to discussions on the consequences of debt for families' lives. In the context of high college costs and educational debt, investigating whether and how parent borrowing influences young adults' financial wellbeing contributes to our understanding of how financing college with debt reshapes family relationships and reproduces intergenerational inequality. Using longitudinal data on parent borrowing over children's undergraduate years and their children's financial wellbeing at age 26, I find that higher levels of parent debt are associated with greater financial stress, higher levels of non-mortgage debt, and higher median debt-to-income ratios for young adults, but the children of parent borrowers are less financially strained than those whose parents do not borrow. In addition, even though many studies of parent borrowing focus on middle-income households (Tevington et al. 2017; Zaloom 2019), my findings show that educational debt is consequential for families across the income distribution. My findings give empirical support to public assertions that educational debt is a "family crisis" (Konczal 2019) with implications for young adults' financial wellbeing.

Financial Wellbeing and Debt in Young Adulthood

Life course scholars argue that individual experiences depend on the unique intersection of historical context, age, and inter- and intra-generational relationships (Elder 1985, 1994). Young adulthood is a pivotal period in the life course when youth establish themselves by reaching adult milestones, like full-time employment,

educational attainment, marriage, and homeownership (Benson and Furstenberg 2006; Furstenberg, Rumbaut, and Settersten 2005; Settersten, Ottusch, and Schneider 2015), that can build financial security. Yet, young adulthood can also be financially precarious. Young adults' have comparatively lower incomes and few assets (Wolff 2010) and some adult milestones, like having children, can sometimes cause financial difficulties (Maroto 2018). For youth who came of age in the late 2000s and early 2010s in the aftermath of the Great Recession of 2007 to 2009, young adulthood became even more financially fraught because of its disproportionate impact on young adults' economic circumstances (Bell and Blanchflower 2011; Crosnoe 2014; Furstenberg and Kennedy 2016; Houle 2014a). As a result, there is growing attention to young adults' financial wellbeing (Sorgente and Lanz 2017), which can be measured with either subjective or objective experiences of financial hardship (Bricker and Thompson 2016; Chapman and Dearden 2017; Fan and Chatterjee 2019; Harris et al. 2010; Keister and Lee 2014; Sweet et al. 2013; Wolff 2010, 2013). These measures are often related to one another, but capture different dimensions of how financial hardship influences a person's life (Sorgente and Lanz 2017; Sweet et al. 2013).

Objective measures quantify financial burdens, speaking to the material deprivations of financial hardship (Arber, Fenn, and Meadows 2014; Bricker and Thompson 2016; Fan and Chatterjee 2019; Sweet et al. 2013). Along with poverty status, income, and savings, total debt and debt-to-income ratios are a commonly-used metric for assessing objective financial hardship by providing insight around the difficulties of repaying debt (Bricker and Thompson 2016; Fan and Chatterjee 2019; Sorgente and Lanz 2017; Sweet et al. 2013). Total debt is most often used to document financial hardships

for young people who often have lower incomes and have had fewer opportunities to accumulate assets (Addo 2014; Houle 2014a; Houle and Addo 2018). Indeed, debt in young adulthood has implications for youths' attainment of adult milestones, like marriage, educational attainment, and home ownership (Addo 2014; Bozick and Estacion 2014; Dwyer et al. 2012; Houle and Warner 2017), which all impact youths' ability to build wealth. Indeed, higher levels of student loans and higher education debt-to-income ratios among Black youth are partly responsible for the continued growth in the racial wealth gap (Addo et al. 2016; Houle and Addo 2018). Altogether, youths' debt loads and debt-to-income ratios together provide an objective measure of financial difficulties youth may face in managing their debt.

In contrast, subjective measures of financial wellbeing and hardship speak to the psychological toll that debt, loss of income, or other negative financial experiences can wreak on an individual (Arber et al. 2014; Cherney et al. 2020; Fan and Chatterjee 2019; Kirkpatrick Johnson 2013; Sweet et al. 2013). Perceptions of one's financial situation influence decisions about life and finances and is associated with wellbeing in other facets of a person's life (Cherney et al. 2020). For example, financial stress is associated with academic success and physical and psychological wellbeing (Drentea 2000; Drentea and Reynolds 2015; Sorgente and Lanz 2017), all of which have material consequences as well. Subjective measures of financial hardship are often captured by asking individuals to rate their financial stress or their satisfaction with their financial situation (Bea and Yi 2019; Cherney et al. 2020; Drentea 2000; Serido et al. 2010). Both subjective and objective measure of financial wellbeing provide insight into young

adults' security and the economic hardship of transitioning to adulthood in a time of widening inequality and high debt.

Despite sometimes being referred to as “wealth-building” debt that promotes financial security through a college degree (Dwyer 2018), even educational debt sometimes leads to financial hardship. Among low- and moderate-income households, those with student debt are more likely to miss housing or bill payments, experience food insecurity, skip necessary medical or dental care, and are more likely to overdraw an account (Bricker and Thompson 2016; Despard et al. 2016). Notably, some of these associations are only found for educational debt (Bricker and Thompson 2016), suggesting that student loans are unique in the strain they cause borrowers. Beyond its material consequences, debt, including student loans, complicate quality of life in other ways. Borrowers report lower life satisfaction, psychological wellbeing, and financial stress and satisfaction (Archuleta et al. 2013; Cherney et al. 2020; Drentea 2000; Drentea and Reynolds 2015; Kim and Chatterjee 2019). In addition, there is evidence that borrowing significant amounts inhibits college completion (Dowd and Coury 2006; Dwyer et al. 2012), which has the potential to deepen material insecurity and financial stress (Despard et al. 2016). Overall, educational debt generates financial insecurity in borrowers' lives in both material and immaterial ways.

Although young adult college students are more likely to use educational debt as compared to their parents (National Center for Education Statistics 2020), parents increasingly turn to educational debt to help finance their children's opportunities. Facing rising college costs and stagnating incomes and grant support (Ma et al. 2018; Perna and Li 2006; Radwin and Wei 2015), educational debt has become an increasingly important

way to finance college. Indeed, parent borrowing through the federally-financed Parent Loans for Undergraduate Students (PLUS) grew by 43 percent between the 1999-2000 academic year and the 2015-16 school year (National Center for Education Statistics 2020). Although parents may borrow from a number of sources to help finance their children's postsecondary expenses, PLUS are the most commonly used (Sallie Mae 2019), in part because they often have more lenient terms than private debt and because they are more accessible to parents with lower credit or who do not own homes to refinance (U.S. Department of Education 2019a, 2019b). Despite the increase in parents' educational borrowing through PLUS over the last 20 years, there has been less investigation into whether or not it has intergenerational implications for financial well-being.

Parent PLUS Loans and Intergenerational Support in Young Adulthood

Various theories of intergenerational support suggest that parents provide assistance to their young adult children for a number of reasons. First, they may offer support for altruistic reasons and care for the success and well-being of their child (Fingerman et al. 2009; Fingerman, Cheng, Birditt, et al. 2012). Alternatively, parents may help their children to secure support for themselves later in life (Fingerman, Cheng, Tighe, et al. 2012; Fingerman et al. 2009; Swartz 2009) or because parents are invested in their children's success because it represents their own success as parents (Fingerman, Cheng, Birditt, et al. 2012; Fingerman et al. 2009). Regardless of the reason, parents continue to provide support for their children as they age, often even after young adult children leave college (Fingerman et al. 2020; Hartnett et al. 2013; Swartz 2009; Swartz et al. 2011). Parents provide support through cash contributions or direct transfers, in-

kind support, like food and housing, as well as emotional support (Britton 2013; Fingerman et al. 2020; Hartnett et al. 2013; Swartz 2009; Swartz et al. 2011; Turley 2009). Similarly, parents borrow to support their children's educational attainment and to reduce their child's own debt burdens (Friedline et al. 2017; Hamilton 2016; McCabe and Jackson 2016; Perna 2008; Tevington et al. 2017). These motivations and the unique role of PLUS loans to finance children's college expenses provides an opportunity to draw on life course theories and investigate the impact of debt on financial well-being from an intergenerational perspective.

Economic sociologists refer to debt as a "double-edged sword" because it is both a resource and introduces risk (Dwyer 2018; Dwyer et al. 2012; Quadlin and Rudel 2015). On one hand, debt allows borrowers to access wealth-building opportunities, like homeownership or a college degree, that may lead to better financial well-being. On the other, as described above, debt can also hurt financial well-being. When parents use debt as a way to provide intergenerational support, debt's risks and rewards may be experienced by their children. As parents' increasingly use educational debt, it is critical to investigate whether or not there are intergenerational implications for youth's financial well-being.

Parent Borrowing through PLUS Supports Youth's Financial Well-being

Family financial support in the form of cash contributions or direct transfers preserves class advantages and helps children avoid, or minimize, hardship (Fingerman et al. 2020; Schoeni and Ross 2005; Swartz 2009; Swartz et al. 2011) providing greater financial security for young adult children. For example, young adult children who received higher levels of sustained material support from their parents experienced less

financial stress and were less likely to be in poverty (Bea and Yi 2019). In addition, young adult children who received financial support from their parents have lower debt-to-income ratios (Baum and Schwartz 2006; Schoeni and Ross 2005). Similarly, receiving financial support from parents during young adulthood is associated with stronger parent-child relationships (Kirkpatrick Johnson 2013). Although it is possible the causal order works in reverse, stronger parent-child relationships may help youth navigate difficult financial situations. In addition, children who receive financial support from their parents in the past may feel confident that they can ask for help again in the future (Hamilton 2016). Regardless of whether parents continue to offer material support, these youth may feel less financial stress. As a result, parents' support can help young adults avoid financial hardship and promote their financial security.

Parent borrowing through the PLUS loan program may similarly lead to higher financial well-being among young adult children. For example, parent borrowing is associated with greater access to four year colleges, especially among low-income and Black students (Johnson et al. 2019; Kargar and Mann 2018; United Negro College Fund 2017). Evidence shows that low-income students are more likely to persist and complete college when their parents borrow through PLUS (McClure 2017). Given that a college degree is critical for labor market success, young adult children of parent borrowers, especially low-income children, may have higher financial well-being. In addition, parents across the income distribution are motivated to help their children avoid, or reduce their reliance on loans (Friedline et al. 2017; McCabe and Jackson 2016). To do this, some parents borrow on their children's behalf (Hamilton 2016; McCabe and Jackson 2016). In other words, parent borrowing may improve young adult children's

financial well-being if it reduces their debt loads. In addition, educational debt borrowed for parents' own college costs are associated with reduced socioemotional issues among young children between the ages of 5 and 14 (Berger and Houle 2016), suggesting that children may not feel financially stressed when their parents borrow.

Parent Borrowing through PLUS may Hurt Youth's Financial Well-being

Alternatively, parent borrowing may create significant financial strain for parents and their children. For example, parents can borrow considerable amounts, \$27,170 on average over the course of their children's enrollment (National Center for Education Statistics 2020), which may be difficult for some borrowers to manage (Baum et al. 2019). In addition, the terms of parent borrowing often expose parents to risk. Parents face higher interest rates than their children (Federal Student Aid 2020) and if they fail to repay their educational debt, their wages, tax refunds, and social security may be garnished (U.S. Department of Education 2019b). Moreover, when individuals struggle to repay their loans, especially those with more punitive repayment terms, their credit scores are further jeopardized (Fourcade and Healy 2013). Simply repaying the debt they borrowed may require considerable resources from parents, diverting them from young adult children or creating stress that is shared across generations.

Considerable research shows that families with more resources are better positioned to provide material support to their young adult children (Fingerman et al. 2020; Kornrich and Furstenberg 2013; Rauscher 2016; Schoeni and Ross 2005; Swartz 2009), reproducing class dis/advantages across generations. For example, parents with higher incomes provide more material support to their young adult children in the form of cash contributions (Kornrich and Furstenberg 2013; Rauscher 2016; Schoeni and Ross

2005; Swartz 2009; Swartz et al. 2011). Similarly, the young adult children of married parents are more likely to receive both cash and in-kind contributions, like groceries and accommodations, than children whose parents are single, divorced, or widowed (Henretta et al. 2012; Schoeni and Ross 2005; Swartz 2009; Swartz et al. 2011). In addition, parents with fewer resources are more likely to need financial support from their young adult children (Smits, van Gaalen, and Mulder 2010) so youth from low-income families are more likely to provide cash contributions to their parents (Hamilton 2016; Swartz 2009). Given that debt may limit the amount of material support that parents can provide their children, the patterns in parent-child material support observed among resource-constrained families may also be observed among parent borrowers. In other words, parent borrowers' resources may be diverted to paying off their debt, potentially leading to greater financial hardship for their young adult children via different degrees and direction of intergenerational material support.

Family stress theories contend that financial circumstances experienced by a parent or child can be transmitted to the other generation through their relationship quality (Conger et al. 2000; Fingerman et al. 2020). The family stress model has identified a number of ways that economic stress compromises parent-child relationships, including increased unsupportive parenting practices and reduction in the quantity and quality of time spent with children (Iruka, LaForett, and Odom 2012; Masarik and Conger 2017; Newland et al. 2013). The family stress model was first identified in adolescent outcomes and has since been shown in younger children as well (Conger et al. 2000; Masarik and Conger 2017), though there has been less attention to whether it applies to young adult children who may reside outside the natal home. However, there is

evidence that the family stress model applies in reverse, with adult children's economic stress affecting parents' wellbeing (Fingerman, Cheng, Birditt, et al. 2012; Fingerman et al. 2020; Kalmijn and De Graaf 2012). This suggests that financial wellbeing influences parent-child relationship quality even when children have reached adulthood, though the current study will be among the first to consider whether parents' financial circumstances generate difficulties for their young adult children.

Parents' educational debt may affect their relationship with their young adult child for a number of reasons. First, parent borrowers may indicate that they will be less forthcoming with financial support post-college. Parents who invested substantially in their children's college education with debt, a second job, overtime shifts, or depleted retirement accounts report immense frustration with their young adult children (Hamilton 2016). They describe plans to have frank conversations with their children about future financial support. Regardless of whether parents actually withdraw support, this may generate financial stress and even material hardship for youth. Even if parents do not say anything to their young adult children, debt may still influence their relationship.

Qualitative work on families navigating college finances documents that college students are sometimes aware of their parents' financial sacrifices, even when parents attempt to shield their children from the families' financial realities (Hamilton 2016; Zaloom 2019). Carrying debt is stressful for borrowers and it undermines the quality of parent-child relationships (Cherney et al. 2020; Drentea 2000; Drentea and Reynolds 2015), which is directly linked to young adult's wellbeing (Serido et al. 2010). These stresses associated with parent borrowing may strain parents' relationship with their young adult children, harming relationship quality and the transmission of financial advice that would help

youth address any economic hurdles they may face. Thus, parent borrowing may alter parents' relationships with their young adult children in a number of ways that could contribute to elevated levels of financial stress and hardship among young adults.

Regardless of whether parent PLUS loans influence young adult's financial well-being through material support or relationship quality, I hypothesize that:

Hypothesis 1A: The children of parent borrowers have better financial wellbeing than their peers who do not borrow because of the rewards of debt.

Hypothesis 1B: In contrast, I expect that increasing amounts of parent PLUS loan debt will be associated with lower youth financial wellbeing because of the risks of borrowing.

Family Income and Young Adult Financial Hardship

Existing investigations of the financial consequences of educational debt and how families manage college costs have largely focused on middle-income families (Tevington et al. 2017; Zaloom 2019). Yet, resources, norms, and reasons for using debt may differ across families, which influence intergenerational financial support in ways that may impact the relationship between parent borrowing and youth financial hardship. First, high-income families have more resources to continue to support young adult children and will be more likely to continue to provide financial support and will be less likely to need financial support of their own (Maroto 2018; Schoeni and Ross 2005; Smits et al. 2010; Swartz 2009). Second, norms about when young adults should be financially independent vary across social class, with more advantaged families having later deadlines (Cepa and Furstenberg 2021; Furstenberg and Kennedy 2016). As a result, parents may be more willing to provide financial support to their young adult children for longer, assuming that they have the resources to do so. Altogether, high-income youth

may be more insulated from the impact of parent borrowing on their financial wellbeing because they will be more likely to continue to receive financial support regardless of whether their parents borrowed.

Alternatively, there is some qualitative evidence that high-income parents are mindful of the financial hardship educational debt may cause their children in young adulthood (Friedline et al. 2017; Hamilton 2016; Perna 2008). These parents hope to help their children minimize or avoid educational debt altogether and PLUS loans may be a way for parents to shield children from educational debt. If this is the case, then youth from high-income families may see greater benefits in terms of their financial wellbeing when their parents use PLUS relative to youth from families with lower incomes.

Finally, parent borrowing's impact on young adults' financial wellbeing might not vary depending on family income. For example, consumer debt is associated with worse mental health outcomes for borrowers across the income distribution (Berger, Collins, and Cuesta 2016; Hodson, Dwyer, and Neilson 2014). Similarly, financial stress is transmitted intergenerationally, regardless of their means (Fingerman, Cheng, Birditt, et al. 2012; Hamilton 2016; Kalmijn and De Graaf 2012; Masarik and Conger 2017). As a result, youths' financial stress and objective wellbeing may be negatively impacted by parent borrowing regardless of income. Investigating the association between parent borrowing and young adult financial wellbeing across the income distribution provides evidence into how widespread the effects of college costs and educational debt have been on American family life.

Given these two possibilities, I hypothesize that:

Hypothesis 2: Parent borrowing will differ across the income distribution,

with students from high-income parents less sensitive to their parents' PLUS loan debt.

Data and Methods

Data and Sample

This paper uses data from the first and third waves of the restricted data from the National Center for Education Statistics' Educational Longitudinal Survey, 2002 (ELS: 2002) as well as linked data from families' Free Application for Student Aid (FAFSA). The ELS:2002 dataset is a multistage survey that randomly sampled a nationally-representative sample of 16,200²³ 10th-grade students within a national sample of about 750 public, charter, Catholic, and other private high schools from all 50 U.S. states plus the District of Columbia in 2002. ELS specifically oversampled Asian, Latinx, and private high school students. In 2004, ELS re-surveyed students and refreshed the sample to ensure that it was nationally-representative of high school seniors in 2004. The third wave resurveyed 78% of the original sample between July 2012 and February 2013 (Ingels 2014), when they were about 26 years old, an age at which most Americans expect youth to be financially independent (Cepa and Furstenberg 2021). During the third survey wave, ELS also collected postsecondary transcripts so I am able to determine current enrollment and educational attainment at age 26.

For conceptual clarity, I restrict analyses to youth who attended a four-year college by 2012 (60% of sample attended a four-year college). Similarly, because applying to Federal Application for Student Aid (FAFSA) is often the first step to accessing a PLUS loan (U.S. Department of Education 2019b; Zaloom 2019), I restrict

²³ All Ns rounded to the nearest tens per NCES disclosure rules.

my analyses to those who submitted an application (53%) to improve comparability between borrowers and non-borrowers. By restricting the sample in this way, I am able to more accurately compare parents who borrow and to parents who could, but do not. My FAFSA variable comes from administrative FAFSA application files linked to ELS by NCES. Students who cannot be linked are coded as not having applied to FAFSA. In addition, I applied listwise deletion when there are missing observations for respondents' race/ethnicity (6%), debt-to-income ratio at age 26 (14%), and financial stress at age 26 (14%)²⁴. For the remaining missing values, I performed multiple imputation using the chained command in Stata 13 with 5 imputations. Specifically, I imputed parents' marital status (5% missing), young adult's education status (0.2% missing), young adult's employment status (0.9%), and parent borrowing (11%). The full analytic sample is 5,010 observations.

