



Dear Dominique,

Thank you for submitting your proposal. A printable summary is below. Your confirmation number is 9127. A confirmation email will be sent to you within 24 hours.

Applicants will be notified of the status of the proposed project on May 4, 2015.

If you have questions or need assistance regarding your application please contact the AIR Grant staff at 850-385-4155 x200 or grants@airweb.org.

SUMMARY

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IR Roles	
Year of birth	
Race/Ethnicity	
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Grant Type
I am applying for a:
<input checked="" type="checkbox"/> Dissertation Grant

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Project Description

Project title:

An Examination of the Effects of Undergraduate Debt on Postbaccalaureate Decision-Making

Statement of the research problem and national importance (limit 750 words):

- What is the research problem this proposal intends to address?
- Why is this topic of national importance?
- Why is it timely to conduct this research at this time?

Undergraduate debt is an area of higher education policy which has drawn intensive scholarly and practical interest. American student loan debt has officially exceeded one trillion dollars since early 2012 leading to articles like CNN's "40 million Americans now have student loan debt," Forbes' "How the \$1.2 Trillion College Debt Crisis is Crippling Students, Parents and The Economy," and Huffington Post's "College Debt is Crippling Black Graduates' Ability to Gain Wealth" (Berman, 2015; CNN, 2014; Denhart, 2013). This is, in part, due to the fact that from AY 2000-2001 to 2010-2011, in constant 2011-2012 dollars, federal grants disbursements grew from \$10.4 billion to \$37.8 billion (4,059 to 10,517 recipients, in thousands) and federal loan disbursements grew from \$43.3 billion to \$108.6 billion (7,544 to 19,174 recipients, in thousands; Condition of Education, 2013). In addition, the rebuilding of the economy and labor markets after the Great Recession increased the need to borrow to finance education and decreased the likelihood of being able to meet repayment requirements. The year 2011 saw the highest cohort default rate on federal student loans in over 15 years (College Board, 2012). Further, the percentage of total outstanding student loan debt held by consumers that was 90 days or more delinquent grew from 6.1% in 2003 to 11.0% in 2012 (Condition of Education, 2013).

High payments and default on undergraduate debt have consequences. These high payments and defaults are national concerns if aversion to those consequences deters students from making optimal postbaccalaureate decisions, e.g., postbaccalaureate education aspirations, enrollment, and early-career occupation. With regard to aspirations and enrollment, on average, the economic return to earning a postbaccalaureate degree is growing. Researchers have found that people who hold postbaccalaureate degrees have increased their wages, relative to both all workers and specifically in comparison with baccalaureate degree holders (Acemoglu & Autor, 2010; Avery & Turner, 2012; Lindley & Machin, 2011). Lindley & Machin (2011) also found that an increase in demand for postbaccalaureate degree holders was driving this change. Moreover, early-career occupations in low-salary or non-profit industries can often lead to positive social externalities (Preston, 1989) and higher personal job satisfaction and non-pecuniary benefits even when controlling for salary (Benz, 2005). Therefore, there is concern that, with more undergraduate debt, people will be less likely to make decisions that give them the most happiness/satisfaction or benefit society.

The purpose of this work is to expand our general understanding of how undergraduate loans influence and potentially constrain the postbaccalaureate decision-making for students. The barrier of undergraduate debt could exacerbate the relatively stable trend of disproportionate graduate school attendance depending on a students' race and income level (Carter, 1999; Malcom & Dowd, 2012; Mullen, Goyette & Soares, 2003; Silbulkin & Butler, 2011). And even though public sector and so-called low-salary industries have been seen as havens for females and African Americans entering the labor market (Cooper, Gable & Austin, 2012), there is growing evidence that increased debt makes students less likely to work in low-salary industries (Rouse & Rothstein, 2011). Research illuminating the effects of undergraduate debt on postbaccalaureate decision-making and how these students create their belief structures on undergraduate debt and postbaccalaureate options could aid in explicating why these students do not appear to make the same choices as their peers.

Moreover, my methodological addition to the field is twofold. First, I add a new way to identify causal estimates from undergraduate debt via using changes in cost of attendance as an excluded instrument. This technique could be used in multiple scenarios beyond investigating the specific dependent variables I have chosen as long as the change in tuition has no outside effect on the outcome variable. And this could be more widely applicable when investigating debt's impact versus the previous methods. Second, as I employ a mixed methods analytical approach, I am able to investigate not only the causal effect of undergraduate debt but the ways in which students conceptualize their debt and the underlying reasoning behind their postbaccalaureate decision-making.

Review the literature and establish a theoretical grounding for the research (limit 1000 words):

- What has prior research found about this problem?
- What is the theoretical/conceptual grounding for this research?