²⁴ Because there are no appropriate auxiliary variables for my two dependent variables of interest, I do not include these observations in my imputations (Allison 2001). Appendix 3A compares those who are missing on these two variables to those who are not. Those who did not answer the financial stress question may be more financially stressed according to a few measures. They are more likely to not have a Bachelor's degree and not be enrolled, less likely to hold a BA and not be enrolled, and more likely to hold a BA but be enrolled. They have much lower income and are less likely to work full-time. They are more likely to be single or divorced or separated, likely to be white and more likely to be black or Asian, more likely to have low-income parents, and less likely to come from upper-middle income families. On the other hand, those who did not answer the financial stress question are more likely to have children or be male, suggesting lower levels of financial stress. Those missing are less likely to have parents who borrowed, which suggests that findings comparing the children of parent borrowers to those who did not borrow may be overly positive. In addition, I perform multiple imputation three different ways to compare outcomes. First, I delete the cases with missing values for my two financial stress variables and then impute the independent variables, including financial stress variables among those used to impute missing independent variable values. Second, I impute financial stress variables along with the independent variables and then drop the cases that were originally missing for financial stress variables. I also impute financial stress measures along with the independent variables and keep all cases in the analytic sample. Unlike the first method, using the second technique finds no relationship between dichotomous PLUS loans on financial stress but all other findings remain consistent. Comparing the third method to the first, the third method does not find a relationship between dichotomous PLUS loan variable and median debt-to-income ratio, but all other findings remain consistent with the first imputation technique. Given this and the recommended imputation method is consistent with the first imputation technique, I present those findings. Finally, among my analytic sample--those who entered a four-year college and applied for FAFSA-- a smaller proportion of the dependent variables are missing (8% for subjective financial stress and 9% for debt-to-income ratios).

Variables

Parent Borrowing. The ELS:2002 data includes a continuous variable for the cumulative amount of loans parents borrowed through the federal Parent Loans for Undergraduate Students (PLUS) program by the third survey wave. To compare the children of parent borrowers to the financial hardship experiences of those whose parents do not, I dichotomize this to whether or not a parent borrowed. In addition, I investigate whether young adult's financial hardship varies by the amount parents borrowed. I simultaneously take into account both who borrows and how much parents borrow using a spline function, which allows me to incorporate both functional forms of debt in a single model (Marsh and Cormier 2002). Because of the risks and rewards of debt and to allow the interpretation of the effects of debt within and across levels of loans, this technique is often employed in investigating the effect of debt on some outcome (Hodson et al. 2014; Quadlin and Rudel 2015)²⁵. To ease interpretation, I log the cumulative amount of PLUS borrowed so findings can be interpreted as constant percent changes.

Financial Well-being. I consider three different operationalizations for financial well-being. The first is a subjective measure of financial well-being that was asked during the third survey wave. ELS:2002 posed the question: "Many young adults experience financial problems. On a scale of 1 to 5, where 1 means 'not at all stressful' and 5 means 'extremely stressful,' how much stress have you felt in meeting your financial obligations

²⁵ I perform a robustness check of the spline in two different ways. First, I include the dichotomous measure for PLUS and the continuous measure in the same equation. Findings remain consistent to the spline and I use this operationalization to generate predicted values of financial wellbeing outcomes because these results can be graphed unlike those using the spline (see Figures 3.1-3.6 and Appendix 3B). In addition, I create another measure for PLUS that divides the amount of debt into equal quintiles and compares to those without any PLUS debt. These findings differ slightly from those observed in the spline for financial stress and debt-to-income ratios, but are consistent to findings observed in non-mortgage debt (see Appendix 3C).

during the past year?” A score of three was considered to be “moderately stressful.”

In addition, I consider two objective measures of young adults’ financial well-being. Although there are many objective measures used by policymakers, researchers, and practitioners, debt-to-income ratio reflects whether or not, and to what degree, an individual can manage their debt load. If debt is manageable, then an individual is more likely to avoid late fees, repay debt without requiring additional debt, and avoid bankruptcy (Fan and Chatterjee 2019; Parker et al. 2016). For this study, I use non-mortgage debt at age 26 and a debt-to-income ratio that divides the amount of non-housing debt a young adult owes in the third survey wave by their personal income in that same year²⁶. Youth with no income have missing debt-to-income ratios and are not included in the study (5%), which may deflate my study’s debt-to-income ratio relative to all youth who ever attended four-year college.

Background Characteristics. Because parent borrowing is most common and highest among more advantaged families (Cepa, ND), it is critical to take youth and their family characteristics into account when investigating outcomes of parent borrowing. I consider parents’ income with a five-part measure from parents’ self-reports during the base year survey in 2002. Although this is a decade prior to when youth’s financial well-being is collected, this is the most complete measure available in the ELS data. The lowest income group are families with less than \$50,000 who are among those most likely to receive Pell grants and be less likely to require PLUS loans (U.S. Department of Education 2005). Low-middle income parents are those who make between \$50,001 and \$75,000, middle-income parents earn between \$75,000 and \$100,000, upper-middle

²⁶ Appendix 3D shows the distribution of the debt-to-income ratio, which is considerably skewed.

income households have incomes between \$100,000 and \$200,000, and high-income families earn \$200,000 or more. These groupings reflect the coding of the survey question asked of parents. As another measure of family resources, I include whether or not either parent earned a college degree. In addition, previous work found that parent support varies by family structure (Henretta et al. 2012; Swartz 2009), so I compare youth whose parents are married or partnered to those whose parents are single, widowed, or divorced/separated.

Similarly, youths' circumstances will directly influence their financial wellbeing so I consider their economic situation. First, young adults with a college degree are often in stronger economic positions than those without so I take into account young adults' Bachelor's degree completion. In addition, I take into account those who are currently enrolled since this may negatively impact their financial well-being. Labor market experiences influence financial well-being as well so I consider youths' self-reported income at age 26 when investigating financial stress, but I replace this with a dichotomous indicator for full versus part-time work when looking at youth debt-to-income ratios. Finally, for analyses of financial stress, I include a measure of the amount youth report that they currently pay towards their student loan balance since previous work showed that this directly influenced financial stress (Bricker and Thompson 2016; Cherney et al. 2020).

Next, young adult family milestones have also been tied to their financial well-being. I consider youths' self-reported relationship status by comparing those who are single to those who are married/partnered and divorced/separated. I also account for whether or not the young adult has any children.

Finally, previous work connected students' demographic characteristics to financial wellbeing so I include an indicator for self-reported gender and race or ethnicity at the base year of the survey. I compare women's financial wellbeing to men. In addition, I compare white young adult's financial well-being to young adults who are Black, Hispanic, Asian, or report coming from some other racial and ethnic background.

Methods

To examine the effect of parent borrowing on young adults' financial wellbeing, I use ordinary least-squares regression to predict financial stress, debt-to-income ratios, and non-mortgage debt²⁷. Given the skewed distribution for debt-to-income ratio (Chiteji 2007; Houle 2014a), I also conduct conditional quantile regressions to compare the median debt-to-income across groups. I present two different models. The first incorporates parents' characteristics and the second includes children's. Next, I consider whether the effect of parent borrowing on financial wellbeing differs depending on background characteristics since families with fewer financial resources may be more strained by parent debt than more advantaged families. To investigate this, I interact parent borrowing with parents' income using the full model with both children and parents' characteristics.

Findings

Descriptive Findings

Table 3.1 presents descriptive statistics for the full sample of young adults who attended a four-year college and applied to FAFSA and compares those whose parents

²⁷ For financial stress, I also perform an ordered logit analysis and the results remain consistent to those with ordinary least squares.

borrowed through the PLUS program to those whose parents did not. The average financial stress in the sample is fairly high at 3.18, meaning that youth feel more than “moderate stress” about meeting their financial obligations in the past year. Similarly, young adults’ debt to-income-ratios are high, requiring almost 5 years of their household earnings in order to repay their debt. In addition, young adults hold almost \$40,000 of non-mortgage debt. Yet, young adult children of parent borrowers had similar levels of financial stress, debt-to-income ratios, and non-mortgage debt as those whose parents did not borrow. Although these descriptive findings indicate that there is little difference in youth financial hardship or parent-child financial support among those whose parents borrowed compared to those who did not, parent borrowers are often more advantaged (Walsemann and Ailshire 2016) and some children of parent borrowers are more likely to graduate (Cepa ND), underscoring the importance of taking both youth and their parents’ characteristics into account in multivariate analyses.

Indeed, young adult children of parent borrowers come from more advantaged families according to a number of measures. First, although 44% of the sample is categorized as low-income (income of \$50,000 or less), only 32% of parent borrowers have incomes that fall in this range. Instead, the young adult children of parent borrowers were more likely to grow up in middle and upper-middle families. In addition, the children of parent borrowers are more likely to come from two-parent households (86% versus 78%) and more likely to have at least one parent who completed college (57% versus 48%). Together, this reinforces the importance of accounting for parents’ resources in investigations of young adults’ financial hardship.

Just as parents’ characteristics likely play a role in youths’ financial hardship

experiences, young adult's own economic, demographic, and family experiences may also influence financial wellbeing (Houle 2014a). For example, completing education is critical for labor market opportunities and 43% of the sample completed a Bachelor's degree and another 15% completed a Bachelor's degree and are pursuing additional postsecondary credentials. Over one-fifth of the sample are still enrolled in college, and another one-fifth are not enrolled and do not have a Bachelor's degree. Three-quarters of young adults in the sample work full time and they have an average income of \$28,250. The children of parent borrowers are more advantaged on many of these economic indicators. They are more likely to hold a Bachelor's degree (51%) and they are less likely to be enrolled, so they are also more likely to work-full time (79%) and have higher incomes \$30,600.

In addition, family milestones shape young adults' experiences with financial hardship (Houle 2014a). Almost half of the sample is single, 51% are married, and 2% are divorced or separated, though divorce or separation is less common among the children of parent borrowers. Similarly, 23% of the young adults are parents themselves, but the children of parent borrowers are less likely to have children of their own (15% versus 25%). Finally, demographic characteristics play a role in financial hardship because of racial and gender disparities in opportunities and labor markets. The children of parent borrowers are more likely to be white than the children of parent non-borrowers (74% versus 65%) and less likely to identify as Black (9% versus 15%)²⁸. Overall, despite youth reporting similar financial hardship experiences regardless of parent

²⁸Most research finds that Black families are more likely to hold educational debt, but Black youth were also less likely to respond to the third survey wave so they are not included in this sample (Ingels 2014).

borrowing, young adult's characteristics indicate that those whose parents borrowed for college are more advantaged than those whose parents did not, again underscoring the need for multivariate analyses that can take these advantages into account.

Findings from Ordinary Least Squares and Quantile Regressions

Regressing youths' financial stress on parent borrowing after accounting for parent and youth characteristics, Table 3.2 focuses on the subjective measure of youth financial hardship. As a reminder, the regression models operationalize PLUS loans with a spline function, incorporating whether or not parents borrowed and the amount parents borrowed as two different variables in the same model. Column 1 incorporates parents' background characteristics, but does not find an association between either measure of PLUS loans and young adult children's financial stress. In contrast, once young adult and parent characteristics are incorporated (Column 2), the children of parent borrowers report less financial stress ($\beta = -0.85$ points, with a lower confidence bound of -1.66 and an upper bound of -.03). This is equivalent to two-thirds of a standard deviation decrease in financial stress. In addition, higher amounts of PLUS loan debt are associated with a small increase in the amount of youth financial stress. Specifically, this translates to a small, but statistically significant 1% increase in financial stress when parent PLUS debt increases by 10 percent. This is equivalent to an 8.6% standard deviation increase in financial stress. However, youth's non mortgage debt appears to mediate the relationship between parent borrowing and youth's subjective financial stress (analyses available upon request).

Across the models, some parent and student characteristics are associated with financial stress in ways consistent with the literature. For example, parents' marital status

is associated with youths' financial stress, with children of single or divorced/separated parents more financially stressed than the children from two-parent households. In addition, consistent with the literature citing less favorable labor market experiences and higher educational debt (Dwyer et al. 2013; Houle 2014a), young adult women report higher levels of financial stress than men. Similarly, likely reflecting a discriminatory labor market and higher levels of debt, Black youth report greater financial stress, but this is attenuated once youths' characteristics are incorporated. In contrast, young adults with a Bachelor's degree and those currently enrolled in undergraduate classes are insulated from financial stress, reporting lower levels of financial stress than those who are not enrolled and do not have a Bachelor's degree. Similarly, higher incomes in young adulthood are associated with lower levels of stress. Young adult's family milestones also influence feelings of financial stress. Those who are single feel less stressed than young adults who are divorced or separated, but more financial stress than married or partnered youth. In addition, having children as a 26 year-old is associated with greater financial stress. Altogether, these patterns are largely consistent with those previously observed in the literature.

Table 3.3 documents whether parent borrowing is associated with two objective measures of financial hardship, youths' non-mortgage debt and their debt-to-income ratio. Again, I add to youth characteristics after incorporating parents'. In addition, I use a spline to compare outcomes for the children of parent borrowers as well as the amount of PLUS loan debt in a single model. The first two columns use ordinary least squares regression to predict young adults' average debt-to-income ratio. Regardless of whether youth or parent characteristics are incorporated, the children of parent borrowers report

lower average debt-to-income ratios than children whose parents did not borrow equivalent to about 12 to 13% of a standard deviation, respectively. However, there is no association between the amount parents borrow and average debt-to-income ratios. In part, the skewed distribution of youths' debt-to-income ratio may bias findings so Columns 3 and 4 use quantile regression technique to document patterns in the median debt-to-income. Using this technique, the young adult children of parent borrowers have lower debt-to-income ratios. In contrast, a 10% increase in parent PLUS loans is associated with a small 1% increase in youths' debt-to-income ratios, as observed in both Column 3 and 4. The final two columns show the relationship between parent borrowing and their young adult children's non-mortgage debt burden with ordinary least squares regressions. The children of parent borrowers have marginally less non-mortgage debt than children of parents who do not borrow, equivalent to about 0.2% of a standard deviation. In contrast, a 10% increase in the amount of parent PLUS loans borrowed is associated with a modest 6% (for both Columns 5 and 6) increase in youths' non-mortgage debt. Altogether, there is consistent evidence that children of parent borrowers have better financial wellbeing than children whose parents do not borrow. However, as parents' debt increases, young adult children's objective measures of financial wellbeing decline.

Comparing the relationship between parents' characteristics and objective financial wellbeing, I find that the children of college-educated parents consistently have less debt and also have lower median debt-to-income ratios once youth's characteristics are taken into account. In addition, children from upper-middle and high-income families have lower median debt-to-income ratios when either parents or youth characteristics are

taken into account. Similarly, children from high-income families have less non-mortgage debt. In addition, youth characteristics are associated with objective financial hardship. There are two exceptions. First, young adults who are currently enrolled in postsecondary education but do not have a Bachelor's degree have less non-mortgage debt than youth with a Bachelor's and youth without a college degree and who are not currently enrolled have lower median debt-to-income ratios and less non-mortgage debt. In addition, youth who work full-time have lower average and median debt-to-income ratios than those work part-time, likely because they have higher incomes. Young women have higher non-mortgage debts than men, and lower median debt-to-income ratios. This is surprising given that women also have lower incomes than men. Finally, objective financial hardship varies across race and ethnicity. Black youth have higher median debt-to-income ratios than whites and Asian youth have lower debt-to-income ratios and less non-mortgage debt, though this likely varies across Asian ethnic groups.

To make these patterns more concrete, Figures 3.1 through 3.3 depict the predicted values of the four financial wellbeing indicators by the amount of PLUS loan debt borrowed net of controls. Figure 3.1 shows that young adults whose parents borrowed between \$1 and \$6,000 of PLUS loan debt are the least financially stressed (between 3.14 and 3.22), even in comparison to those whose parents did not borrow through PLUS (3.22). Yet, when parents borrow more than about \$11,000, their young adult children's financial stress increases to about 3.51 among those whose parents borrowed \$51,000. There is a 12% standard deviation difference in the financial stress of youth whose parents borrowed \$6,000 (which is about the 25th percentile of PLUS debt among parent borrowers) and those whose parents borrowed \$26,000 (which is

approximately the 75th percentile), and a 26% standard deviation difference when compared to those whose parents borrowed \$51,000 through PLUS.

Figure 3.2 depicts a similar pattern for young adults' mean and median debt-to-income ratios, though median debt-to-income ratios are generally lower than the mean. Specifically, youth whose parents did not use PLUS have median debt-to-income ratios of about 0.80. In other words, for these youth, it would take almost 10 months to repay their non-mortgage debt. In contrast, it would only take about 9 months for those whose parents borrowed between \$1,000 and \$6,000 in PLUS loans, but almost a year for those whose parents held \$41,000 or more of PLUS loan debt.

Finally, Figure 3.3 again shows a similar pattern for young adults' non-mortgage debt. On average, those whose parents did not borrow through PLUS hold about \$9,500 in non-mortgage debt, while those whose parents were in 25 percentile of PLUS loan borrowers held \$1,000 to \$2,000 less non-mortgage debt. In contrast, young adults whose parents were in the top half of PLUS loan borrowers, hold significantly more non-mortgage debt (between \$1,000 to \$14,000 more, reflecting a difference equivalent to about 9% of a standard deviation). Altogether, parent PLUS loans may act as a buffer against financial hardship for young adult children, but only at lower levels of debt.

Ordinary Least Squares and Quantile Regressions of Objective and Subjective Financial Hardship across Family Income

Table 3.4 investigates whether the relationship between parent borrowing and financial hardship depends on youth's background characteristics. Among youth from middle-income families, there is no association between parent borrowing and subjective financial hardship, net of other youth and parent characteristics. Across the income

distribution, there is little difference in financial stress among young adult children of parent borrowers. In other words, the financial stress associated with parent borrowing is not driven by the experience of youth from certain household backgrounds. Turning to objective measures of financial hardship, neither average nor median debt-to-income ratios are associated with parent borrowing among middle-income youth, and this relationship does not vary substantially across the income distribution. In contrast, middle-income youth have greater non-mortgage debt when their parents borrow and when their parents borrow more (10% increase in parent borrowing associated with 8% increase in non-mortgage debt). A global test of the equality of coefficients also shows that the impact of parent borrowing through PLUS on non-mortgage debt is even greater for youth from high-income families. Specifically, when high-income parents use PLUS, their children rely on less non-mortgage debt than low, lower-middle, and upper-middle income youth (at $p < 0.05$), but their children's non-mortgage debt increases at a faster rate (at $p < 0.05$). Despite the variation across income groups in terms of the relationship between PLUS and non-mortgage debt, patterns generally show little variation across family income in the relationship between parent borrowing and children's financial wellbeing in young adulthood. Supplemental analyses using a continuous measure for parent income finds similar patterns in parent borrowing and financial wellbeing.