Prior Research

There is a significant, if contradictory, body of research on the relationship between debt levels and graduate school aspirations, application, and enrollment. Researchers reported a variety of findings that range from negative effects of debt (Baum & Saunders, 1988; Baum & Schwartz, 1998; Choy & Gies, 1997; Fox, 1992; Malcom & Dowd, 2012; Millett, 2003; Tsapogas & Cahalan, 1996; Weiler, 1994; Wilder & Baydar, 1991; Zhang, 2013) to neutral or insignificant/positive effects, grouped together because these effects would suggest that debt is not inhibiting students (Baird, 1973; Bedard & Herman, 2008; Carter, 1999; Choy, 2000; COFHE, 1983; Ekstrom et al., 1991; Heller, 2001; Kim & Eyermaun, 2006; Murphy, 1994; Perna, 2004; Rothstein & Rouse, 2011; Sanford, 1980; Schapiro, O'Malley & Litten, 1991; Weiler, 1991). This is in contrast to research on early-career occupation, which, while smaller, reflects a primarily negative effect of debt (Rouse & Rothstein, 2011). As students increase their undergraduate debt they are less likely to select careers in the public sector or in so-called low-salary industries.

In all of the research on debt's influence on postbaccalaureate decision-making, there is a fundamental issue of endogeneity. For example, using postbaccalaureate aspirations, the amount of debt students borrow could, and most likely is, a function of the students' postbaccalaureate plans (e.g., students planning to earn a JD may be more willing to borrow in comparison with students planning to be primary school teachers). If this is the case, then changes in debt do not cause changes in graduate school aspirations, changes in graduate school aspirations would cause the changes in debt. Therefore, debt would be an endogenous predictor.

Few studies, such as Rothstein and Rouse (2011) and Zhang (2013), deal with the potential endogeneity in their debt measures. Rothstein and Rouse (2011) used administrative data from 1999-2006 from one institution which implemented a no-loan policy for all students receiving financial aid in 2001. The researchers employed difference-in-differences and instrumental variables estimation (excluded instrument created from a simulated loan offer based on administrative data). While the estimation strategy is strong, there is a lack of generalizability because the authors only studied one institution, an institution that is extremely selective, with large endowments and a more privileged student body than at the majority of other American institutions of higher learning. Zhang (2013) used the percentage of gift aid relative to loans given by the student's undergraduate institution and the percentage of

students at said institution who received any form of financial aid as excluded instruments. However, Zhang (2013) used older data, B&B: 93/97, and there was not strong enough evidence that his instruments did not suffer from finite sample bias for private institutions. Also, there was no measure of whether any of these college graduates ever actually aspired to enter graduate school.

Previous research on debt's association with postbaccalaureate decision-making either uses older, nationally representative data or newer, single-institution/single-subject area data. New research is needed which analyzes the causal effects of debt for a representative sample. Therefore, I propose to use a new excluded instrument, change in cost of attendance, while filling in these gaps in the literature using newer, nationally representative data rich with financial aid and indebtedness measures.

Conceptual Framework

I establish two competing hypotheses that could explain the postbaccalaureate decision-making of students as my conceptual framework for my three research questions. Human capital theory aids in understanding how students make decisions (Becker, 1964; Bound et al., 2009). According to Becker (1964), students must evaluate the costs of enrolling in college, both in the direct costs of attendance and in foregone earnings, and the potential economic returns to the increase in their human capital by acquiring new skills and knowledge (often signaled by the earning of a degree). This would directly apply when students are considering whether or not to aspire to and enroll in postbaccalaureate study. Students could evaluate the amount of undergraduate loan debt they have borrowed and decide that the only way to pay the debt back is to attend graduate school in order to attain higher earnings over their lifetime. This is a particularly popular decision during recessions and times when unemployment is high (Fry, 2010). Or, in regards to students who directly enter the labor market, students more comfortable with debt and an understanding of lifetime utility could be more likely to work in low-salary industries. This theory would be complicated by the increased prominence of Income-Based Repayment (IBR) plans which would allow students to pay a set portion of their income on their federal loans instead of a flat payment based on the amount borrowed (U.S. Department of Education, 2014). Still, approximately 14 percent of students in repayment on their Direct Loans in 2014 used IBR (College Board, 2014) so this is a marginal portion of the population.

However, scholars also posit that, instead of following human capital theory, students will make decisions based on their risk aversion with regard to debt (Burdman, 2005). Following this theory, with regards to postbaccalaureate education students would react to increased undergraduate debt load by lowering their aspirations for or choosing not to enroll in postbaccalaureate study and instead deciding to enter the labor force more quickly in order to begin repayment of loans. Additionally, students entering the labor market would choose to work in an industry that returns a higher salary in order to pay back loans quicker. In terms of differential effects, numerous scholars have found that different student populations—e.g., racial ethnic/minorities, students from low-income backgrounds—can often be risk averse when confronted with undergraduate student loans (Burdman, 2005; Callender & Jackson, 2005; Perna, 2000; Tomas Rivera Policy Institute, 2004). This is often posited to be due to structural income and wealth inequalities (Oliver & Shapiro, 1997). Therefore, students underrepresented in higher education could react more strongly to the increasing reliance on student debt for college funding. And this reluctance to borrow for undergraduate education could push these students to search for high paying employment (see Appendix A for Conceptual Model).

Describe the research method that will be used (limit 1000 words):

- What are the research questions to be addressed?
- What is the proposed research methodology?
- What is the statistical model to be used?

Research Questions

I propose to address the following research questions in a separate paper:

1. To what extent does undergraduate student loan debt influence postbaccalaureate educational aspirations and postbaccalaureate educational enrollment?
2. To what extent does undergraduate student loan debt influence early-career occupational choices?
3. How do underrepresented students conceptualize undergraduate debt and their repayment options? How does this change closer to time of repayment?

Data

For the quantitative portion of my dissertation, research question one and two, I use two different datasets from the National Center for Education Statistics (NCES). Question one has two dependent variables. I use the Beginning Postsecondary Students (BPS): 04/09 dataset for the analysis of the dependent variable postbaccalaureate education aspirations and the Baccalaureate and Beyond (B&B) 2007-2008 graduating cohort for the analysis of the dependent variable postbaccalaureate education enrollment. For question two, I use B&B solely for the analysis of the dependent variable low-salary industry for early-career occupation (using the classification from Rouse & Rothstein, 2011). In all three cases, undergraduate debt is the endogenous independent variable. I supplement all the NCES datasets with cost of attendance (COA) figures from the Integrated Postsecondary Education Data Systems (IPEDS) and selectivity measures for the first postsecondary institution from the 2004 Barron's Admissions Competitiveness Index (year chosen because of proximity to when students started postsecondary education). The study sample is restricted to U.S. citizens and resident aliens (only students eligible for federal financial aid) who attend not-for-profit institutions. The estimated analytical sample for BPS is approximately 6400 and for B&B is approximately 17,100.

Analytic Approach

I will employ a mixed methods approach to answer my three separate research questions. I investigate research question one and two using a quantitative analytical method. Due to the previously discussed complex, and potentially endogenous, relationship between debt and postbaccalaureate decision-making, I implement instrumental variables estimation as an identification strategy to estimate causal effects. For research question one, I use the changes in COA from AY 2003-2004 to AY 2005-2006 for BPS (aligned with waves of BPS; model one) or the entire undergraduate period for that

student for B&B at the institution the student attended their first year of postsecondary education (model two) as an identifying instrument for the change in student debt. For research question two, I use the entire undergraduate period for that student as I will use B&B again (model three). Change in COA could force students to borrow more as a higher COA would presumably lead students to rely on loans in order to finance their educations. However, change in COA should not influence the postbaccalaureate decision-making, unless it is through this channel of influencing the undergraduate debt a student holds. In order to evaluate the competing hypotheses mentioned earlier, if the beta estimate on debt is statistically significant and negative, debt had a negative effect on the students' postbaccalaureate decision-making (e.g., lowered their aspirations to graduate school, made the student less likely to apply to graduate school). However, if the estimate is statistically significant and positive or statistically insignificant, but there is enough power to detect an effect, this would mean that there is evidence supporting that debt did not have an inhibiting effect on students' postbaccalaureate decision-making. Subpopulation analyses for underrepresented students (e.g., Black, Hispanic, low-income) will also be conducted for both research question one and two. Preliminary estimates do hold that the instrument has sufficient predictive power and that the instrument is exogenous. Complete details of this estimation strategy can be found in Appendix B, the statistical models addendum, attached to this proposal.

I investigate research question three using a qualitative analytical method. I will conduct descriptive phenomenological analysis of 20 undergraduate students who hold federal undergraduate loans attending an Historically Black College or University (HBCU). This type of institution was selected because these institutions have a concentrated population of students underrepresented within higher education. With the previously mentioned concerns with differential effects of undergraduate loans (Burdman, 2005; Callender & Jackson, 2005; Perna, 2000; Tomas Rivera Policy Institute, 2004), I wish to further unpack the experiences of underrepresented students. This is especially critical as research suggests that shifting higher education funding to loans instead of grants may disproportionately disadvantage underrepresented students, racial/ethnic minorities or from low-income backgrounds (Long & Riley, 2007). As recommended by Yin (2003), I have developed data collection protocols based on my conceptual framework and review of the literature. The focus will be on how students conceptualize undergraduate debt and their repayment options. One-on-one interviews will be conducted at two different time points by the PI with the participants. In phase one, the PI will interview students during April 2015 before the students graduate. A member of the Office of Financial Aid will send out a recruitment email to all students who will go through repayment counseling on their federal student loans. Those students may then choose to email me if they are interested in participating in the study. In phase two, the PI will re-interview those students again during October/November 2015 which will be closer to the time when the students must actually make repayment decisions with the federal government. After each interview, the audiorecording will be transcribed and I will create a theoretical memo summarizing the themes based on a phenomenological approach. This will involve delving into the lived common experience of the students in order to better understand how they perceive and make meaning of their undergraduate loans and their postbaccalaureate decision-making (Moustakas, 1994). This design has strong trustworthiness due to the credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). These facets of trustworthiness are ensured due to the prolonged engagement/trust building activities, triangulation via informal discussion with the site coordinator, peer debriefing, and member check-ins (sending theoretical memos back to students in order to allow the students to give feedback on interpretations). The site coordinator has already written a letter of cooperation for the research.