Additional analyses show that some measures of financial hardship vary across race and ethnicity. Specifically, youth who identify as coming from a racial and ethnic group other than White, Black, Latinx, or Asian experience different relationships between PLUS loans and financial stress than Black, Latinx, or Asian youth, though it is difficult to draw conclusions as to why both because of small sample sizes and because of

the group is conceptually ill-defined. In addition, the relationship between PLUS and median debt-to-income ratios varies across race and ethnicity. Relative to White and Asian youth, Black students' debt-to-income ratios increase at a greater rate as PLUS loan debt increases (see Appendix Figure 3A), though these racial and ethnic differences are not observed in the relationship between PLUS and non-mortgage debt. This suggests that racial discrimination in the labor market for college graduates partly drives the higher non-mortgage debt-to-income ratios experienced by Black youth relative to whites. PLUS loans magnify the hardship but additional research is necessary to understand why this might be the case.

Figures 3.4 through 3.6 illustrates these relationships between PLUS loans and financial wellbeing for youth from families across the income distribution. Figure 3.4 documents the relationship between PLUS loan debt and financial stress for youth with different levels of family income. Although it appears that youth from high-income families experience a different relationship between PLUS and financial stress, the differences are negligible. Instead, the pattern documented for the main effects, where PLUS acts as a buffer on financial stress only at lower levels of PLUS loan debt, is observed. Similarly, the relationship PLUS loans has with both mean and median debt-to-income ratios are observed for youth regardless of their parents' income (Figure 3.5).

In contrast, Figure 3.6 shows that youth from low-, low-middle, and upper-middle income families experience a different relationship between PLUS and non-mortgage debt than their high-income peers. Namely, PLUS acts as a buffer to non-mortgage debt at lower levels of PLUS debt for low-, lower-middle, middle, and upper-middle income youth, and this buffering is even more pronounced for young adults from high-income

families, though it also erodes at a much faster rate. Specifically, youth with high-income parents who borrowed between \$1000 and \$6,000 through PLUS hold less than \$3,000 in non-mortgage debt, while comparable youth from lower income families hold between \$7,000 and \$10,000 of non-mortgage debt. These income gaps in the relationship between PLUS and non-mortgage debt are equivalent to between 5 and 14% of a standard deviation. Among those whose parents borrowed \$21,000 in PLUS loans, the income patterns for the relationship between PLUS and non-mortgage debt are reversed. Specifically, high-income youth with parents who borrowed \$21,000 or more through PLUS carry over \$22,000 in non-mortgage debt compared to \$15,000 or less among youth from families with lower incomes (equivalent to about 7% of a standard deviation). In other words, PLUS continues to act as a buffer for high-income youth for longer, but its benefits erode to a greater degree at higher levels of PLUS debt, though these findings should be interpreted with caution given that there are so few high-income youth in the sample. In supplemental analyses, I investigate whether this pattern is driven by differences in the amount of federal student loan debt borrowed by youth, but find no evidence that this is the case. Instead, the income differences in non-mortgage debt derive from credit card or private educational debt. This provides some evidence that parents across the income distribution may be motivated to borrow for different reasons, with high-income parents borrowing to reduce their children's debt burdens.

Discussion

This study expands on existing research investigating parent-child financial support across the life course by focusing on the ways that parents' use of debt to fund college may influence their young adult children's financial wellbeing. Given how

pervasive credit and debt have become in American lives it is critical to understand the intergenerational financial implications when families borrow. I focus on parent borrowing through the federally-financed Parent Loans for Undergraduate Students (PLUS) program because it is more accessible to families across the income distribution, because parents can borrow significant sums, and because PLUS loans finance children's educational attainment, a critical milestone on the transition to adulthood and one that has considerable implications for young adults' trajectories. My findings underscore that financing college, and perhaps even youths' entry into adulthood, is an intergenerational family project, and that the costs are often experienced by families across the income distribution. These findings are especially timely given that the current economic crisis driven by the pandemic may lead to even more parents to borrow in the future.

When parents borrow, their children have marginally better financial wellbeing when compared to children whose parents did not borrow for college. I document this pattern for both subjective and objective measures of financial wellbeing. In qualitative work, some parents describe wanting to borrow through PLUS to ease youth's entry into adulthood (Friedline et al. 2017; Jaschik 2013; Zaloom 2019), including reducing their children's need to borrow. Indeed, the children of parent borrowers have less non-mortgage debt, which translates into lower debt-to-income ratios, and ultimately less financial stress. This suggests that parent PLUS loans serve an important function for helping parents smooth their children's transition to adulthood. Yet, parent PLUS loans are only available to parents of dependent college students, meaning that not all parents use or have access to PLUS. Relying on parent PLUS loans as a policy solution to help youth navigate the transition to adulthood will miss large groups of youth who often

could use the most support (Silva 2012).

However, higher levels of parent PLUS loans also are associated with greater financial hardship for young adults. Previous work found that debt, including educational debt, is associated with financial hardship and stress for borrowers (Bricker and Thompson 2016; Cherney et al. 2020; Drentea 2000; Dwyer 2018), and this study shows that the hardship and stress extends across generations. Higher amounts of parent PLUS loan debt is associated with greater financial stress, higher non-mortgage debt, and more burdensome debt-to-income ratios among young adults, after accounting for young adults' family and background characteristics. In supplemental analyses, the negative relationship between parent borrowing and financial stress is attenuated and no longer statistically significant once children's non-mortgage debt is included (analyses available upon request). These findings indicate that material support in young adulthood may be different when parents borrow more. Perhaps parent PLUS loans strain parents' finances, forcing parents to reduce or stop providing material support to their young adult children. Alternatively, parent borrowers and parents with heavier PLUS burdens may need financial support from their young adult child instead. Future work should test these mechanisms more explicitly.

Given the limits of middle-class incomes in the face of staggering college prices, much of the empirical focus on parent borrowing has understandably been on middle-income families, arguing that debt has transformed middle-class family life (Tevington et al. 2017; Zaloom 2019). However, this study shows that long-term financial implications of parent borrowing on young adults' financial wellbeing is not isolated to middle-income families. In particular, lower levels of debt among the children of parent

borrowers and the declining benefits PLUS loans in terms of youths' non-mortgage debt are observed for families across the income distribution. However, these patterns are even more extreme for high-income young adults relative to low-income youth, indicating that families across the income distribution may borrow through PLUS for different reasons. Although families across the income distribution need educational debt to help fund college, high-income parents may also borrow to help shield their children from debt during college. Americans believe that college is necessary to achieving the American dream of a middle-class life and that most parents expect their children to go to college (Goyette 2008), it is perhaps unsurprising that the struggle to afford college and the reliance on debt to do so has implications for many American families. Future work should further investigate whether parents' reasons for borrowing through PLUS impacts its intergenerational implications for youths' financial wellbeing.

Although the findings consistently point to a relationship between parent borrowing and financial wellbeing in young adulthood, there are limitations that future studies should address. First, youth in this sample are comprised of 26 year-olds who had attended four-year college. Although many Americans attend four-year college, it is critical to consider whether parent borrowing is associated with financial stress among a wider population of young adults. In addition, the data used in this survey only asked about young adults' financial stress at age 26. Similarly, this study covers the years of the Great Recession, when families may have been particularly financially stressed. This may mean that my findings are not generalizable in more favorable economic times, though it suggests its relevance to today's families in the wake of the economic downturn from the pandemic. Future work should consider when this relationship between PLUS and

wellbeing develops and how long it persists in young adulthood. Because of data limitations I was unable to restrict the sample to young adults who had been dependents of their parents during their college years. As a result, some youth who are categorized as having a parent who did not borrow may have been independent from their parents and thus should be excluded from the sample since their experiences financing college and navigating adulthood are very different and much more difficult. Given this possibility, it is likely that I am overestimating the benefits of parent borrowing for financial wellbeing, though I began to address this by restricting analyses to those who used FAFSA.

Although this study has demonstrated a consistent, negative relationship between the amount of parent PLUS loans and financial wellbeing, there are a number of different ways scholars define financial wellbeing with survey data (Parker et al. 2016; Sorgente and Lanz 2017). I have used three different measures, but future research should investigate other operationalizations. If findings are consistent with other measures of financial wellbeing, this would provide additional support for the findings presented here. Even if findings vary when using other measures of financial wellbeing, different operationalizations of financial wellbeing have slightly different meanings and it would be useful to have clarity about what domains of financial life debt touches. This may help provide clarity around why there are income differences in the relationship between PLUS and non-mortgage debt, but not for debt-to-income ratios or financial stress.

Although this study suggests possible mechanisms connecting parent borrowing to youth financial wellbeing, more data is necessary to test them. To investigate material supports as a possible mechanism, future work should rely on longitudinal data that collects information about intergenerational material support after parents borrow, but

prior to when financial wellbeing is measured to avoid issues of reverse causation. Given the importance of understanding the mechanisms linking parent borrowing to young adult financial wellbeing, researchers should also conduct more longitudinal, qualitative research investigating intergenerational family relationships (see Hamilton 2016, Tevington et al. 2016, and Zaloom 2019 for examples), especially around money, to clarify how financial stress is managed and potentially transmitted across generations in young adulthood. Similarly, understanding whether parent borrowing is a product of parent-child relationships will be an important area to explore to understand how families incorporate debt into intergenerational relationships. Finally, future work should investigate whether parent borrowing through other programs and for other purposes is also associated with stress in young adulthood. Doing so clarifies whether some of young adults' stress derives from feelings of responsibility—their parents borrowed on their behalf—or if debt, regardless of its source, generates stress that influences parent-child relationships in young adulthood.

Currently, national debates weigh the value of educational debt, question college costs, and disagree over who is deserving of debt cancellation policies. This study speaks to these questions in a novel way by considering the implications of parent PLUS loans for children's financial wellbeing in young adulthood, a critical and precarious time for youth as they develop a sense of who they are and what opportunities are available to them. This study shows that educational debt in the form of PLUS loans has both rewards and consequences that reach across generations. Despite providing a modest buffer to financial hardship and stress at lower levels of PLUS, the protective role of PLUS degrades at higher levels of debt. As a result, this study argues that parent borrowing is an

imperfect tool for providing opportunities that promote youths' financial wellbeing. Moreover, PLUS's benefits and risks are not solely experienced by middle-class families, which has implications for policymakers' focus on means-testing. Specifically, this study shows that limiting whose debt is cancelled or which college students should receive more financial aid ignores the reality that educational debt has intergenerational consequences, regardless of families' means. Means-testing around educational debt cancellation delays critical policy changes that could remedy the structural issues that necessitate parent and student borrowing, and could ultimately benefit parents, children, and how they support one another.

Table 3.1. Descriptive Statistics by Parent Borrowing

	Full Sample			No PLUS			PLUS			
	mean	SD	SE	mean	SD	SE	mean	SD	SE	p
Young adult financial hardship measures										
Financial Stress	3.18	1.28	0.02	3.20	1.28	0.03	3.10	1.28	0.04	
Debt-to-income ratio	4.94	1.28	1.28	5.63	123.82	1.70	2.93	19.48	0.65	
Non-mortgage debt (\$)	39,333	53,651	849	38,866	53,722	1,031	40,702	53,468	1,689	
Parent borrowing										
Parents borrow through PLUS	0.25	0.44	0.01							
Amount parents borrow through PLUS (\$)	4,666	14,337	260				19,943	20,972	695	
Young Adult Characteristics at age 26										
Educational attainment										
Not enrolled, no Bachelor's degree	0.21	0.40	0.01	0.22	0.40	0.01	0.21	0.38	0.01	
Enrolled, no Bachelor's degree	0.21	0.39	0.01	0.23	0.41	0.01	0.13	0.32	0.01	***
Bachelor's degree	0.43	0.50	0.01	0.41	0.50	0.01	0.51	0.50	0.02	***
Enrolled, with Bachelor's degree	0.15	0.36	0.01	0.14	0.36	0.01	0.15	0.37	0.01	
Income (\$)	28,250	24,011	358	27,449	24,100	431	30,599	23,547	824	**
Works full-time	0.75	0.43	0.01	0.73	0.44	0.01	0.79	0.40	0.02	**

Relationship status									
Single	0.47	0.50	0.01	0.46	0.50	0.01	0.49	0.50	0.02
Married or partnered	0.51	0.50	0.01	0.51	0.50	0.01	0.50	0.50	0.02
Divorced/separated	0.02	0.15	0.003	0.03	0.16	0.00	0.02	0.12	0.004 *
Has children	0.22	0.40	0.01	0.25	0.42	0.01	0.15	0.35	0.01
Female	0.56	0.49	0.01	0.57	0.49	0.01	0.55	0.50	0.02
Young adult race/ethnicity									
White	0.67	0.48	0.01	0.65	0.49	0.01	0.74	0.46	0.02
Black	0.14	0.33	0.01	0.15	0.34	0.01	0.09	0.28	0.01
Latinx	0.10	0.30	0.01	0.11	0.30	0.01	0.08	0.29	0.01
Asian	0.04	0.29	0.003	0.04	0.30	0.003	0.04	0.26	0.01
Other racial/ethnic group	0.05	0.22	0.004	0.05	0.22	0.01	0.05	0.23	0.01
Parents' Characteristics									
Income									
Low income, \$50,000 or less	0.44	0.49	0.01	0.48	0.50	0.01	0.32	0.46	0.02
Low-middle income, \$50,001 - \$74,999	0.27	0.42	0.01	0.26	0.41	0.01	0.29	0.43	0.02
Middle income, \$75,000 - 99,999	0.15	0.37	0.01	0.13	0.36	0.01	0.20	0.40	0.01
Upper-middle income, \$100,000 - 200,000	0.12	0.36	0.01	0.11	0.34	0.01	0.16	0.40	0.01
High income, \$200,000+	0.02	0.19	0.002	0.02	0.18	0.003	0.03	0.20	0.01
Parents' completed college	0.50	0.50	0.01	0.48	0.50	0.01	0.57	0.49	0.02
Parents' married	0.92	0.27	0.01	0.91	0.27	0.01	0.94	0.26	0.01
N=	5,010			3,730			1,280		

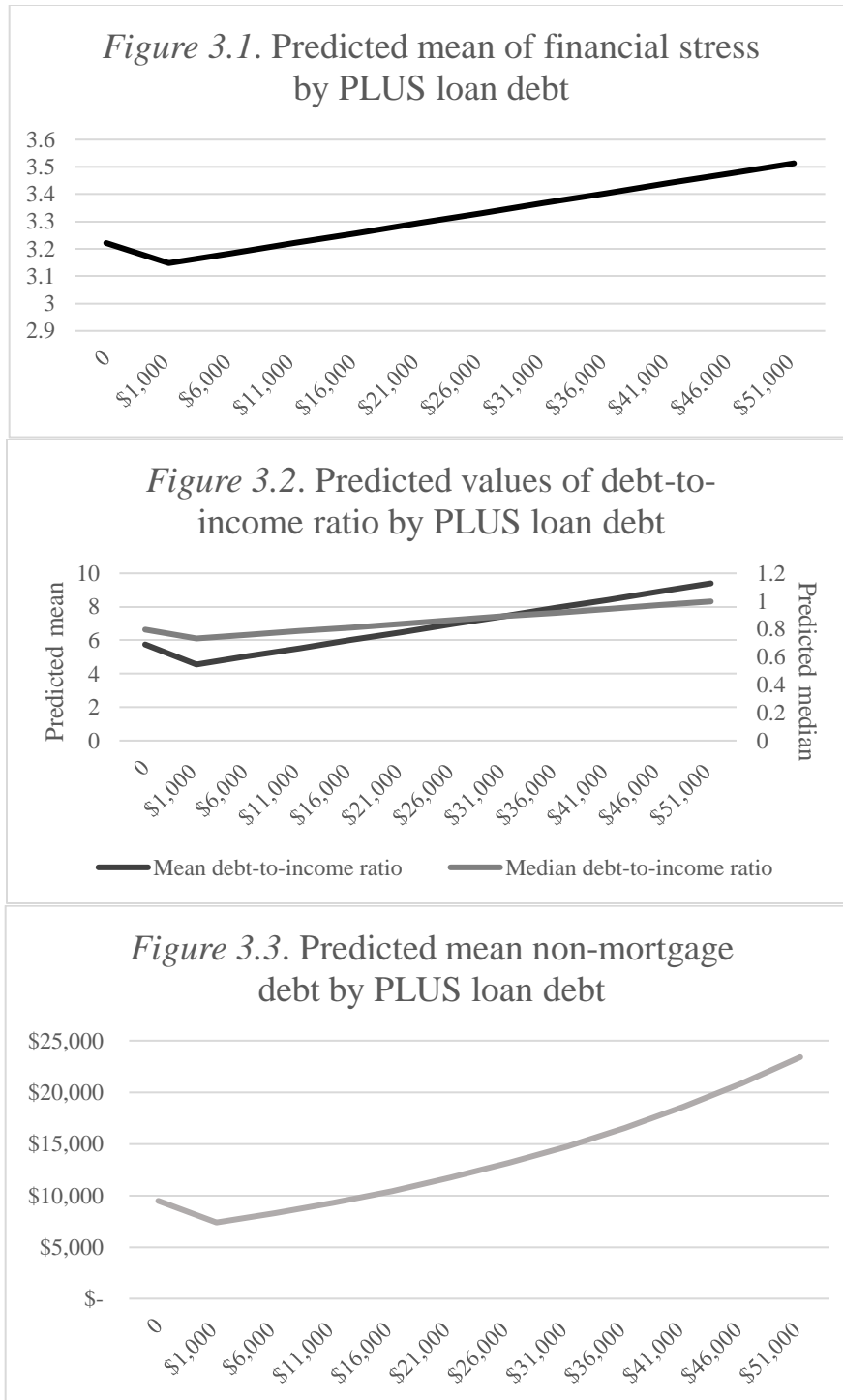
Notes: Analysis limited to young adults who attended a four-year college and submitted a FAFSA application; Standard errors in parentheses; Standard deviations calculated on first imputed data set; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Ns rounded to nearest tens per NCES disclosure rules

Table 3.2. Coefficients from Ordinary Least Squares Regression of Subjective Measure of Financial Hardship, N =5,010

VARIABLES	1 Parent Charact.	2 + Youth Charact.
Parent ever borrowed through PLUS	-0.80 (0.42)	-0.85* (0.40)
Parent borrowed through PLUS (Logged)	0.10 (0.05)	0.11* (0.05)
Parents' marital status (Married/partnered omitted) Divorced/separated/Single	0.17** (0.06)	0.17** (0.06)
Parent completed college	-0.21*** (0.05)	-0.17*** (0.05)
Parents' income (Middle-income omitted) Low income, \$50,000 or less	0.04 (0.07)	0.003 (0.06)
Low-middle income, \$50,001 - \$74,999	-0.01 (0.07)	-0.01 (0.07)
Upper-middle income, \$100,000 - 200,000	0.00 (0.08)	0.03 (0.08)
High income, \$200,000+	-0.13 (0.12)	-0.09 (0.12)
Race/ethnicity (White omitted) Black	0.17* (0.08)	0.04 (0.08)
Hispanic	0.01 (0.08)	-0.03 (0.08)
Asian	-0.01 (0.07)	0.01 (0.07)
Other	0.20* (0.09)	0.14 (0.09)
Female	0.26*** (0.05)	0.23*** (0.05)
Educational attainment (Has Bachelor's omitted) Not enrolled, no Bachelor's degree		0.28*** (0.06)
Enrolled, no Bachelor's degree		0.13 (0.07)
Enrolled, has Bachelor's degree		0.11 (0.06)
Income (\$1000)		-0.06*** (0.01)
Relationship status (Single omitted)		

Married or partnered		-0.29***
		(0.05)
Divorced/separated		0.29*
		(0.14)
Has children		0.24***
		(0.06)
Constant	3.86***	4.48***
	(0.42)	(0.42)

Notes: Analysis limited to young adults who attended a four-year college and did not attend graduate school; Standard errors in parentheses; Ns rounded to nearest tens per NCES disclosure rules; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$



Notes: Analysis limited to dependent students who ever enrolled in a four-year institution and applied to federal financial aid in Educational Longitudinal Study of 2002 data; Predicted values control for parents' education, marital status; students' race/ethnicity, gender, educational attainment, marital status, parenthood status, and economic situation. Predicted values were constructed without a spline for PLUS loans.

Table 3. Coefficients from Ordinary Least Squares Regression Models and Quantile Regression Models Estimating Objective Financial Hardship, N = 5,010

VARIABLES	1	2	3	4	5	6
	Mean Debt-to-income ratio		Median Debt-to-income ratio		Non-mortgage debt, logged	
	Parent Charact.	+ Youth Charact.	Parent Charact.	+ Youth Charact.	Parent Charact.	+ Youth Charact.
Parent ever borrowed through PLUS	-12.31* (5.50)	-14.00* (6.59)	-0.93*** (0.24)	-0.90** (0.29)	-4.62** (1.58)	-4.60** (1.56)
Parent borrowed through PLUS, Logged	1.37 (0.81)	1.66 (0.91)	0.12*** (0.03)	0.12** (0.04)	0.60** (0.20)	0.59** (0.20)
Parents' marital status (Married/partnered omitted) Single, Divorced, Partnered	-1.30 (3.69)	-1.81 (3.94)	0.06 (0.04)	0.10 (0.05)	0.13 (0.16)	0.15 (0.16)
Parents' completed college	1.57 (3.97)	1.48 (4.22)	-0.03 (0.04)	-0.09* (0.04)	-0.38** (0.12)	-0.40** (0.12)
Parents' income (Middle-income omitted) Low income, Less than \$50,001	-1.46 (4.44)	-1.31 (4.68)	0.05 (0.05)	0.05 (0.06)	0.05 (0.18)	0.07 (0.17)
Low-middle income, \$50,001 - \$74,999	-3.40 (3.14)	-2.97 (3.18)	0.04 (0.05)	0.02 (0.07)	0.24 (0.19)	0.22 (0.18)
Upper-middle income, \$100,000 - 200,000	-4.03 (2.72)	-3.93 (2.68)	-0.17** (0.06)	-0.17* (0.07)	-0.09 (0.23)	-0.14 (0.23)
High income, \$200,000+	-4.84 (2.75)	-4.31 (2.80)	-0.34*** (0.09)	-0.29* (0.12)	-1.50** (0.51)	-1.55** (0.49)
Race/ethnicity (White omitted) Black	9.76 (7.81)	9.96 (8.24)	0.31*** (0.05)	0.29*** (0.07)	-0.14 (0.18)	0.11 (0.17)
Hispanic	3.18	2.93	-0.03	-0.04	-0.14	-0.06

Asian	(4.42) 0.32 (1.65)	(4.46) -1.21 (1.92)	(0.06) -0.22*** (0.06)	(0.07) -0.27*** (0.07)	(0.17) -1.09*** (0.22)	(0.17) -0.99*** (0.22)
Other	0.53 (1.01)	-0.04 (1.23)	0.07 (0.08)	0.07 (0.09)	-0.35 (0.25)	-0.21 (0.25)
Female	4.47 (2.35)	4.33 (2.25)	0.10** (0.03)	0.09* (0.04)	0.38** (0.12)	0.32* (0.12)
Educational attainment (BA omitted)						
No Bachelor's degree and not enrolled		2.16 (2.66)		-0.16** (0.06)		-0.30* (0.13)
No Bachelor's degree and enrolled		2.88 (4.05)		-0.11 (0.06)		-0.57*** (0.16)
Bachelor's degree and enrolled		-1.26 (1.15)		0.28*** (0.06)		0.14 (0.17)
Work full-time		-12.79* (5.79)		-0.60*** (0.05)		-0.07 (0.15)
Relationship status (Single omitted)						
Married or partnered		-0.32 (3.05)		-0.22*** (0.04)		0.78*** (0.11)
Divorced/separated		44.67 (46.31)		0.22 (0.14)		0.24 (0.38)
Has children		-10.35 (7.26)		-0.01 (0.06)		0.00 (0.13)
Income, Logged						0.03 (0.04)
Constant	15.18* (7.25)	26.96** (8.18)	1.51*** (0.24)	2.20*** (0.30)	13.66*** (1.60)	13.18*** (1.60)

Notes: Analysis limited to young adults who attended a four-year college and applied to FAFSA; Standard errors in parentheses; Ns rounded to nearest tens per NCES disclosure rules; *** p<0.001, ** p<0.01, * p<0.05

Table 4. Coefficients from Ordinary Least Squares Regression Models of Financial Hardship by Parent Income, N=5,010

VARIABLES	Subj.			
	Financial Hardship		Objective Financial Hardship	
	Financial stress	Debt-to-income, mean	Debt-to-income, med.	Non-mortgage debt, mean
Parents ever borrow through PLUS	-1.55 (0.85)	-10.48 (10.9)	-0.76 (0.73)	-6.82* (2.68)
Parents borrow through PLUS, Logged	0.18 (0.11)	1.04 (1.43)	0.09 (0.09)	0.85* (0.34)
Parents' income (Middle income omitted)				
Low income, \$50,000 or less	-0.06 (0.08)	-2.54 (5.78)	-0.00 (0.07)	-0.11 (0.20)
Low-middle income, \$50,001 - \$74,999	-0.08 (0.08)	-3.03 (4.40)	0.01 (0.08)	0.16 (0.21)
Upper-middle income, \$100,000 - 200,000	-0.03 (0.10)	-4.62 (3.82)	-0.17 (0.09)	-0.09 (0.26)
High income, \$200,000+	-0.11 (0.15)	-4.17 (3.97)	-0.18 (0.14)	-0.93 (0.60)
Parent borrowing x Parents' income (Middle income omitted)				
PLUS x Low income, \$50,000 or less	0.96 (1.17)	-18.12 (22.0)	-0.49 (0.91)	3.70 (2.89)
PLUS x Low-middle income, \$50,001 - \$74,999	1.06 (1.10)	1.13 (16.4)	0.07 (0.90)	1.49 (3.24)
PLUS x Upper-middle income, \$100,000 - 200,000	0.06 (1.10)	4.87 (11.9)	-0.09 (1.00)	3.53 (3.06)
PLUS x High income, \$200,000+	1.99	12.28	-0.13	-8.80

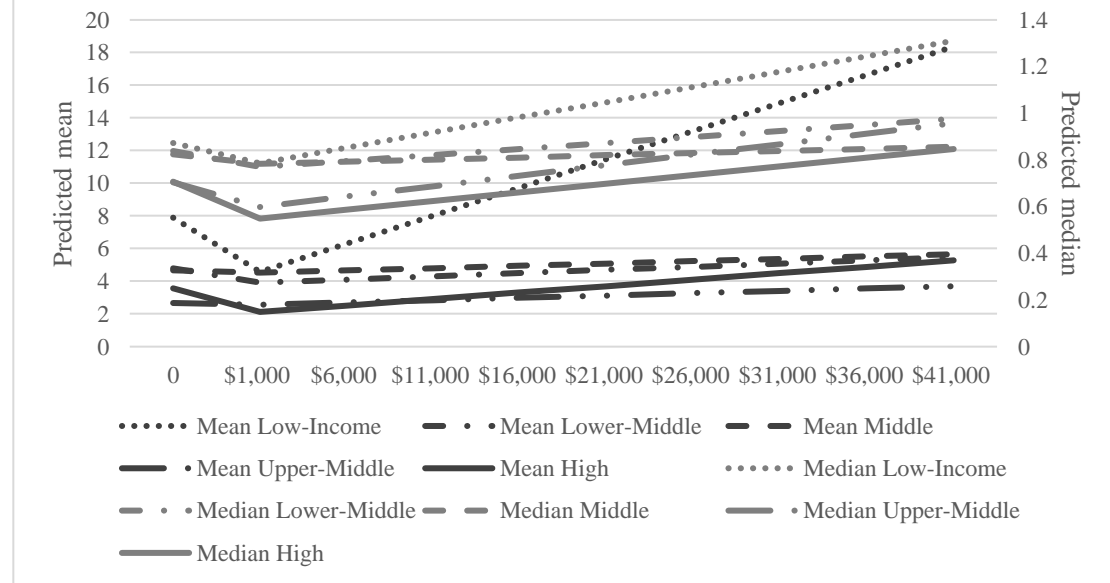
Parent borrowing, Logged x Parents' income (Middle income omitted)	(1.74)	(21.3)	(1.62)	(5.95)
PLUS x Low income, \$50,000 or less	-0.10 (0.16)	2.67 (3.02)	0.10 (0.12)	-0.40 (0.38)
PLUS x Low-middle income, \$50,001 - \$74,999	-0.11 (0.14)	-0.03 (2.10)	-0.01 (0.12)	-0.17 (0.41)
PLUS x Upper-middle income, \$100,000 - 200,000	0.01 (0.14)	-0.20 (1.60)	0.01 (0.13)	-0.48 (0.38)
PLUS x High income, \$200,000+	-0.26 (0.23)	-1.75 (3.01)	-0.01 (0.22)	0.92 (0.82)
Constant	3.68*** (0.15)	65.96* (25.6)	1.34*** (0.09)	8.65*** (0.40)

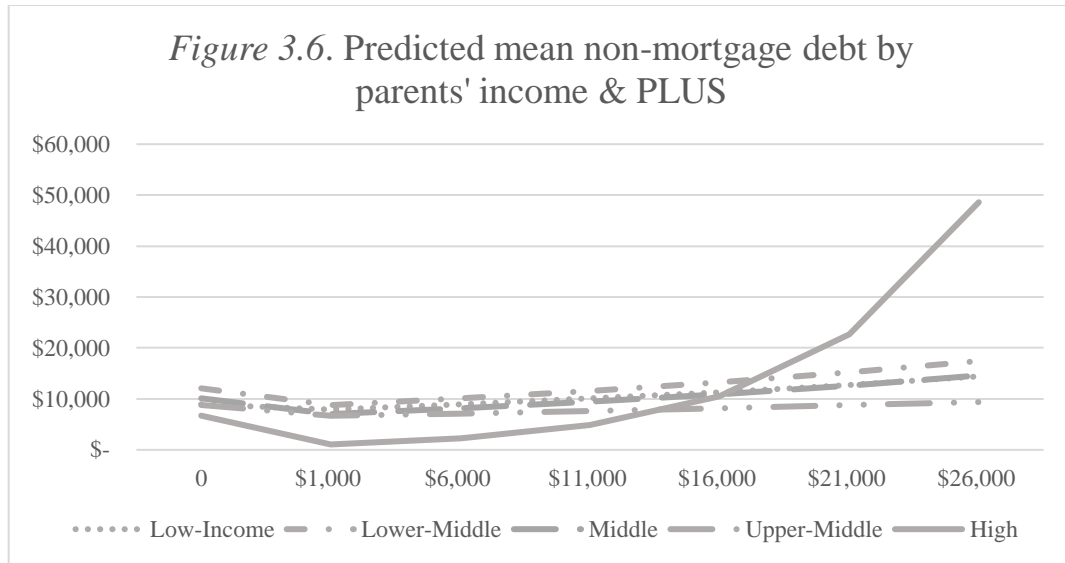
Notes: Analysis limited to young adults who attended a four-year college and applied to FAFSA; All models take into account parents' education, marital status, young adult educational attainment, employment, race, gender, marital and parent status; Standard errors in parentheses; Ns rounded to nearest tens per NCES disclosure rules; *** p<0.001, ** p<0.01, * p<0.05

Figure 3.4. Predicted mean financial stress by parents' income & PLUS loan debt



Figure 3.5. Predicted mean and median debt-to-income ratio by parents' income and PLUS





Analysis limited to dependent students who ever enrolled in a four-year institution and applied to federal financial aid in Educational Longitudinal Study of 2002 data; Predicted values control for parents' education, marital status; students' race/ethnicity, gender, educational attainment, marital status, parenthood status, and economic situation. Predicted values were constructed without a spline for PLUS loans.

DISCUSSION AND CONCLUSION

This study focused on the Parent Loans for Undergraduate Students (PLUS) program to understand the role of debt in generating risks and allowing parents to have hopes for their young adult children in an era of rising inequality and declining college affordability. Parents financially support their young adult children for many reasons: to ensure support as they age, out of altruism, and because their children's achievements are a reflection of their own success as parents (Fingerman et al. 2020; Fingerman, Sechrist, and Birditt 2013; Swartz 2009). Regardless of their underlying motivations, parents hope to provide opportunities for their children and scholars are increasingly considering the financial risks parents take to provide those opportunities (Fingerman et al. 2020; Maroto 2017, 2018). I show that parent borrowing through PLUS burdens parent borrowers and that they are a limited tool for smoothing youths' entry into adulthood. Doing so, I contribute to theories about intergenerational support and existing understandings of debt while speaking to current higher education policy conversations.

The first chapter shows that parents across the income distribution experience risk when using debt to support young adult children, demonstrating that parent borrowing touches families across the income distribution albeit in different ways. Currently, policymakers argue that PLUS loan borrowers are predominantly use by high-income families (Baum et al. 2019; Murakami 2021), while a long scholarly literature argues that debt is largely experienced by those in the middle of the income distribution (Houle 2014b; Leicht and Fitzgerald 2006; Porter 2012; Sullivan et al. 2000; Tevington et al. 2017; Wolff 2010, 2013; Zaloom 2019). I provide clarity to these discussions by showing that parents in the middle of the income distribution are most likely to borrow at a rate of

about 18 to 20 percent. High-income parent borrowers rely on higher amounts of PLUS loan debt, around \$13,800 in a single academic year. Yet, low and low-middle income parent borrowers are also less likely to have the totality of their debt canceled by current legislation seeking to forgive up to \$10,000 of federal educational debt (Nadworny 2021). Finally, low-income parents face high debt-to-income ratios, beyond the 0.6 threshold used to designate financial hardship (Baker 2019; Baum and Schwartz 2006).

Policymakers sometimes exclusively focus on the ways high-income parents use PLUS to argue that it is not a societal issue worthy of attention (Murakami 2021). Rather than being contained to families in one part of the income distribution, debt is a feature of life for high-, middle-, and low-income families. PLUS may be a disturbing harbinger of future debt trends if college costs continue to outpace family income and grant support. Future work should investigate whether patterns in parent borrowing have shifted over time and what drives those patterns. Doing so would provide insight into whether these patterns may exist for other forms of debt and what policy solutions might address it. In addition, considering whether the reasons parents borrow is related to their debt burden provides insight into the choices families make to manage unaffordable college costs. Overall, this chapter highlights the importance of including parents' borrowing in conversations about college affordability.

The next two empirical chapters investigate whether parent borrowing through PLUS delivers on parents' hopes to smooth children's path to adulthood. First, I consider the relationship between parent borrowing and Bachelor's degree attainment, which is a pivotal adult milestone and critical for youths' social mobility. I find that low-income children of parent borrowers are more likely to complete college than their low-income

peers whose parents do not borrow. This pattern is not observed for children from higher income families. Moreover, the amount of parent PLUS debt is not associated with stronger degree completion for students regardless of their families' means. These findings show the importance of considering characteristics of money beyond income—where money comes from and who uses it have social and cultural meanings that are also important to consider. Understanding how students and parents interpret PLUS loans, how they earmark them, and whether those interpretations and earmarking depend on families' income deepens current understandings of how money and financial transactions are experienced by Americans. In addition, the impact of PLUS on degree attainment is distinct from those observed for grants and federal debt. This underscores the importance of thinking about qualitative dimensions of debt to more effectively channel resources to students and their families. It also suggests that policies designed to restrict access to PLUS without addressing families' financial need may reduce college completion rates for low-income students, hampering opportunities for mobility.

Finally, I investigate whether parent borrowing through PLUS supports young adult children's financial wellbeing, as measured with subjective and objective indicators. Young adult children of parent borrowers have better financial wellbeing than their peers whose parents did not borrow, but greater amounts of PLUS loans are associated with greater financial stress, higher non-mortgage debt, and higher median debt-to-income ratios. Some parents explain that they used PLUS loans to reduce their children's reliance on debt in the hopes of providing greater financial security to their children once they graduate. Yet, my findings show that this hope is only partially fulfilled. This points to the importance of understanding why parent PLUS loans fall short. Perhaps parent

borrowing hampers parents' ability to provide material support to young adult children or it increases children's material support to parents. Future work should evaluate this more closely. In addition, it is important to investigate whether other types of debt lead to similar patterns or if this is specific to parent borrowing through PLUS.

Focusing on educational debt among parent borrowers, these chapters provide insight into a type of intergenerational financial support that has received comparatively less attention. These chapters document that debt, unlike cash or in-kind contributions, provide limited support for children's entry into adulthood. In part, the risks and rewards inherent with debt lead to financial hardship that is experienced across generations. As families increasingly rely on debt to finance daily life, theories of intergenerational family support should investigate other types of debt and consider the unique way it may influence family life. Similarly, scholarship on debt should draw on life course theories and consider the intergenerational ramifications of debt.

Second, this work challenges debt scholarship to broaden investigations into debt beyond middle-income families. Indeed, parents across the income distribution use the program, with different implications for families. Sometimes that experience is shared, such as observed in the case of financial wellbeing. In other instances, families' experiences with debt differ depending on their income. For example, low-income parents face especially concerning debt burdens from PLUS, which has implications for their own financial health. On the other hand, their children are also more likely to see benefits in terms of degree attainment. This exemplifies how important it is to remember that the middle-income experience with debt is important, but not universal. Ironically, when studies focus on middle-income families, they obscure how universal debt is to

American life. Recognizing that families across the income distribution rely on debt is critical because scholarship on debt often shows that the risks and rewards that accrue from debt depend on who borrows (Dwyer et al. 2013, 2012; Seamster and Charron-Chénier 2017). Debt scholarship could benefit from applying theories of economic and cultural sociology that argue for a deeper investigation into qualitative characteristics of money—its terms, how its disbursed, and how individuals conceptualize and earmark it—to enrich current research on debt beyond whether or not, and how much, someone borrows.