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Project Description - Appendix

- [Appendix to Proposal](#)

NSF Datasets

NSF datasets:

Will you use a NSF dataset?

No

Please check all NSF datasets that apply:

Explain why the selected NSF dataset(s) best serves this research limit (250 words):

Include a variable list for each dataset used.

NCES Datasets

NCES datasets:

Will you use a NCES dataset?

Yes

Please check all NCES datasets that apply:

- Baccalaureate and Beyond Longitudinal Study (B&B) and Transcript Data
- Beginning Postsecondary Student (BPS) Longitudinal Study and Transcript Data
- IPEDS Student Financial Aid (SFA)

Explain why the selected NCES dataset(s) best serves this research (limit 250 words):

Include a variable list for each dataset used.

Beginning Postsecondary Students (BPS): 04/09 or Baccalaureate and Beyond (B&B): 08/12 merged with the Integrated Postsecondary Education Data Systems (IPEDS) and Barron's Admissions Competitiveness Index are the most appropriate compiled datasets because both BPS and B&B longitudinally cover a variety of financial topics. BPS covers the time period when students are attending an undergraduate institution and B&B covers after the students have earned a Bachelor's degree which allows me to investigate both in-college and post-college effects of undergraduate loans. These datasets are also appropriate because they are nationally representative. Thus, I am able to find results more appropriate for national policy implications than prior research.

The variables for BPS are: DGEVR06; CUMULN06; HIGHLVEX; GENDER; RACE; PAREduc; CINCOME; HCGPAREP; TESATDER; FCONTROL; FLEVEL; HRSWK06; DEPEND5A; DEPCHILD. The variables for B&B are: B2HIENR; HIGHLVEX; B2CJOCC33; B1BORAT; GENDER; RACE; PAREduc; CINCOME; HSGPA; TESATDER; JOBNUMB; GPA; DEPEND5A; DEPNUMCH; I1CTRL; I1LEVEL. The variables for IPEDS are: cinson; cotson.

Note: I listed that I use IPEDS Student Financial Aid above because the section I actually use, IPEDS Charges, is not listed. Please see Appendix C for the variable names and labels.

Timeline and Deliverables

Timeline:

Provide a timeline of key project activities.

April 2015: I will conduct the first phase of interviews (answering the third research question).
 May 2015: Transcription of those interviews and preliminary analysis. Preliminary theoretical memos will be sent to the participants for member checks.
 June 2015-September 2015: Creation of the final compiled analytical dataset. Continued refinement of statistical models will occur, along with robustness checks, until final models are specified (answering the first and second research questions).
 October 2015: Begin contacting interview participants to see if they are still willing to participate again. Begin conducting phase two interviews. Begin writing the results from the quantitative portion of the analysis leaving time if I need to re-specify the models.
 November 2015: Continue conducting phase two interviews. Transcription will be taking place immediately after I conduct the interviews.
 December 2015: Preliminary theoretical memos for the second interviews will be sent to the participants for member checks.
 January 2016-March 2016: Writing of the majority of the results. March of 2016 I will defend my dissertation in order to graduate in May 2016.
 During this entire time period I will be preparing manuscripts for publication and presenting results at academic conferences.

Deliverables:

List deliverables such as research reports, books, and presentations that will be developed from this research initiative.

I plan to present the results of the papers at education, economics, and/or policy conferences. This may amount to more than three conference presentations (for example, the qualitative results may have more than one presentation in them). This work would also lead to more practitioner-based presentations through centers focused on either financial aid policy or Minority-Serving Institutions. Additional policy briefs/research reports targeted at policy and practitioner stakeholders will be produced.

Disseminate results:

Describe how you will disseminate the results of this research.

(Note: Costs of travel to meetings should be calculated on the budget page.)

In addition to having important implications for policymakers, the results of this study will be of great interest to education scholars and researchers. I anticipate disseminating my work both through academic conference presentations and publication in leading education and policy peer-reviewed journals. The intended conference outlets would be annual conferences in education, economics, or public policy, e.g. American Educational Research Association (AERA), Association for the Study of Higher Education (ASHE), and Association for Education Finance and Policy (AEFP). I would submit my

three manuscripts to peer-reviewed journals in the same fields, e.g. Journal of Higher Education, Review of Higher Education, and Educational Evaluation and Policy Analysis. Additional efforts will be made to distribute policy briefs and research reports through financial aid policy networks like the National Association of Student Financial Aid Administrators and Minority-Serving Institutions networks like the Center for Minority Serving Institutions at the University of Pennsylvania. I will also meet with and disseminate the results to stakeholders at the institution I conduct qualitative interviews. This work is intended for scholars and policymakers within the higher education and federal aid sectors.