By treating parent PLUS loans as a potential indicator of college affordability, this study provides insight into how policymakers can move forward to address college affordability issues. Namely, this study argues that PLUS is a limited policy option for unaffordable college costs for a number of reasons. First, PLUS has consequences for parents' financial health as well as their children's later in life. Some policymakers advocate for restricting access to PLUS and limiting the amount parents can borrow to prevent some parents from borrowing and reduce future borrowers' debt burdens (Baum et al. 2019; Cellini et al. 2020). Doing so without addressing underlying college affordability issues will only bar parents from acting on their hopes without ensuring their financial risks are reduced, especially if they turn to more predatory types of debt or cash out retirement savings (Napolitano et al. 2014; Zaloom 2019).

Second, I show that PLUS is not as effective at promoting degree attainment as other tuition discounting policies like lowered college costs, more grant aid, or even more student debt. Instead of promoting PLUS as a solution to college affordability, policies should address the conditions that necessitated parent borrowing in the first place. In

particular, policies for free tuition at public institutions and Historically Black Colleges or Universities would be an important step for addressing college affordability while also improving degree attainment without undermining parents' and young adults' financial wellbeing (Busta 2021). Moreover, such a policy would help reframe current conversations about college's value from only offering individual, labor market benefits to underscore that college also provides public, societal benefits (Labaree 1997). Debt reinforces the view that education is a private investment with benefits enjoyed only by the individual. In contrast, when higher education policies make college costs more manageable by reducing or eliminating tuition, this sends a message that the costs of investing in postsecondary education will be shared by all Americans because it also offers shared, societal benefits. This shift from focusing on individual costs and benefits to societal ones are especially important to engage with in the wake of the pandemic, which led to a resurgence of questions about the value of college in response to shifts to online learning and declining enrollment (Anderson 2021; Jaschik 2020).

Alternatively, higher education policies could focus on addressing college affordability with additional grant aid. Specifically, expanding Pell grant eligibility and increasing the amount of Pell grant aid are another important policy tool (Burke 2021; Busta 2021; Murakami 2020). My work finds that low-income parents whose children are the most likely to be eligible for Pell face the heaviest debt burdens from PLUS. This finding is disturbing since it highlights that the families Pell is designed to support are not receiving enough aid to shield them from financial risk. Indeed, previous work showed that the share of college costs covered by Pell has declined over the last several decades (Perna and Li 2006), underscoring the importance of increasing the amount of grant aid

to Pell recipients. In addition, my study shows that middle-income students and parents are the most likely to use debt, suggesting that it would be prudent to expand Pell grant eligibility to families in the middle of the income distribution.

PLUS is also a limited policy tool because it is only available to certain types of parents and families. In particular, PLUS loans promote a narrow conceptualization of the family that does not acknowledge the diverse forms that exist in American society. Only biological or adoptive parents can borrow through the PLUS loan program (U.S. Department of Education 2019b); yet, increasingly, children are raised by grandparents, aunts, uncles, or other kin (Carlson and England 2011; Furstenberg 2010). Ignoring these kin networks mean that some students and their families, who are more likely to face expected family contributions beyond their means, are unable to access this resource. In addition, students above the age of 26 or who are married or have children of their own are not considered dependents and thus their parents cannot borrow through the PLUS loan program (U.S. Department of Education 2019b). This also relies on a narrow, mid-century understanding of how youth progress through adult milestones and is increasingly out-of-step with young adults' lived experiences (Cepa and Furstenberg 2021; Furstenberg 2010; Furstenberg and Kennedy 2016). If higher education policy intends to promote parent PLUS loans as an additional resource that families can use to fund college expenses, then it should engage more with family scholarship. Doing so would provide insight into how higher education policies selectively promote and support students with specific types of families. Alternatively, policymakers could find ways to increase Americans' wages so living and learning is more within Americans' financial means. Over time, college costs have rapidly outpaced median family income (Perna and

Li 2006). Rather than relying on policies that restrict access to those who fit a narrow view of family, policymakers could improve all Americans' standard-of-living potentially making college more financially attainable.

Finally, existing policy proposals to cancel educational debt are critical for supporting young people and equalizing opportunities. Yet, there has been less attention to parent borrowers and the impact debt cancellation will have for them (Murakami 2021). PLUS loans should be included in debt cancellation conversations, especially given the limited impact of PLUS on youths' academic outcomes and the troubling implications for their economic security coupled with the debt burdens experienced by parents when they use PLUS. More specifically, this study shows that debt cancellation of more than \$10,000 would be best able to address the debt burdens of parents across the income distribution.

The parent PLUS loan program is explicitly designed to provide intergenerational support for children's mobility opportunities via higher education. Yet, the fact that parents from across the income distribution use PLUS speaks to the reality that net college prices (college tuition, fees, room and board after taking into account grants and scholarships) are too high for many families (Long and Riley 2007a; National Center for Education Statistics 2020; Perna and Li 2006). This is observed in the high levels of debt among students, but also in parents' use of the PLUS loan program. This study adds to existing concerns about the risks and rewards of using debt, showing that PLUS loans do little to support parents' hopes for their children while opening them to risk. As a result, debt is only a partial, imperfect solution to college affordability issues and future research should investigate other forms of debt parents use to determine their risks and rewards.

Overall, until debt cancellation proposals are coupled with other policies to address college affordability issues, parents' will continue to face financial risks in the hopes of providing opportunities to their children. otherwise eliminating PLUS will simply close off financial avenues for parents' hopes for their children.

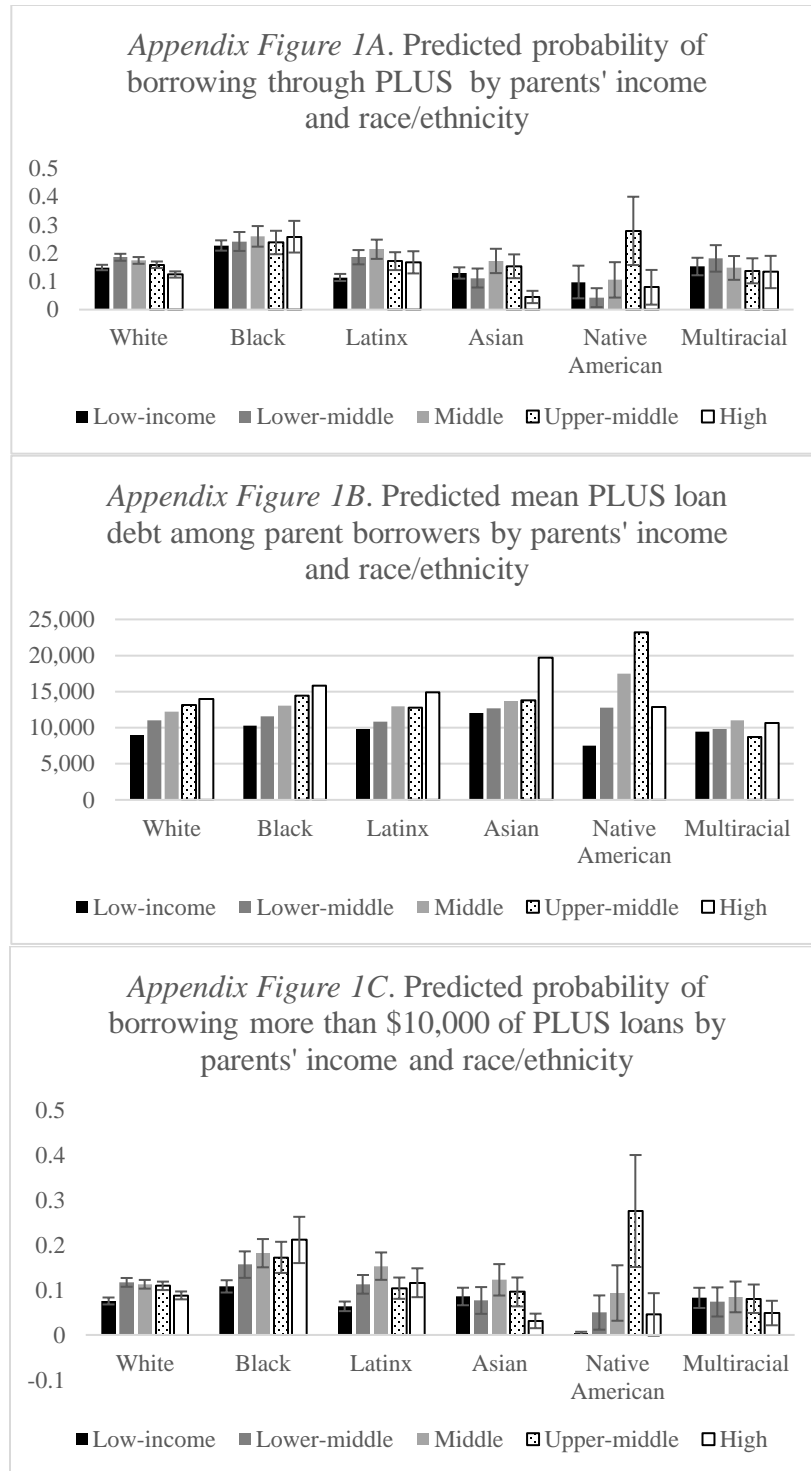
APPENDIX

Appendix Table 1A. Descriptive Statistics by Parent Borrowing through PLUS

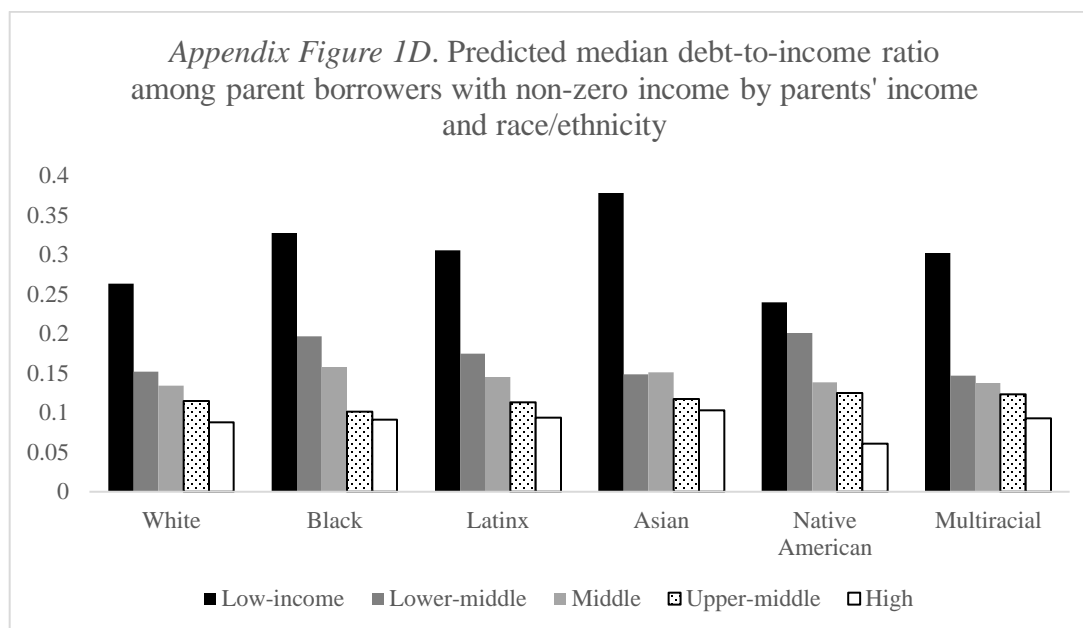
	No PLUS		PLUS		p
	mean	SE	mean	SE	
Ever Use PLUS Loans					
Amount of PLUS Loans (\$)			14,646	307	
Debt-to-income ratio			0.539	0.122	
Debt-to-income ratio of 20% or more			0.373	0.014	
Parent characteristics					
Parents' Income					
Low income, \$50,000 or less	0.480	0.007	0.385	0.014	***
Low-middle income, \$50,001 - 71,999	0.149	0.004	0.177	0.009	**
Middle income, \$72,000 - 94,999	0.137	0.004	0.172	0.009	**
Upper-middle income, \$95,000 - 161,999	0.137	0.004	0.164	0.009	***
High income, \$162,000+	0.097	0.004	0.101	0.007	
Parents' education					
High school diploma or less	0.143	0.005	0.112	0.009	**
Some college or AA	0.265	0.005	0.298	0.012	*
Bachelor's degree	0.316	0.005	0.318	0.012	
Master's degree	0.276	0.005	0.272	0.012	
Parents' marital status					
Re/married	0.647	0.006	0.675	0.013	
Divorced or widowed	0.266	0.005	0.229	0.011	**
Single parent	0.087	0.003	0.096	0.009	
Student's characteristics					
Nativity					
First generation	0.212	0.007	0.150	0.008	***
Second generation	0.070	0.003	0.072	0.007	
Third generation or more	0.718	0.008	0.778	0.011	***

Has a sibling in college	0.345	0.005	0.340	0.012	
Female	0.557	0.006	0.560	0.013	
High school grade point average	3.354	0.008	3.319	0.016	*
Student's age	20.106	0.017	19.929	0.036	***
Race/ethnicity					
White	0.582	0.010	0.594	0.014	
Black	0.123	0.006	0.195	0.013	***
Latinx	0.178	0.008	0.126	0.009	***
Asian	0.073	0.004	0.045	0.005	***
Native American	0.007	0.001	0.004	0.001	
Multiracial	0.038	0.002	0.036	0.004	
College characteristics					
College selectivity					
Open admission	0.052	0.007	0.041	0.007	
Minimally selective	0.060	0.008	0.070	0.012	
Moderately selective	0.657	0.020	0.685	0.024	
Very selective	0.230	0.019	0.204	0.022	
College sector					
Public	0.626	0.009	0.527	0.016	***
Private	0.255	0.009	0.319	0.015	***
For-profit	0.015	0.002	0.027	0.004	***
Multiple college types	0.104	0.003	0.127	0.007	**
HBCU	0.025	0.005	0.049	0.010	***
College tuition, fees, room and board (\$1000)	28.937	0.325	34.681	0.535	***
State or federal grant aid (\$1000)	4.657	0.090	3.341	0.118	***
Institutional grant aid (\$1000)	6.006	0.179	6.697	0.332	*
Student loans (\$1000)	5.409	0.091	6.500	0.081	***
Other types of aid (\$1000)	0.551	0.031	0.433	0.037	**
Parents' contribution (\$)	8319	162	8603	317	
N=	18,570		3,620		

Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05; Ns rounded to nearest tens per NCES disclosure rules



Notes: Analysis limited to dependent students enrolled in a four-year institution during the 2015-6 school year; Predicted values control for parents' education, marital status; students' race/ethnicity, nativity, gender, high school grade point average; College selectivity, sector, HBCU, college tuition, fees, room, and board, state and federal grant aid, institutional grant aid, student loans, and parents' contribution.



Notes: Analysis limited to dependent students enrolled in a four-year institution and applied to federal financial aid during the 2015-6 school year; Predicted values control for parents' education, marital status; students' race/ethnicity, nativity, gender, high school grade point average.

Appendix 3A. T-tests comparing parent and student characteristics of those with missing values for financial stress and those without missing values

	Sample without missing financial stress		Sample with missing financial stress		
	mean	SE	mean	SE	p
Young adult financial hardship measures					
Non-mortgage debt (\$)	39,333	849	67,875	6,783	
Parent borrowing					
Parents borrow through PLUS	0.25	0.01	0.18	0.03	*
Amount parents borrow through PLUS (\$)	4,666	260	4,785	1,294	
Young Adult Characteristics at age 26					
Educational attainment					
Not enrolled, no Bachelor's degree	0.21	0.01	0.25	0.04	***
Enrolled, no Bachelor's degree	0.21	0.01	0.27	0.04	
Bachelor's degree	0.43	0.01	0.20	0.03	***
Enrolled, with Bachelor's degree	0.15	0.01	0.28	0.04	***
Income (\$1000)	28,250	358	1,267	484	***
Works full-time	0.75	0.01	0.13	0.03	***
Relationship status					
Single	0.47	0.01	0.78	0.03	***
Married or partnered	0.51	0.01	0.19	0.03	***
Divorced/separated	0.02	0.003	0.03	0.014	
Has children	0.22	0.01	0.23	0.03	***
Female	0.56	0.01	0.48	0.04	**
Young adult race/ethnicity					
White	0.67	0.01	0.50	0.04	***
Black	0.14	0.01	0.19	0.03	**
Latinx	0.10	0.01	0.12	0.03	
Asian	0.04	0.003	0.13	0.022	***
Other racial/ethnic group	0.05	0.004	0.07	0.019	
Parents Characteristics					
Income					
Low income, \$50,000 or less	0.44	0.01	0.47	0.04	*

Low-middle income, \$50,001 - \$74,999	0.27	0.01	0.27	0.04	
Middle income, \$75,000 - 99,999	0.15	0.01	0.11	0.02	
Upper-middle income, \$100,000 - 200,000	0.12	0.01	0.11	0.02	*
High income, \$200,000+	0.02	0.002	0.03	0.009	
Parents' completed college	0.50	0.01	0.58	0.04	
Marital status					
Married	0.80	0.01	0.79	0.04	
Single, Divorced, or Separated	0.20	0.01	0.21	0.04	
N=	5,010		900		

Notes: Analysis limited to young adults who attended a four-year college and submitted a FAFSA application; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Ns rounded to nearest tens per NCES disclosure rules

Appendix 3B. Quintiles of PLUS on Youth Financial Wellbeing, N=5,010

	Financial Stress	Non-mortgage debt, logged	Debt-to-income ratio, mean	Debt-to-income ratio, median
PLUS Quintiles, Relative to No PLUS				
PLUS, \$1-6,000	-0.12 (0.13)	-0.93* (0.37)	-2.30* (1.13)	-0.22* (0.10)
PLUS, \$6,001-11,000	-0.07 (0.09)	-0.13 (0.31)	-3.26 (1.96)	-0.06 (0.10)
PLUS, \$11,001-18,043	-0.10 (0.11)	-0.29 (0.28)	-2.84 (1.53)	-0.10 (0.10)
PLUS, \$18,044-31,600	-0.05 (0.11)	-0.004 (0.33)	0.10 (2.14)	-0.003 (0.10)
PLUS, \$31,601-168,102	0.23* (0.09)	0.80** (0.23)	2.81 (2.80)	0.16 (0.10)
Controls	X	X	X	X
Constant	3.78*** (0.16)	8.29*** (0.44)	20.06* (9.62)	1.29 (0.11)

Notes: Analysis limited to young adults who attended a four-year college and did not attend graduate school; Standard errors in parentheses; Ns rounded to nearest tens per NCES disclosure rules; *** p<0.001, ** p<0.01, * p<0.05

Appendix 3C. Comparison of Coefficients from Ordinary Least Squares Regression Models and Conditional Quantile Regression Models of PLUS with and without a Spline

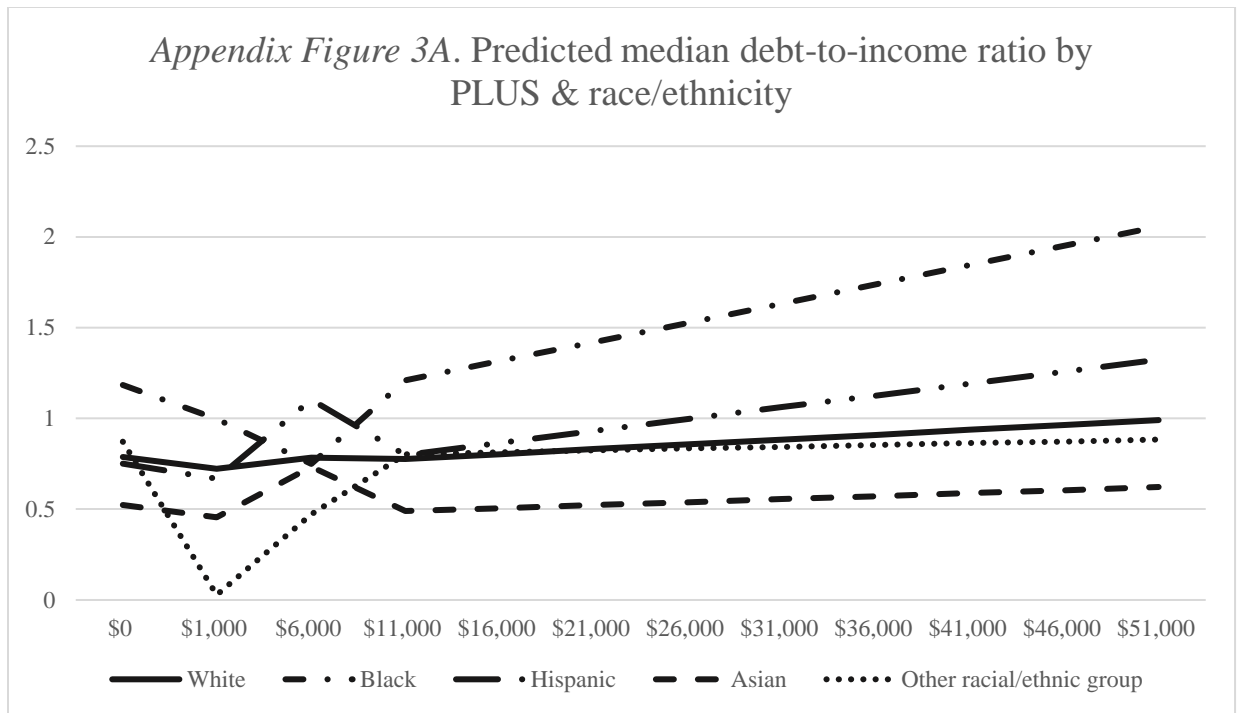
	Financial Stress		Mean Debt-to-income ratio		Median Debt-to-income ratio		Non-mortgage debt, logged	
	No		No		No		No	
	Spline	Spline	Spline	Spline	Spline	Spline	Spline	Spline
Parent ever borrowed through PLUS	-0.85*	-1.02*	- 14.00 *	-15.85*	- 0.90* *	-0.95*	-4.60**	-4.61**
	(0.40)	(0.44)	(6.59)	(7.39)	(0.29)	(0.36)	(1.56)	(1.40)
Parent borrowed through PLUS, Logged	0.11*	0.12*	1.66	1.73	0.12* *	0.11*	0.59**	0.53**
	(0.05)	(0.05)	(0.91)	(0.90)	(0.04)	(0.04)	(0.20)	(0.16)
Controls	X	X	X	X	X	X	X	X
Constant	4.48* **	3.66***	26.96 **	-18.27	2.20* **	1.17***	13.18* **	7.77***
	(0.42)	(0.17)	(8.18)	(9.58)	(0.30)	(0.12)	(1.60)	(0.47)

Notes: Analysis limited to young adults who attended a four-year college and did not attend graduate school; Standard errors in parentheses; Ns rounded to nearest tens per NCES disclosure rules; Controls are parents' income, marital status, education, young adults' race/ethnicity, gender, educational attainment, income, relationship status, and parenting status; *** p<0.001, ** p<0.01, * p<0.05

Appendix 3D. Distribution of Debt-to-income ratio

	Debt-to-income (no \$0 earners)	Debt-to-income (imputed \$0 earners)
Minimum	0	0
25th percentile	0.17	0.18
50th percentile	0.63	0.68
Mean	5.34	43.08
75th percentile	1.63	1.88
Maximum	6666.67	6666.67
N=	4,430	4,700

Notes: Analysis limited to young adults who attended a four-year college and submitted a FAFSA application; Ns rounded to nearest tens per NCES disclosure rules



Analysis limited to dependent students who ever enrolled in a four-year institution and applied to federal financial aid in Educational Longitudinal Study of 2002 data; Predicted values control for parents' income, education, marital status; students' gender, educational attainment, marital status, parenthood status, and economic situation. Predicted values were constructed without a spline for PLUS loans.

BIBLIOGRAPHY

- Addo, Fenaba R. 2014. "Debt, Cohabitation, and Marriage in Young Adulthood." *Demography* 51:1677–1701.
- Addo, Fenaba R., Jason N. Houle, and Sharon Sassler. 2019. "The Changing Nature of the Association Between Student Loan Debt and Marital Behavior in Young Adulthood." *Journal of Family and Economic Issues* 40(1):86–101. doi: 10.1007/s10834-018-9591-6.
- Addo, Fenaba R., Jason N. Houle, and Daniel Simon. 2016. "Young, Black, and (Still) in the Red: Parental Wealth, Race, and Student Loan Debt." *Race and Social Problems* 8(1):64–76. doi: 10.1007/s12552-016-9162-0.
- Allison, Paul D. 2001. *Missing Data*. Sage Publications.
- Alon, Sigal. 2007. "The Influence of Financial Aid in Leveling Group Differences in Graduating from Elite Institutions." *Economics of Education Review* 26(3):296–311.
- Alon, Sigal. 2011. "Who Benefits Most from Financial Aid? The Heterogeneous Effect of Need-Based Grants on Students' College Persistence*: Who Benefits Most from Financial Aid?" *Social Science Quarterly* 92(3):807–29. doi: 10.1111/j.1540-6237.2011.00793.x.
- Anderson, Greta. 2021. "Report: Students Think Value of College Declined." *Inside Higher Ed*, March 1.
- Aquilino, William S. 2005. "Impact of Family Structure on Parental Attitudes Toward the Economic Support of Adult Children Over the Transition to Adulthood." *Journal of Family Issues* 26(2):143–67. doi: 10.1177/0192513X04265950.
- Arber, Sara, Kirsty Fenn, and Robert Meadows. 2014. "Subjective Financial Well-Being, Income and Health Inequalities in Mid and Later Life in Britain." *Social Science & Medicine* 100:12–20. doi: 10.1016/j.socscimed.2013.10.016.
- Archuleta, Kristy L., Anita Dale, and Scott M. Spann. 2013. "College Students and Financial Distress: Exploring Debt, Financial Satisfaction, and Financial Anxiety." 24(2):13.
- Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez. 2011. "Top Incomes in the Long Run of History." *Journal of Economic Literature* 49:3–71.
- Attewell, P., S. Heil, and L. Reisel. 2011. "Competing Explanations of Undergraduate Noncompletion." *American Educational Research Journal* 48(3):536–59. doi: 10.3102/0002831210392018.

- Attewell, Paul, Scott Heil, and Liza Reisel. 2012. "What Is Academic Momentum? And Does It Matter?" *Educational Evaluation and Policy Analysis* 34(1):27–44. doi: 10.3102/0162373711421958.
- Avery, C., and Caroline M. Hoxby. 2003. "Do and Should Financial Aid Packages Affect Students' College Choices?"
- Baker, Dominique J. 2019. "When Average Is Not Enough: A Case Study Examining the Variation in the Influences on Undergraduate Debt Burden." *AERA Open* 5(2):233285841986015. doi: 10.1177/2332858419860153.
- Bandelj, Nina. 2020. "Relational Work in the Economy." *Annual Review of Sociology* 46(1):251–72. doi: 10.1146/annurev-soc-121919-054719.
- Baradaran, Mehrsa. 2019. *The Color of Money: Black Banks and the Racial Wealth Gap*. Cambridge, MA: Harvard University Press.
- Bastedo, Michael N., and Ozan Jaquette. 2011. "Running in Place: Low-Income Students and the Dynamics of Higher Education Stratification." *Educational Evaluation and Policy Analysis* 33(3):318–39. doi: 10.3102/0162373711406718.
- Baum, Sandy, Kristin Blagg, and Rachel Fishman. 2019. *Reshaping Parent PLUS Loans: Recommendations for Reforming the Parent PLUS Program*. Washington, DC: Urban Institute.
- Baum, Sandy, and Saul Schwartz. 2006. *How Much Debt Is Too Much? Defining Benchmarks for Manageable Student Debt*. New York: College Board.
- Bea, Megan Doherty, and Youngmin Yi. 2019. "Leaving the Financial Nest: Connecting Young Adults' Financial Independence to Financial Security: Leaving the Financial Nest." *Journal of Marriage and Family* 81(2):397–414. doi: 10.1111/jomf.12553.
- Becker, Gary S. 1981. *A Treatise on the Family*. Cambridge, MA: Harvard University Press.
- Becker, Gary S. 2009. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. 3rd Edition. Chicago, IL: University of Chicago Press.
- Bell, D. N. F., and D. G. Blanchflower. 2011. "Young People and the Great Recession." *Oxford Review of Economic Policy* 27(2):241–67. doi: 10.1093/oxrep/grr011.
- Benson, Janel E., and Frank F. Furstenberg. 2006. "Entry into Adulthood: Are Adult Role Transitions Meaningful Markers of Adult Identity?" *Advances in Life Course Research* 11:199–224. doi: 10.1016/S1040-2608(06)11008-4.

- Berger, L. M., and J. N. Houle. 2016. "Parental Debt and Childrens Socioemotional Well-Being." *PEDIATRICS* 137(2):e20153059–e20153059. doi: 10.1542/peds.2015-3059.
- Berger, Lawrence M., J. Michael Collins, and Laura Cuesta. 2016. "Household Debt and Adult Depressive Symptoms in the United States." *Journal of Family and Economic Issues* 37(1):42–57. doi: 10.1007/s10834-015-9443-6.
- Bleemer, Zachary, Meta Brown, Donghoon Lee, and Wilbert Van der Klaauw. 2014. "Debt, Jobs, or Housing: What's Keeping Millennials at Home?"
- Board of Governors of the Federal Reserve System, Alvaro A. Mezza, Daniel R. Ringo, Shane M. Sherlund, and Kamila Sommer. 2016. "On the Effect of Student Loans on Access to Homeownership." *Finance and Economics Discussion Series* 2016(010):1–35. doi: 10.17016/FEDS.2016.010.
- Bowen, William G., Matthew M. Chingos, and Michael S. McPherson. 2009. *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton University Press.
- Bozick, Robert. 2007. "Making It Through the First Year of College: The Role of Students' Economic Resources, Employment, and Living Arrangements." *Sociology of Education* 80(July):261–85.
- Bozick, Robert, and Angela Estacion. 2014. "Do Student Loans Delay Marriage? Debt Repayment and Family Formation in Young Adulthood." *Demographic Research* 30:1865.
- Bresciani, Marilee J., and Lewis Carson. 2002. "A Study of Undergraduate Persistence by Unmet Need and Percentage of Gift Aid." *Journal of Student Affairs Research and Practice* 40(1). doi: 10.2202/1949-6605.1193.
- Bricker, Jesse, and Jeffrey Thompson. 2016. "DOES EDUCATION LOAN DEBT INFLUENCE HOUSEHOLD FINANCIAL DISTRESS? AN ASSESSMENT USING THE 2007-2009 SURVEY OF CONSUMER FINANCES PANEL: EDUCATION LOANS AND FINANCIAL DISTRESS." *Contemporary Economic Policy* 34(4):660–77. doi: 10.1111/coep.12164.
- Britton, Marcus L. 2013. "Race/Ethnicity, Attitudes, and Living With Parents During Young Adulthood: Living With Parents During Young Adulthood." *Journal of Marriage and Family* 75(4):995–1013. doi: 10.1111/jomf.12042.
- Buchmann, Claudia, Thomas A. DiPrete, and Anne McDaniel. 2008. "Gender Inequalities in Education." *Annual Review of Sociology* 34(1):319–37. doi: 10.1146/annurev.soc.34.040507.134719.
- Burke, Lilah. 2021. "Biden Releases Budget Plan." *Inside Higher Ed*, April 9.

- Burke, William J. 2009. "Fitting and Interpreting Cragg's Tobit Alternative Using Stata." *The Stata Journal* 9(4):11.
- Busta, Hallie. 2021. "Bill Calls for Free College and Doubling the Pell Grant." *Higher Ed Dive*, April 21.
- Carlson, Marcia J., and Paula England. 2011. "Social Class and Family Patterns in the United State." in *Social Class and Changing Families in an Unequal America*, edited by M. J. Carlson and P. England. Stanford, CA: Stanford University Press.
- Cellini, Stephanie Riegg, Rajeev Darolia, and Dubravka Ritter. 2020. *Credit Standards in the PLUS Student Loan Program: Examining Access and Equity*. Washington, DC: Brookings Institute.
- Cepa, Kennan, and Frank F. Furstenberg. 2021. "Reaching Adulthood: Persistent Beliefs about the Importance and Timing of Adult Milestones." *Journal of Family Issues* 42(1):31.
- Cha, Kyung-Wook, Robert O. Weagley, and Laura Reynolds. 2005. "Parental Borrowing for Dependent Children's Higher Education." *Journal of Family and Economic Issues* 26(3):299–321. doi: 10.1007/s10834-005-5900-y.
- Chapman, Bruce, and Lorraine Dearden. 2017. "Conceptual and Empirical Issues for Alternative Student Loan Designs: The Significance of Loan Repayment Burdens for the United States." *The ANNALS of the American Academy of Political and Social Science* 671(1):249–68. doi: 10.1177/0002716217703969.
- Chen, Rong. 2008. "Financial Aid and Student Dropout in Higher Education: A Heterogeneous Research Approach." Pp. 209–39 in *Higher Education*. Vol. 23, *Handbook of Theory and Research*, edited by J. C. Smart. Dordrecht: Springer Netherlands.
- Chen, Rong, and Stephen L. DesJardins. 2010. "Investigating the Impact of Financial Aid on Student Dropout Risks: Racial and Ethnic Differences." *The Journal of Higher Education* 81(2):179–208. doi: 10.1080/00221546.2010.11779048.
- Chen, Rong, and Mark Wiederspan. 2014. "Understanding the Determinants of Debt Burden among College Graduates." *The Journal of Higher Education* 85(4):565–98. doi: 10.1080/00221546.2014.11777340.
- Cherney, Katrina, David Rothwell, Joyce Serido, and Soyeon Shim. 2020. "Subjective Financial Well-Being During Emerging Adulthood: The Role of Student Debt." *Emerging Adulthood* 8(6):485–95. doi: 10.1177/2167696819879252.
- Chiteji, Ngina S. 2007. "To Have and to Hold: An Analysis of Young Adult Debt." *The Price of Independence: The Economics of Early Adulthood* 231–51.

- Cohen, Patricia, and Tiffany Hsu. 2020. "'Sudden Black Hole' for the Economy with Millions More Unemployed." *New York Times*, April 9.
- College Board. 2018. "Trends in College Pricing 2018." 36.
- Conger, Katherine J., Martha A. Rueter, and Rand D. Conger. 2000. "The Role of Economic Pressure in the Lives of Parents and Their Adolescents: The Family Stress Model." Pp. 201–3 in *Negotiating adolescence in times of social change*, edited by L. J. Crockett and R. K. Silbereisen. Cambridge University Press.
- Cooney, Teresa M., and Peter Uhlenberg. 1992. "Support from Parents over the Life Course: The Adult Child's Perspective." *Social Forces* 71(1):63. doi: 10.2307/2579966.
- Cottom, Tressie McMillan. 2017. *Lower Ed: The Troubling Rise of For-Profit Colleges in the New Economy*. New York: The New Press.
- Crosnoe, Robert. 2014. "Youth, Economic Hardship, and the Worldwide Great Recession." *Longitudinal and Life Course Studies* 5(2). doi: 10.14301/lcs.v5i2.296.
- Dale, Stacy Berg, and Alan B. Krueger. 2002. "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables." *Quarterly Journal of Economics* 117(4):1491–1527.
- DeBelle, Guy. 2004. "Macroeconomic Implications of Rising Household Debt."
- Deil-Amen, Regina, and Ruth López Turley. 2007. "A Review of the Transition to College Literature in Sociology." *The Teachers College Record* 109(10):2324–66.
- Delaney, Jennifer A. 2014. "The Role of State Policy in Promoting College Affordability." *The Annals of the American Academy of Political and Social Science* 655(1):23.
- Despard, Mathieu R., Dana Perantie, Samuel Taylor, Michal Grinstein-Weiss, Terri Friedline, and Ramesh Raghavan. 2016. "Student Debt and Hardship: Evidence from a Large Sample of Low- and Moderate-Income Households." *Children and Youth Services Review* 70:8–18. doi: 10.1016/j.childyouth.2016.09.001.
- Di, Wenhua, Carla Fletcher, and Jeff Webster. 2019. "A Rescue or A Trap?--An Analysis of Parent PLUS Student Loans.Pdf." Austin, TX.
- Dougal, Casey, Pengjie Gao, William J. Mayew, and Christopher A. Parsons. 2019. "What's in a (School) Name? Racial Discrimination in Higher Education Bond Markets." *Journal of Financial Economics* 134(3):570–90. doi: 10.1016/j.jfineco.2019.05.010.

- Dowd, Alicia C., and Tarek Coury. 2006. "The Effect of Loans on the Persistence and Attainment of Community College Students." *Research in Higher Education* 47(1):33–62. doi: 10.1007/s11162-005-8151-8.
- Doyle, William R. 2010. "Changes in Institutional Aid, 1992–2003: The Evolving Role of Merit Aid." *Research in Higher Education* 51(8):789–810. doi: 10.1007/s11162-010-9177-0.
- Drentea, Patricia. 2000. "Age, Debt and Anxiety." *Journal of Health and Social Behavior* 41(4):437. doi: 10.2307/2676296.
- Drentea, Patricia, and John R. Reynolds. 2015. "Where Does Debt Fit in the Stress Process Model?" *Society and Mental Health* 5(1):16–32. doi: 10.1177/2156869314554486.
- Dwyer, Rachel E. 2018. "Credit, Debt, and Inequality." *Annual Review of Sociology* 44(1):237–61. doi: 10.1146/annurev-soc-060116-053420.
- Dwyer, Rachel E., Randy Hodson, and Laura McCloud. 2013. "Gender, Debt, and Dropping Out of College." *Gender & Society* 27(1):30–55. doi: 10.1177/0891243212464906.
- Dwyer, Rachel E., Laura McCloud, and Randy Hodson. 2012. "Debt and Graduation from American Universities." *Social Forces* 90(4):1133–55. doi: 10.1093/sf/sos072.
- Elder, Glen H. 1985. *Life Course Dynamics*. Ithaca: Cornell University Press.
- Elder, Glen H. 1994. "Time, Human Agency, and Social Change: Perspectives on the Life Course." *Social Psychology Quarterly* 57(1):4–15. doi: 10.2307/2786971.
- Elliott, William, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11):2312–28. doi: 10.1016/j.childyouth.2011.08.001.
- Elliott, William, and Terri Friedline. 2013. "'You Pay Your Share, We'll Pay Our Share': The College Cost Burden and the Role of Race, Income, and College Assets." *Economics of Education Review* 33:134–53. doi: 10.1016/j.econedurev.2012.10.001.
- Elliott, William, and IISung Nam. 2013. "Is Student Debt Jeopardizing the Short-Term Financial Health of U.S. Households?" *Federal Reserve Bank of St. Louis Review* 95(5):405–24.
- Epperson, Sharon, and Jessica Dickler. 2019. "The Latest Victims of the Student Debt Crisis--Parents." *CNBC*, May 11.