IRB Statement

Statement of Institutional Review Board approval or exemption (limit 250 words):

As part of the proposal, a statement outlining a plan for Institutional Review Board (IRB) approval is required. The statement should outline the applicant's timeline and plan for submitting the proposal to an IRB or explain why IRB approval is not necessary. Final IRB action is not necessary prior to submitting the application.

I have already submitted my proposal for my dissertation to the Vanderbilt IRB and the IRB of the institution from which I will conduct qualitative interviews for my third research question/paper. The Vanderbilt IRB covers all data collection and analysis and has been approved pending changes to my consent form as of March 17, 2015. The qualitative interview institution covers only the third research paper and has been approved pending changes as of March 1, 2015.

Restricted Datasets

Statement of use of restricted datasets (limit 250 words):

Applicants should provide a statement indicating whether the proposed research will require use of restricted datasets. If restricted datasets will be used, the plan for acquiring the appropriate license should be described. Review the requirements for restricted use licenses at the NCES and NSF websites.

If restricted datasets will not be used, leave this text box blank and click *Save and Continue*.

The proposed research would require the use of restricted datasets, specifically Beginning Postsecondary Students and Baccalaureate and Beyond. I have already acquired the appropriate license to access these datasets. I have held said license for NCES restricted datasets since the spring of 2013.

Biographical Sketch(es)

Biographical sketch (limit 750 words):

I am currently a Vanderbilt University Provost's Graduate Fellow, Peabody College Experimental Education Research Training (ExpERT) Fellow, Peabody Dean's Fellow, and University Council for Educational Administration (UCEA) Barbara L. Jackson Scholar. I have been competitively selected for multiple education policy seminars, for example the American Enterprise Institute's (AEI) Education Policy Academy and the Association for the Study of Higher Education's (ASHE) graduate student policy seminar.

I hold a Bachelor of Arts in Psychology and a Master of Education in Student Affairs Practice in Higher Education from the University of Virginia. During my time at the University of Virginia I was able to allow my burgeoning research skills to flourish. I applied factor analysis and structural equation modeling skills in my undergraduate research and my master's thesis involved the collection of hour long one-on-one interviews with African American undergraduate students.

During my doctoral study, I have worked on various research projects studying state and federal policy levers that can increase access and success of underrepresented students to higher education. My work primarily involves quantitative analysis, both causal and correlational, of state administrative databases (Florida K-20 Education Data Warehouse and Texas) and large-scale national datasets (Education Longitudinal Study, Beginning Postsecondary Students, Baccalaureate and Beyond, Current Population Survey, American Community Survey, Integrated Postsecondary Education Data System). I presented prior research using national datasets at the annual meetings of American Education Research Association (AERA), Association for Education Finance and Policy (AEFP), ASHE, and UCEA. Currently, I have a manuscript under review which uses U.S. Census Bureau intercensal, IPEDS, CPS, and ACS estimates. I have also conducted qualitative one-on-one research interviews for various faculty members. I have excelled at doctoral methodological coursework in statistical inference, advanced regression (two-part series), multilevel modeling, econometrics/causal inference, and qualitative research methods. My research skills include: ordinary least squares regression; logistic regression; fixed effects; instrumental variables estimation; propensity score matching; regression discontinuity; event history analysis; Blinder-Oaxaca decomposition; and qualitative interviewing and coding. I am comfortable using multiple data analysis software packages, i.e., Stata, SPSS, R, and NVivo.

My research and quantitative investigations into higher education are girded by my varied professional experiences. After graduating from college I joined the Virginia College Advising Corps, an AmeriCorps program within the larger National College Advising Corps program. I assisted low-income and first-generation college students with college admission, financial aid, and scholarship applications, while acting as a mentor to students. Practical measures I implemented at my site were initiating an afterschool SAT tutoring program, coordinating discounted visits to colleges throughout the state, counseling students in college preparation and applications, and giving presentations to both students and parents about college applications and financial aid. I then returned to the University of Virginia, where I eventually became an Assistant Dean and the AccessUVa Coordinator for the Office of Undergraduate Admissions (AccessUVa was a no-loan program for the institution). I advocated for and increased the access of students from low-income backgrounds throughout the United States. I also served as the liaison with the Student Financial Services department for the Office of Undergraduate Admissions. This professional experience adds to my content expertise on financial aid in American higher education.

In my academic and professional experience to date, I have shown a passion for increased equity and access for underrepresented students as well as a

desire to pursue opportunities that further my experience and knowledge of postsecondary policies and practice. My preparation and research experiences throughout my scholarly career to this date demonstrate that I have the skills necessary to complete my proposed dissertation.

Budget

- [Dissertation Grant Budget Form](#)

Funding History

Funding history (limit 250 words):

A statement of prior, current, and pending funding for the proposed research from all sources is required. The statement should also include a history of all prior funding from AIR to any of the PIs for any activity. Funding from other sources will not disqualify the application but may be considered in the funding decision.

Vanderbilt University provides me with tuition and insurance coverage in addition to a \$16,000 9-month stipend for four years (fall 2012 - spring 2016). I was awarded a Provost's Graduate Fellowship and a Peabody Dean's Fellowship upon my acceptance to Vanderbilt which include an additional \$10,000 9-month grant for the same four-year time period and a \$5000 non-recurring professional development fund respectively. As of May 2016, all funding mechanisms will expire.

Dissertation Advisor Letter of Support

- [LetterofSupport](#)

Addendum: An Examination of the Effects of Undergraduate Debt on Postbaccalaureate Decision-Making

Appendix A
Conceptual Model

Below is my original framework combining human capital theory and the literature on risk aversion to conceptualize students' responses to increased undergraduate debt.

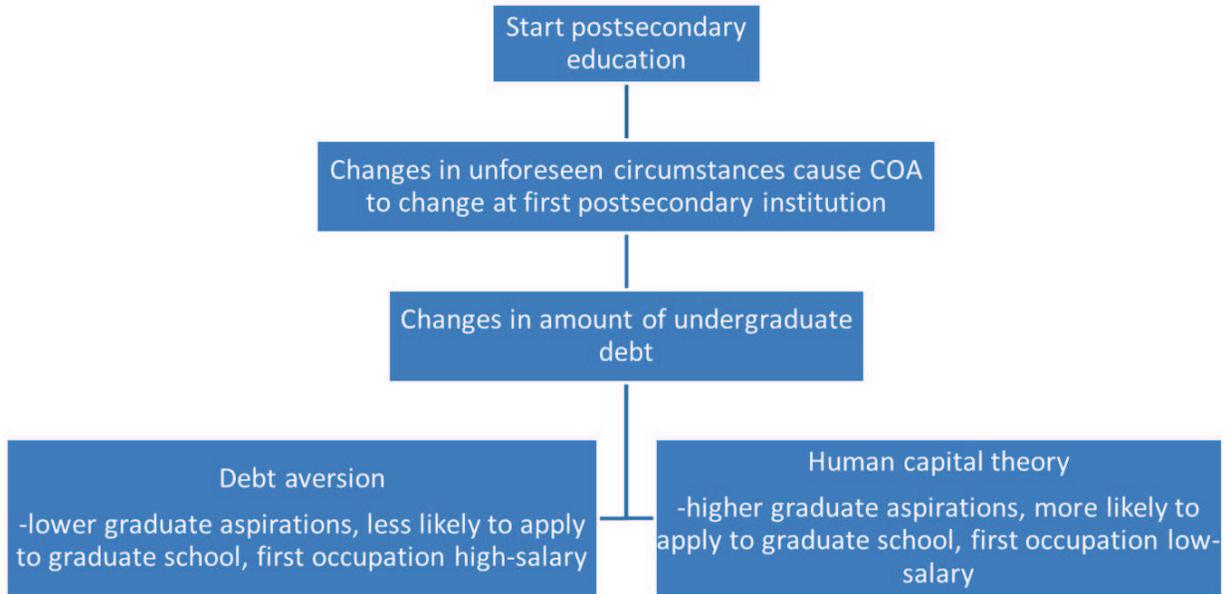


Figure 1. The conceptual model for understanding undergraduate debt's effect on postbaccalaureate decision-making.

Appendix B Statistical Models

Model 1

In model one, I investigate the first part of research question one, debt's effect on postbaccalaureate education aspirations. The model is:

First stage

$$debt_{it} = \gamma_0 + \gamma_1 \Delta coa_i + \gamma_2 highest\ degree\ expected_{it-1} + \mathbf{X}_i \boldsymbol{\alpha} + \varepsilon$$

Second stage

$$highest\ degree\ expected_{it} = \beta_0 + \beta_1 \widehat{debt}_{it} + \beta_2 highest\ degree\ expected_{it-1} + \mathbf{X}_i \boldsymbol{\delta} + u$$

where ***debt_{it}*** is the amount of undergraduate loans borrowed by 2005-2006 for student ***i***; ***Δcoa_i*** is change in COA from 2003-2004 to 2005-2006 for student ***i***; ***highest degree expected_{it-1}*** is the highest degree expected to be earned in 2003-2004 (or the first wave) for each student ***i***; ***X_i*** represents a vector of individual and institutional covariates for student ***i*** including gender, race/ethnicity, parents' education, family or student income prior to postsecondary education, high school grade point average, college entrance examination score, institutional selectivity, institutional control, institutional level, time spent working, initial COA at first postsecondary institution, marriage status, and whether the student had children; and

highest degree expected_{it} is the highest degree expected to be earned in 2005-2006 (or the second wave) for each student ***i***. The second stage will run a linear probability model (as the outcome variable is dichotomous).