- Fan, Lu, and Swarn Chatterjee. 2019. "Financial Socialization, Financial Education, and Student Loan Debt." *Journal of Family and Economic Issues* 40(1):74–85. doi: 10.1007/s10834-018-9589-0.
- Federal Reserve Bank of New York. 2019. *Quarterly Report on Household Debt and Credit 2019:Q2*. New York, NY: Center for Microeconomic Data at the Federal Reserve Bank of New York.
- Federal Reserve Bank of New York. 2020. *Quarterly Report on Household Debt and Credit 2020:Q4*. New York, NY: Center for Microeconomic Data at the Federal Reserve Bank of New York.
- Federal Student Aid. 2020. "Student Loan Repayment." *Federal Student Aid: An Office of the U.S. Department of Education*. Retrieved September 4, 2020 (<https://studentaid.gov/manage-loans/repayment>).
- Federal Student Aid. 2021. "Receiving Financial Aid." *Federal Student Aid: An Office of the U.S. Department of Education*. Retrieved February 25, 2021 (<https://studentaid.gov/complete-aid-process/receive-aid>).
- Fingerman, Karen L., Yen-Pi Cheng, Kira Birditt, and Steven Zarit. 2012. "Only as Happy as the Least Happy Child: Multiple Grown Children's Problems and Successes and Middle-Aged Parents' Well-Being." *The Journals of Gerontology: Series B* 67B(2):184–93. doi: 10.1093/geronb/gbr086.
- Fingerman, Karen L., Yen-Pi Cheng, Lauren Tighe, Kira S. Birditt, and Steven Zarit. 2012. "Relationships Between Young Adults and Their Parents." Pp. 59–85 in *Early Adulthood in a Family Context*, edited by A. Booth, S. L. Brown, N. S. Landale, W. D. Manning, and S. M. McHale. New York, NY: Springer New York.
- Fingerman, Karen L., Meng Huo, and Kira S. Birditt. 2020. "A Decade of Research on Intergenerational Ties: Technological, Economic, Political, and Demographic Changes." *Journal of Marriage and Family* 82(1):383–403. doi: 10.1111/jomf.12604.
- Fingerman, Karen L., Jori Sechrist, and Kira Birditt. 2013. "Changing Views on Intergenerational Ties." *Gerontology* 59(1):64–70. doi: 10.1159/000342211.
- Fingerman, Karen, Laura Miller, Kira Birditt, and Steven Zarit. 2009. "Giving to the Good and the Needy: Parental Support of Grown Children." *Journal of Marriage and Family* 71(5):1220–33. doi: 10.1111/j.1741-3737.2009.00665.x.
- Fishman, Rachel. 2018. *How Federal Loans Exacerbate Inequality for Black Families. Education Policy*. Washington, DC: New America Foundation.

- Fomby, Paula, and Nicole Kravitz-Wirtz. 2019. "Family Systems and Parents' Financial Support for Education in Early Adulthood." *Demography*. doi: 10.1007/s13524-019-00807-0.
- Fourcade, Marion, and Kieran Healy. 2013. "Classification Situations: Life-Chances in the Neoliberal Era." *Accounting, Organizations and Society* 38(8):559–72. doi: 10.1016/j.aos.2013.11.002.
- Friedline, Terri, Emily Rauscher, Stacia West, Barbara Phipps, Nadzeya Kardash, Karin Chang, and Meghan Ecker-Lyster. 2017. "'They Will Go like I Did': How Parents Think about College for Their Young Children in the Context of Rising Costs." *Children and Youth Services Review* 81:340–49. doi: 10.1016/j.chilyouth.2017.08.027.
- Furstenberg, Frank F. 2010. "On a New Schedule: Transitions to Adulthood and Family Change." *The Future of Children* 20(1):67–87. doi: 10.1353/foc.0.0038.
- Furstenberg, Frank F., and Sheela Kennedy. 2016. "Growing Up Is Harder to Do 2: After the Great Recession." *Contexts Blog*. Retrieved February 22, 2018 (<https://contexts.org/blog/growing-up-is-harder-to-do-2-after-the-great-recession/>).
- Furstenberg, Frank F., Ruben G. Rumbaut, and Richard A. Settersten. 2005. "On the Frontier of Adulthood: Emerging Themes and New Directions." in *On the Frontier of Adulthood: Theory, Research, and Public Policy*. Chicago, IL: University of Chicago Press.
- Gerber, Theodore P., and Sin Yi Cheung. 2008. "Horizontal Stratification in Postsecondary Education: Forms, Explanations, and Implications." *Annual Review of Sociology* 34(1):299–318. doi: 10.1146/annurev.soc.34.040507.134604.
- Goldrick-Rab, Sara, Douglas N. Harris, and Philip A. Trostel. 2009. "Why Financial Aid Matters (or Does Not) for College Success: Toward a New Interdisciplinary Perspective." Pp. 1–45 in *Higher Education: Handbook of Theory and Research*. Vol. 24, edited by J. C. Smart. Dordrecht: Springer Netherlands.
- Goldrick-Rab, Sara, Robert Kelchen, Douglas N. Harris, and James Benson. 2016. "Reducing Income Inequality in Educational Attainment: Experimental Evidence on the Impact of Financial Aid on College Completion." *American Journal of Sociology* 121(6):1762–1817. doi: 10.1086/685442.
- Goldrick-Rab, Sara, and Tammy Kolbe. 2016. "A Matter of Trust: Applying Insights From Social Psychology to Make College Affordable." *Policy Insights from the Behavioral and Brain Sciences* 3(2):237–44. doi: 10.1177/2372732216656457.

- Goyette, Kimberly A. 2008. "College for Some to College for All: Social Background, Occupational Expectations, and Educational Expectations over Time." *Social Science Research* 37(2):461–84. doi: 10.1016/j.ssresearch.2008.02.002.
- Grinstein-Weiss, Michal, Dana C. Perantie, Samuel H. Taylor, Shenyang Guo, and Ramesh Raghavan. 2016. "Racial Disparities in Education Debt Burden among Low- and Moderate-Income Households." *Children and Youth Services Review* 65:166–74. doi: 10.1016/j.chilyouth.2016.04.010.
- Grinstein-Weiss, Michal, Kristen Wages, and Fred M. Ssewamala. 2006. "Saving and Asset Accumulation among Low-Income Families with Children in IDAs." *Children and Youth Services Review* 28(2):193–211.
- Hamilton, Laura, Josipa Roksa, and Kelly Nielsen. 2018. "Providing a "Leg Up": Parental Involvement and Opportunity Hoarding in College." *Sociology of Education* 91(2):111–31. doi: 10.1177/0038040718759557.
- Hamilton, Laura T. 2013. "More Is More or More Is Less? Parental Financial Investments during College." *American Sociological Review* 78(1):70–95. doi: 10.1177/0003122412472680.
- Hamilton, Laura T. 2016. *Parenting to a Degree: How Family Matters for College Women's Success*. University of Chicago Press.
- Harris, Alexes, Heather Evans, and Katherine Beckett. 2010. "Drawing Blood from Stones: Legal Debt and Social Inequality in the Contemporary United States." *American Journal of Sociology* 115(6):1753–99. doi: 10.1086/651940.
- Hartnett, Caroline Sten, Frank F. Furstenberg, Kira S. Birditt, and Karen L. Fingerman. 2013. "Parental Support During Young Adulthood Why Does Assistance Decline With Age?" *Journal of Family Issues* 34(7):975–1007.
- Hayes, Adam, and Rourke O'Brien. 2020. "Earmarking Risk: Relational Investing and Portfolio Choice." *Social Forces*. doi: 10.1093/sf/soaa025.
- Heller, Donald E. 1997. "Student Price Response in Higher Education: An Update to Leslie and Brinkman." *The Journal of Higher Education* 68(6):624. doi: 10.2307/2959966.
- Henretta, John C., Douglas A. Wolf, Matthew F. Van Voorhis, and Beth J. Soldo. 2012. "Family Structure and the Reproduction of Inequality: Parents' Contribution to Children's College Costs." *Social Science Research* 41(4):876–87. doi: 10.1016/j.ssresearch.2012.02.008.
- Herzog, Serge. 2018. "Financial Aid and College Persistence: Do Student Loans Help or Hurt?" *Research in Higher Education* 59(3):273–301. doi: 10.1007/s11162-017-9471-1.

- Hess, Abigail Johnson. 2020. "How Student Debt Became a \$1.6 Trillion Crisis." *CNBC*, June 12.
- Hillman, Nicholas W. 2014. "College on Credit: A Multilevel Analysis of Student Loan Default." *The Review of Higher Education* 37(2):169–95. doi: 10.1353/rhe.2014.0011.
- Hodson, Randy, Rachel E. Dwyer, and Lisa A. Neilson. 2014. "Credit Card Blues: The Middle Class and the Hidden Costs of Easy Credit." *The Sociological Quarterly* 55(2):315–40. doi: 10.1111/tsq.12059.
- Houle, Jason. 2014a. "A Generation Indebted: Young Adult Debt across Three Cohorts." *Social Problems* 61(3):1–18.
- Houle, Jason. 2014b. "Disparities in Debt: Parents' Socioeconomic Resources and Young Adult Student Loan Debt." *Sociology of Education* 87(1):53–69. doi: 10.1177/0038040713512213.
- Houle, Jason, and Lawrence Berger. 2015. "Is Student Loan Debt Discouraging Home Buying Among Young Adults?" *Social Service Review* 89(4).
- Houle, Jason N., and Fenaba R. Addo. 2018. "Racial Disparities in Student Debt and the Reproduction of the Fragile Black Middle Class." *Sociology of Race and Ethnicity* 233264921879098. doi: 10.1177/2332649218790989.
- Houle, Jason N., and Cody Warner. 2017. "Into the Red and Back to the Nest? Student Debt, College Completion, and Returning to the Parental Home among Young Adults." *Sociology of Education* 90(1):89–108. doi: 10.1177/0038040716685873.
- Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38(1):379–400. doi: 10.1146/annurev.soc.012809.102503.
- Ingels, S. J. 2014. "Education Longitudinal Study of 2002 (ELS:2002) Third Follow-Up Data File Documentation." 157.
- Iruka, I. U., D. R. LaForett, and E. C. Odom. 2012. "Examining the Validity of the Family Investment and Stress Models and Relationship to Children's School Readiness across Five Cultural Groups." *Journal of Family Psychology* 26(3):359–70.
- Ishitani, Terry T., and Stephen L. DesJardins. 2002. "A Longitudinal Investigation of Dropout from College in the United States." *Journal of College Student Retention: Research, Theory & Practice* 4(2):173–201. doi: 10.2190/V4EN-NW42-742Q-2NTL.

- Jackson, Brandon A., and John R. Reynolds. 2013. "The Price of Opportunity: Race, Student Loan Debt, and College Achievement." *Sociological Inquiry* 83(3):335–68.
- Jalbert, Stewart, and Johnson. 2010. "The College or Retirement Decision." *Journal of Personal Finance* 9:78–100.
- Jaschik, Scott. 2013. "Jobs, Value and Affirmative Action: A Survey of Parents about College." *Inside Higher Ed*, March 20.
- Jaschik, Scott. 2020. "Doubts About Going to College." *Inside Higher Ed*, December 7.
- Johnson, Matthew T., Julie Bruch, and Brian Gill. 2019. "Changes in HBCU Financial Aid and Student Enrollment After the Tightening of PLUS Credit Standards." *Journal of Student Financial Aid* 48(2).
- Kalmijn, Matthijs, and Paul M. De Graaf. 2012. "Life Course Changes of Children and Well-Being of Parents." *Journal of Marriage and Family* 74(2):269–80. doi: 10.1111/j.1741-3737.2012.00961.x.
- Kantrowitz, Mark. 2015. *Who Graduates with Excessive Student Loan Debt?* Student Aid Policy Analysis Papers.
- Kargar, Mahyar, and William Mann. 2018. "Student Loans, Marginal Costs, and Markups: Estimates from the PLUS Program."
- Keister, Lisa A., and Hang Young Lee. 2014. "The One Percent: Top Incomes and Wealth in Sociological Research." *Social Currents* 1(1):13–24. doi: 10.1177/2329496513510900.
- Keister, Lisa A., and Stephanie Moller. 2000. "Wealth Inequality in the United States." *Annual Review of Sociology* 26(1):63–81. doi: 10.1146/annurev.soc.26.1.63.
- Kelchen, Robert, and Amy Y. Li. 2017. "Institutional Accountability: A Comparison of the Predictors of Student Loan Repayment and Default Rates" edited by L. W. Perna and N. W. Hillman. *Understanding Student Debt: Who Borrows, the Consequences of Borrowing, and the Implications for Federal Policy* 671.
- Kelly, Andrew, and Sara Goldrick-Rab, eds. 2014. *Reinventing Financial Aid: Charting a New Course to College Affordability*. Cambridge, MA: Harvard Education Press.
- Killewald, Alexandra. 2013. "Return to Being Black, Living in the Red: A Race Gap in Wealth That Goes Beyond Social Origins." *Demography* 50(4):1177–95. doi: 10.1007/s13524-012-0190-0.
- Killewald, Alexandra, and Brielle Bryan. 2016. "Does Your Home Make You Wealthy?" *The Russell Sage Foundation Journal of the Social Sciences* 2(6):110–28.

- Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43(1):379–404. doi: 10.1146/annurev-soc-060116-053331.
- Kim, Jinhee, and Swarn Chatterjee. 2019. "Student Loans, Health, and Life Satisfaction of US Households: Evidence from a Panel Study." *Journal of Family and Economic Issues* 40(1):36–50. doi: 10.1007/s10834-018-9594-3.
- Kim, Kyoung Tae, and Melissa J. Wilmarth. 2016. "Government Subsidies and Household Debt Burden After the Great Recession." *Journal of Family and Economic Issues* 37(3):349–58. doi: 10.1007/s10834-016-9492-5.
- Kirkpatrick Johnson, Monica. 2013. "Parental Financial Assistance and Young Adults' Relationships With Parents and Well-Being: Parental Financial Assistance." *Journal of Marriage and Family* 75(3):713–33. doi: 10.1111/jomf.12029.
- Konczal, Mike. 2019. "The Student Debt Problem Is a Family Crisis." *The Nation*, September 20.
- Kornrich, Sabino, and Frank Furstenberg. 2013. "Investing in Children: Changes in Parental Spending on Children, 1972–2007." *Demography* 50(1):1–23. doi: 10.1007/s13524-012-0146-4.
- Kus, Basak. 2015. "Sociology of Debt: States, Credit Markets, and Indebted Citizens: States, Credit Markets, and Indebted Citizens." *Sociology Compass* 9(3):212–23. doi: 10.1111/soc4.12247.
- Labaree, David F. 1997. "Public Goods, Private Goods: The American Struggle Over Educational Goals." *American Educational Research Journal* 34(1):39–81.
- Lee, Jinkook, and Hyungsoo Kim. 2007. "A Longitudinal Analysis of the Impact of Health Shocks on the Wealth of Elders." *Journal of Population Economics* 21(1):217–30. doi: 10.1007/s00148-007-0156-5.
- Leicht, Kevin, and Scott Fitzgerald. 2006. *Postindustrial Peasants: The Illusion of Middle-Class Prosperity*. New York: Worth Publishers.
- Lewin-Epstein, Noah, and Moshe Semyonov. 2016. "Household Debt in Midlife and Old Age: A Multinational Study." *International Journal of Comparative Sociology* 57(3):151–72. doi: 10.1177/0020715216653798.
- Long, Bridget Terry, and Erin Riley. 2007a. "Financial Aid: A Broken Bridge to College Access?" *Harvard Educational Review* 77(1):39–63. doi: 10.17763/haer.77.1.765h8777686r7357.

- Long, Bridget Terry, and Erin Riley. 2007b. "Financial Aid: A Broken Bridge to College Access?" *Harvard Educational Review* 77(1):39–63. doi: 10.17763/haer.77.1.765h8777686r7357.
- Looney, Adam. 2021. "Putting Student Loan Forgiveness in Perspective: How Costly Is It and Who Benefits?" *Up Front*. Retrieved March 8, 2021 (<https://www.brookings.edu/blog/up-front/2021/02/12/putting-student-loan-forgiveness-in-perspective-how-costly-is-it-and-who-benefits/>).
- Looney, Adam, and Constantine Yannelis. 2015. "A Crisis in Student Loans?: How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Defaults." *Brookings Papers on Economic Activity* 2015(2):1–89. doi: 10.1353/eca.2015.0003.
- López Turley, Ruth N., and Matthew Desmond. 2011. "Contributions to College Costs by Married, Divorced, and Remarried Parents." *Journal of Family Issues* 32(6):767–90. doi: 10.1177/0192513X10388013.
- Lucas, Samuel R. 2001. "Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects." *American Journal of Sociology* 106(6):1642–90. doi: 10.1086/321300.
- Luna-Torres, Maria, Lyle McKinney, Catherine Horn, and Sara Jones. 2018. "Understanding Loan Use and Debt Burden Among Low-Income and Minority Students at a Large Urban Community College." *Journal of Student Financial Aid* 48(1):27.
- Ma, Jennifer, Sandy Baum, Matea Pender, and CJ Libassi. 2018. *Trends in College Pricing 2018*. New York: The College Board.
- Ma, Jennifer, Sandy Baum, Matea Pender, and CJ Libassi. 2019. *Trends in College Pricing 2019*. New York: College Board.
- Ma, Jennifer, Matea Pender, and Meredith Welch. 2016. *Education Pays 2016: The Benefits of Higher Education for Individuals and Society*. New York: College Board.
- MacLeod, Jay. 2009. *Ain't No Makin' It: Aspirations and Attainment in a Low-Income Neighborhood*. 3rd ed. Boulder, CO: Westview Press.
- Mann, Allison. 2011. "The Effect of Late-Life Debt Use on Retirement Decisions." *Social Science Research* 40(6):1623–37. doi: 10.1016/j.ssresearch.2011.05.004.
- Maroto, Michelle. 2017. "When the Kids Live at Home: Coresidence, Parental Assets, and Economic Insecurity." *Journal of Marriage and Family* 79(4):1041–59. doi: 10.1111/jomf.12407.

- Maroto, Michelle. 2018. "Saving, Sharing, or Spending? The Wealth Consequences of Raising Children." *Demography* 55(6):2257–82. doi: 10.1007/s13524-018-0716-1.
- Marsh, Lawrence, and David R. Cormier. 2002. *Spline Regression Models*. Thousand Oaks, CA: Sage.
- Masarik, April S., and Rand D. Conger. 2017. "Stress and Child Development: A Review of the Family Stress Model." *Current Opinion in Psychology* 13:85–90. doi: 10.1016/j.copsyc.2016.05.008.
- McCabe, Janice, and Brandon A. Jackson. 2016. "Pathways to Financing College: Race and Class in Students' Narratives of Paying for School." *Social Currents* 3(4):367–85.
- McCloud, Laura, and Rachel E. Dwyer. 2011. "The Fragile American: Hardship and Financial Troubles in the 21st Century." *The Sociological Quarterly* 52(1):13–35. doi: 10.1111/j.1533-8525.2010.01197.x.
- McClure, Tracae. 2017. "Does PLUS Push? A Multilevel Analysis of the Relationship between PLUS Loans and Persistence." Dissertation, The George Washington University, Washington, DC.
- Mezza, Alvaro A., Daniel R. Ringo, Shane M. Sherlund, and Kamila Sommer. 2016. "On the Effect of Student Loans on Access to Homeownership."
- Modigliani, Franco. 1986. "Life Cycle, Individual Thrift, and the Wealth of Nations." *Science* 234(4777):704–12.
- Murakami, Kery. 2020. "A New Call to Increase Pell." *Inside Higher Ed*, July 21.
- Murakami, Kery. 2021. "Large Debate Looms over Canceling Parents' Debt for Student Loans." *Inside Higher Ed*, January 28.
- Nadworny, Elissa. 2021. "Debate over Student Loan Forgiveness Hingest on Two Numbers: \$10,000 vs. \$50,000." *NPR*, February 18.
- Nam, Yunju. 2020. "Parents' Financial Assistance for College and Black-White Disparities in Post-Secondary Educational Attainment." *Children and Youth Services Review* 110:104828. doi: 10.1016/j.childyouth.2020.104828.
- Napolitano, Laura J., Shelley Pacholok, and Frank F. Furstenberg. 2014. "Educational Aspirations, Expectations, and Realities for Middle-Income Families." *Journal of Family Issues* 35(9):1200–1226. doi: 10.1177/0192513X13479334.
- National Center for Education Statistics. 2016. *Percentage of Undergraduate Students Ages 18 to 24 in Their 4th (Senior) Year or above Who Ever Received Federal*

- Loans, Nonfederal Loans, or Parent Loans for Undergraduate Students (PLUS)*. Table 331.95. Washington, DC: Institute for Education Sciences.
- National Center for Education Statistics. 2019. *Undergraduate Retention and Graduation Rates*. Washington, DC: Institute for Education Sciences.
- National Center for Education Statistics. 2020. *Percentage of Undergraduate Students Ages 18 to 24 in Their 4th (Senior) Year or above Who Ever Received Federal Loans, Nonfederal Loans, or Parent Loans for Undergraduate Students (PLUS)*. Table 331.95. Washington, DC: Institute for Education Sciences.
- Newland, R. P., K. A. Crnic, M. J. Cox, and W. R. Mills-Koonce. 2013. "The Family Model Stress and Maternal Psychological Symptoms: Mediated Pathways from Economic Hardship to Parenting." *Journal of Family Psychology* 27(1):96–105.
- Oliver, Melvin L., and Thomas M. Shapiro. 2006. *Black Wealth/White Wealth: A New Perspective on Racial Inequality*. New York, NY: Routledge.
- Parker, Sarah, Nancy Castillo, Thea Garon, and Rob Levy. 2016. *Eight Ways to Measure Financial Health*. Chicago, IL: Center for Financial Services Innovation.
- Paulsen, Michael B., and Edward P. St. John. 2002. "Social Class and College Costs: Examining the Financial Nexus between College Choice and Persistence." *The Journal of Higher Education* 73(2):189–236. doi: 10.1080/00221546.2002.11777141.
- Percheski, Christine, and Christina Gibson-Davis. 2020. "A Penny on the Dollar: Racial Inequalities in Wealth among Households with Children." *Socius: Sociological Research for a Dynamic World* 6:237802312091661. doi: 10.1177/2378023120916616.
- Perna, Laura W. 2006. "STUDYING COLLEGE ACCESS AND CHOICE: A PROPOSED CONCEPTUAL MODEL." Pp. 99–157 in *HIGHER EDUCATION*:. Vol. 21, edited by J. C. Smart. Dordrecht: Kluwer Academic Publishers.
- Perna, Laura W. 2008. "Understanding High School Students' Willingness to Borrow to Pay College Prices." *Research in Higher Education* 49(7):589–606. doi: 10.1007/s11162-008-9095-6.
- Perna, Laura W., and Chunyan Li. 2006. "College Affordability: Implications for College Opportunity." *NASFAA Journal of Student Financial Aid* 36(1):7–24.
- Porter, Katherine, ed. 2012. *Broke: How Debt Bankrupts the Middle-Class*. Stanford, CA: Stanford University Press.
- Posselt, Julie Renee, Ozan Jaquette, Rob Bielby, and Michael N. Bastedo. 2012. "Access Without Equity: Longitudinal Analyses of Institutional Stratification by Race and

- Ethnicity, 1972–2004.” *American Educational Research Journal* 49(6):1074–1111. doi: 10.3102/0002831212439456.
- Presley, Jennifer B., and Suzanne B. Clery. 2001. *Middle Income Undergraduates: Where They Enroll and How They Pay for Their Education. Statistical Analysis Report*. NCES 2001-155. Washington, DC: National Center for Education Statistics.
- Price, Derek V. 2004. “Educational Debt Burden Among Student Borrowers: An Analysis of the Baccalaureate & Beyond Panel, 1997 Follow-Up.” *Research in Higher Education* 45(7):701–37. doi: 10.1023/B:RIHE.0000044228.54798.4c.
- Proctor, Bernadette D., Jessica L. Semega, and Melissa A. Kollar. 2016a. *Table 1. Income and Earnings Summary Measures by Selected Characteristics: 2014 and 2015*. P60-256. Washington, DC: U.S. Census Bureau.
- Proctor, Bernadette D., Jessica L. Semega, and Melissa A. Kollar. 2016b. *Table A-2. Selected Measures of Household Income Dispersion: 1967 to 2015*. P60-256. Washington, DC: U.S. Census Bureau.
- Protopsaltis, Spiros, and Sharon Parrott. 2017. *Pell Grants - a Key Tool for Expanding College Access and Economic Opportunity - Need Strengthening, Not Cuts*. Washington, DC: Center on Budget and Policy Priorities.
- Quadlin, Natasha. 2017. “Funding Sources, Family Income, and Fields of Study in College.” *Social Forces* 96(1):91–120. doi: 10.1093/sf/sox042.
- Quadlin, Natasha, and Jordan A. Conwell. 2020. “Race, Gender, and Parental College Savings: Assessing Economic and Academic Factors.” *Sociology of Education* 003804072094292. doi: 10.1177/0038040720942927.
- Quadlin, Natasha Yurk, and Daniel Rudel. 2015. “Responsibility or Liability? Student Loan Debt and Time Use in College.” *Social Forces* 94(2):589–614. doi: 10.1093/sf/sov053.
- Radford, Alexandria Walton, L. Berkner, S. Wheelless, and B. Shephard. 2010. *Persistence and Attainment of 2003-04 Beginning Postsecondary Students: After 6 Years*. NCES 2011-151. Washington, DC: U.S. Department of Education. National Center for Education Statistics.
- Radwin, David, and Christina Chang Wei. 2015. “What Is the Price of College? Total, Net, and Out-of-Pocket Prices by Type of Institution in 2011–12.” 24.
- Rauscher, Emily. 2016. “Passing It On: Parent-to-Adult Child Transfers for Education and Socioeconomic Attainment.” *Russell Sage Foundation Journal of the Social Sciences* 2(6):172–96.

- Roksa, Josipa, Eric Grodsky, Richard Arum, and Adam Gamoran. 2007. "United States: Changes in Higher Education and Social Stratification." in *Stratification in Higher Education: A Comparative Study*, edited by Y. Shavit, R. Arum, and A. Gamoran. Stanford University Press.
- Rowan-Kenyon, Heather T., Angela D. Bell, and Laura W. Perna. 2008. "Contextual Influences on Parental Involvement in College Going: Variations by Socioeconomic Class." *The Journal of Higher Education* 79(5):564–86. doi: 10.1080/00221546.2008.11772117.
- Sallie Mae. 2019. *How America Pays for College*. Newark, DE: Sallie Mae.
- Sav, G. Thomas. 2010. "Funding Historically Black Colleges and Universities: Progress Toward Equality?" *Journal of Education Finance* 35(3):295–307. doi: 10.1353/jef.0.0017.
- Schneider, Daniel, Orestes P. Hastings, and Joe LaBriola. 2018. "Income Inequality and Class Divides in Parental Investments." *American Sociological Review* 83(3):475–507.
- Schoeni, Robert F., and Karen E. Ross. 2005. "Material Assistance from Families during the Transition to Adulthood." Pp. 396–416 in *On the Frontier of Adulthood: Theory, Research, and Public Policy*, edited by R. A. Settersten Jr, F. F. Furstenberg, and R. G. Rumbaut. Chicago, IL: University of Chicago Press.
- Seamster, Louise, and Raphaël Charron-Chénier. 2017. "Predatory Inclusion and Education Debt: Rethinking the Racial Wealth Gap." *Social Currents* 4(3):199–207. doi: 10.1177/2329496516686620.
- Serido, Joyce, Soyeon Shim, Anubha Mishra, and Chuanyi Tang. 2010. "Financial Parenting, Financial Coping Behaviors, and Well-Being of Emerging Adults." *Family Relations* 59(4):453–64. doi: 10.1111/j.1741-3729.2010.00615.x.
- Settersten, Richard A., Timothy M. Ottusch, and Barbara Schneider. 2015. "Becoming Adult: Meanings of Markers to Adulthood." Pp. 1–16 in *Emerging Trends in the Social and Behavioral Sciences*, edited by R. A. Scott and S. M. Kosslyn. Hoboken, NJ, USA: John Wiley & Sons, Inc.
- Sewell, William H., Archibald O. Haller, and Alejandro Portes. 1969. "The Educational and Early Occupational Attainment Process." *American Sociological Review* 34(1):82. doi: 10.2307/2092789.
- Sewell, William H., and Vimal P. Shah. 1968. "Social Class, Parental Encouragement, and Educational Aspirations." *American Journal of Sociology* 73:559–72.
- Silva, Jennifer M. 2012. "Constructing Adulthood in an Age of Uncertainty." *American Sociological Review* 0003122412449014.

- Smits, Annika, Ruben I. van Gaalen, and Clara Mulder. 2010. "Parent-Child Coresidence: Who Moves in With Whom and for Whose Needs?" *Journal of Marriage and Family* 72(4):1022–33.
- Sorgente, Angela, and Margherita Lanz. 2017. "Emerging Adults' Financial Well-Being: A Scoping Review." *Adolescent Research Review* 2(4):255–92. doi: 10.1007/s40894-016-0052-x.
- Spilerman, Seymour. 2000. "Wealth and Stratification Processes." *Annual Review of Sociology* 26(1):497–524. doi: 10.1146/annurev.soc.26.1.497.
- St. John, Edward P., Alberto F. Cabrera, Amaury Nora, and Eric H. Asker. 2000. "Economic Influences on Persistence Reconsidered." in *Reworking the student departure puzzle*, edited by J. M. Braxton. Nashville, TN: Vanderbilt University Press.
- Steelman, Lala Carr, and Brian Powell. 1989. "Acquiring Capital for College: The Constraints of Family Configuration." *American Sociological Review* 54(5):844. doi: 10.2307/2117758.
- Steelman, Lala Carr, and Brian Powell. 1991. "Sponsoring the Next Generation: Parental Willingness to Pay for Higher Education." *American Journal of Sociology* 96(6):1505–29. doi: 10.1086/229695.
- Sullivan, Theresa A., Elizabeth Warren, and Jay Lawrence Westbrook. 2000. *The Fragile Middle Class: Americans in Debt*. New Haven, CT: Yale University Press.
- Swartz, Teresa Toguchi. 2009. "Intergenerational Family Relations in Adulthood: Patterns, Variations, and Implications in the Contemporary United States." *Annual Review of Sociology* 35(1):191–212. doi: 10.1146/annurev.soc.34.040507.134615.
- Swartz, Teresa Toguchi, Minzee Kim, Mayumi Uno, Jeylan Mortimer, and Kirsten Bengtson O'Brien. 2011. "Safety Nets and Scaffolds: Parental Support in the Transition to Adulthood." *Journal of Marriage and Family* 73(2):414–29. doi: 10.1111/j.1741-3737.2010.00815.x.
- Sweet, Elizabeth, Arijit Nandi, Emma K. Adam, and Thomas W. McDade. 2013. "The High Price of Debt: Household Financial Debt and Its Impact on Mental and Physical Health." *Social Science & Medicine* 91:94–100. doi: 10.1016/j.socscimed.2013.05.009.
- Sykes, Jennifer, Katrin Križ, Kathryn Edin, and Sarah Halpern-Meehin. 2015. "Dignity and Dreams: What the Earned Income Tax Credit (EITC) Means to Low-Income Families." *American Sociological Review* 80(2):243–67.

- Tach, Laura, and Sara Sternberg Greene. 2014. “‘Robbing Peter to Pay Paul’: Economic and Cultural Explanations for How Lower-Income Families Manage Debt.” *Social Problems* 61(1):1–21. doi: 10.1525/sp.2013.11262.
- Tevington, Patricia, Laura Napolitano, and Frank F. Furstenberg. 2017. “Financing Children’s Futures: Economic Strategies for Postsecondary Education Among Middle-Income Families.” *Sociological Forum*. doi: 10.1111/socf.12373.
- Texas Higher Education Coordinating Board. 2015. *Texas Higher Education Strategic Plan: 2015 - 2030*.
- Thompson, Jeffrey P., and Jesse Bricker. 2014. “Finance and Economics Discussion Series Divisions of Research & Statistics and Monetary Affairs Federal Reserve Board, Washington, D.C.”
- Turley, Ruth N. López. 2009. “College Proximity: Mapping Access to Opportunity.” *Sociology of Education* 82(2):126–46.
- United Negro College Fund. 2017. *Parent PLUS Loans*. Washington, DC: United Negro College Fund.
- Urahn, Susan K., Travis Plunkett, Erin Currier, Joanna Biernacka-Lievestro, Diana Elliott, Sheida Elmi, Clinton Key, Sowmya Kypa, Walter Lake, and Sarah Sattelmeyer. 2015. *The Complex Story of American Debt: Liabilities in Family Balance Sheets*. Philadelphia, PA: The Pew Charitable Trusts.
- U.S. Bureau of the Census. 2018. *Median Family Income in the United States*. St. Louis, MO: Federal Reserve Bank of St. Louis.
- U.S. Department of Education. 2005. *2004-05: Federal Pell Grant Program End-of-Year Report*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. 2019a. “Direct PLUS Loans and Adverse Credit.” *Federal Student Aid*. Retrieved October 21, 2019 (<https://studentaid.ed.gov/sa/sites/default/files/plus-adverse-credit.pdf>).
- U.S. Department of Education. 2019b. “PLUS Loans for Parents.” *Federal Student Aid: An Office of the U.S. Department of Education*. Retrieved October 15, 2019 (<https://studentaid.ed.gov/sa/types/loans/plus/parent>).
- U.S. General Accounting Office. 2003. *Student Financial Aid: Monitoring Aid Greater than Federally Defined Need Could Help Address Student Loan Indebtedness*. GAO-03-508. Washington, DC.
- Velez, Erin, Melissa Cominole, and Alexander Bentz. 2019. “Debt Burden after College: The Effect of Student Loan Debt on Graduates’ Employment, Additional

- Schooling, Family Formation, and Home Ownership.” *Education Economics* 27(2):186–206. doi: 10.1080/09645292.2018.1541167.
- Vuolo, Mike, Jeylan T. Mortimer, and Jeremy Staff. 2016. “The Value of Educational Degrees in Turbulent Economic Times: Evidence from the Youth Development Study.” *Social Science Research* 57:233–52. doi: 10.1016/j.ssresearch.2015.12.014.
- Walsemann, Katrina M., and Jennifer A. Ailshire. 2016. “Student Debt Spans Generations: Characteristics of Parents Who Borrow to Pay for Their Children’s College Education.” *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* gbw150. doi: 10.1093/geronb/gbw150.
- Western, Bruce, Deirdre Bloome, Benjamin Sosnaud, and Laura Tach. 2012. “Economic Insecurity and Social Stratification.” *Annual Review of Sociology* 38(1):341–59. doi: 10.1146/annurev-soc-071811-145434.
- Wine, Jennifer, Natasha Janson, and Sara Wheelless. 2011. *2004/09 Beginning Postsecondary Students Longitudinal Study (BPS:04/09). Full-scale Methodology Report*. NCES 2012-246. Washington, DC: Institute for Education Sciences.
- Wine, Jennifer, Peter Siegel, Rob Stollberg, and Tracy Hunt-White. 2018. *2015-16 National Postsecondary Student Aid Study (NPSAS:16). Data File Documentation*. NCES 2018-482. Washington, DC: Institute for Education Sciences.
- Wolff, Edward N. 2010. “Recent Trends in Household Wealth in the United States: Rising Debt and the Middle-Class Squeeze - An Update to 2007.” *SSRN Electronic Journal*. doi: 10.2139/ssrn.1585409.
- Wolff, Edward N. 2013. “The Asset Price Meltdown, Rising Leverage, and the Wealth of the Middle Class.” *Journal of Economic Issues* 47(2):333–42. doi: 10.2753/JEI0021-3624470205.
- Woo, Jennie H., Alexander H. Bentz, Stephen Lew, Nichole Smith, and Erin Dunlop Velez. 2017. *Repayment of Student Loans as of 2015 among 1995-96 and 2003-04 First-Time Beginning Students: First Look*. NCES 2018-410. Washington, DC: National Center for Education Statistics, Institute of Education Sciences.
- Woo, Jennie H., and Stephen Lew. 2020. “Parent Borrowing and College Completion.” 49:25.
- Zaloom, Caitlin. 2019. *Indebted: How Families Make College Work at Any Cost*. Princeton, N.J: Princeton University Press.
- Zelizer, Viviana A. 1997. *The Social Meaning of Money: Pin Money, Paychecks, Poor Relief, and Other Currencies*. Princeton, N.J: Princeton University Press.

Zumeta, William, and Nick Huntington-Klein. 2020. *State “Free College” Programs*:
Council of Independent Colleges.