Model 2

For model two, I investigate the second part of research question two, debt's effect on postbaccalaureate education enrollment. The model is:

First stage

$$debt_{it-1} = \gamma_0 + \gamma_1 \Delta coa_i + \gamma_2 highest\ degree\ expected_{it-1} + \mathbf{X}_i \boldsymbol{\alpha} + \varepsilon$$

Second stage

$$\begin{aligned} postbaccalaureate\ enrollment_{it} \\ = \beta_0 + \beta_1 \widehat{debt}_{it-1} + \beta_2 highest\ degree\ expected_{it-1} + \mathbf{X}_i \boldsymbol{\delta} + u \end{aligned}$$

where ***debt_{it-1}*** is the amount of undergraduate loans borrowed for the undergraduate career for student ***i***; ***Δcoa_i*** is change in COA for undergraduate enrollment for student ***i***;

highest degree expected_{it-1} is the highest degree expected to be earned in 2007-2008 (when earning the baccalaureate degree) for each student ***i***; ***X_i*** represents a vector of individual and institutional covariates for student ***i*** including gender, race/ethnicity, parents' education, family or student income prior to graduation, high school grade point average, college entrance examination score, whether student worked while enrolled, undergraduate grade point average, marriage status, whether the student had children, first institution selectivity, first institution control, and first institution level; and ***postbaccalaureate enrollment_{it}*** is an indicator for graduate school enrollment in 2012 for each student ***i*** (=1 if student chose to enroll in graduate

Addendum: An Examination of the Effects of Undergraduate Debt on Postbaccalaureate Decision-Making

school). The second stage will run a linear probability model (as the outcome variable is dichotomous).

Model 3

For model three, I investigate research question two, debt's effect on postbaccalaureate early-career choice. The model is:

First stage

$$debt_{it-1} = \gamma_0 + \gamma_1 \Delta coa_i + \mathbf{X}_i \boldsymbol{\alpha} + \varepsilon$$

Second stage

$$low\ salary_{it} = \beta_0 + \beta_1 \widehat{debt}_{it-1} + \mathbf{X}_i \boldsymbol{\delta} + u$$

where $debt_{it-1}$ is the amount of undergraduate loans borrowed for the undergraduate career for student \mathbf{i} ; Δcoa_i is change in COA for undergraduate enrollment for student \mathbf{i} ; \mathbf{X}_i represents a vector of individual and institutional covariates for student \mathbf{i} including gender, race/ethnicity, parents' education, family or student income prior to graduation, high school grade point average, college entrance examination score, whether student worked while enrolled, undergraduate grade point average, marriage status, whether the student had children, and first institution selectivity, first institution control, first institution level; and $low\ salary_{it}$ is an indicator for the early-career industry in 2012 for each student \mathbf{i} (=1 if student works in a low-salary industry). The second stage will run a linear probability model (as the outcome variable is dichotomous).

Addendum: An Examination of the Effects of Undergraduate Debt on Postbaccalaureate Decision-Making

**Appendix C
Variable List**

Beginning Postsecondary Students

Note: Used for Model 1.

Postbaccalaureate Education Aspirations (Outcome Variable)

DGEVR06 Highest degree ever expected 2006

Undergraduate Debt (Endogenous Predictor)

CUMULN06 Cumulative total student loan amount borrowed through 2006

Prior Postbaccalaureate Education Aspirations (Prior Measure of Outcome Variable)

HIGHLVEX Highest degree ever expected 2003-04

Pre-College (covariates)

GENDER Gender

RACE Race/ethnicity

PAREduc Parent's highest level of education

CINCOME Income: Parents and independent (continuous) 2003-04

HCGPAREP High school grade point average (GPA)

TESATDER Admissions test scores (ACT or SAT)

In-College (covariates)

FCONTROL First institution control 2003-04

FLEVEL First institution level 2003-04

HRSWK06 Job while enrolled 2006: Hours worked per week

Current Family Structure (covariates)

DEPEND5A Dependency and marital status (separated=married) 2003-04

DEPCHILD Dependent children: Any 2003-04

Weights

WTB000 Weight

Integrated Postsecondary Education Data System

Note: When using BPS the years will cover AY 2003-2004 to AY 2005-2006. When using B&B the years will cover the entire undergraduate career of student. IPEDS has the same variable name regardless of the year of interest and in the interest of space I will only list the name of a single version of the variable.

Cost of Attendance at First Postsecondary Institution

cinson Total price for in-state students living on campus

cotson Total price for out-of-state students living on campus

Addendum: An Examination of the Effects of Undergraduate Debt on Postbaccalaureate Decision-Making

Baccalaureate and Beyond Longitudinal Study

Note: Unless otherwise noted these variables would be used for both Model 2 & 3.

Postbaccalaureate Education Enrollment (Outcome Variable, Model 2)

B2HIENR Highest post-bachelor's enrollment as of 2012

Intent to Attend Postbaccalaureate Education (Covariate, Model 2)

HIGHLVEX Highest level of education ever expected as of 2007-08

Early-Career Occupation (Outcome Variable, Model 3)

B2CJOCC33 Occupation for primary job in 2012

Undergraduate Debt (Endogenous Predictor)

B1BORAT Cumulative loan amount borrowed for undergraduate through 2007-08

Individual Characteristics (Covariates)

GENDER Gender

RACE Race/ethnicity (with multiple)

PAREduc Highest education level attained by either parent as of 2007-08

CINCOME Income: Income (dependents' parents and independents) in 2006

HSGPA Grade point average in high school

TESATDER SAT I (SAT or ACT composite score)

JOBNUM Number of jobs (excluding work-study) in 2007-08

GPA Undergraduate GPA as of 2007-08

DEPEND5A Dependency and marital status (separated is married) in 2007-08

DEPNUMCH Number of dependent children in 2007-08

Institutional Characteristics (Covariates)

I1CTRL First postsecondary institution control

I1LEVEL First postsecondary institution level

Weights

WTE000 Weight

Barron's Admissions Competitiveness Index

Selectivity Index (Covariates)

BARRONS04 Barron's Index for 2004



**2015 Dissertation Grant Proposal
Budget Form**

Salary/Stipend

\$ 12,691.00

Tuition and Fees (if any)

\$ 450.00

Travel

2016 AIR Forum (Presentation at 2016 Forum required):

\$ 1,205.00

Other research related travel:

\$ 3,264.00

(*Note*: Other planned travel should be listed in the "Timelines and Deliverables" section)

Other research expenses

Allowable expenses include: materials, such as software, books, supplies, etc.; consultant services, such as transcription, analysis, external researchers, etc.; and costs for publishing articles in journals. The purchase of computer hardware, printing a stand-alone book, overhead or indirect costs, and living expenses are not allowable. If you have questions about specific expenditures please contact AIR.

\$ 2,390.00

TOTAL REQUESTED

\$ 20,000.00

March 23, 2015

Dear Selection Committee:

I write to recommend Dominique Baker for the AIR Dissertation Grant. I write this letter with the strongest enthusiasm and faith in her abilities as a young scholar, analyst, and teacher. I serve as Dominique's advisor and she has worked consistently with me on my policy analysis research projects and in my classroom since I first met her in 2012. Dominique comes to Vanderbilt as a former Assistant Dean of Financial Aid from the University of Virginia.

Dominique is scheduled to defend her dissertation proposal this spring. She has spent the last year conceptualizing an idea, creating draft papers, presenting such papers, and getting IRB clearance for the work. Her work proposes to examine the role of loans on graduate school entry using novel quantitative techniques as well as by incorporating a mixed methods approach via a case study of an institution to further examine such relationships. Her methods will be strong, rigorous, and a contribution to the work around loans as a form of financial aid in the higher education field. This is a burgeoning area of research so her timing and commitment to this work is not only advantageous but also critical to this area of higher education. Dominique is well trained and committed to utilizing the best data for these questions and the NCES datasets (IPEDS in particular) are essential to this work. We have great hopes that the combination of both quantitative and qualitative work should yield not only important findings but recommendations for future data analyses involving questions of student loans in the U.S.

Dominique is one of our brightest and most competitive students at Peabody College. She is known to be exceptionally inquisitive, hard working, and innovative in her work and in her projects. She is also quite independent carving out work for her own research agenda while assisting me with mine as my student. This is a particularly important trait we have talked about throughout her years at Vanderbilt. In this way, Dominique is starting to carve out her pathway early and with the guidance of various professors. Her work is consistently accepted at peer reviewed conferences and she has already submitted some manuscripts for review just in her third year of doctoral study. In addition, her work and reputation is so strong that other professors have asked her to work with them on their projects with increasing leadership roles.

Dominique's work on my research projects has ranged from literature reviews, data collection, analysis of results from state administrative data in Texas (she is not cleared to run the data but can help with analysis and write up of the results), and Florida. She is a key research analyst with the Florida data where she is charged with merging NCES datasets into the state data. In fact, she runs tutorials for Peabody master's students on how to use IPEDS for their projects.

Dominique has also taken on an important role on a randomized experiment at a community college examining the role of stereotype threat. She has played a role that is far beyond the expectations of a graduate student due to her personal interest in the subject matter and also because she is great at organizing projects and gaining the trust of school officials. We look forward to working with her on this experiment, which will no doubt be stronger with her participation. I mention these series of projects to illustrate her capacity as an analyst and a trusted colleague on projects. As a result, a number of faculty have invested deeply in her development as a scholar.

In sum, Dominique is a well-trained analyst, a committed teacher (she has excelled at this in multiple classes), and a highly motivated scholar. Her mind is set to succeed and of equal importance to *learn*. In Dominique you will find someone who responds well to feedback and is eager to become stronger in anything she does. Her work will only get stronger over time, and I expect her to take on an increasingly public role as a respected scholar when she enters academia.

Please do not hesitate to contact me if I can offer any additional information on Dominique's application. I can be reached via email at stella.m.flores@vanderbilt.edu or by phone at 615-343-2131.

Sincerely,



Dr. Stella M. Flores
Associate Professor of Public Policy and Higher Education
Associate Professor of Sociology (secondary appointment)
Director of Graduate Studies
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