



ASSOCIATION FOR INSTITUTIONAL RESEARCH

Data and Decisions for Higher Education

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PROPOSAL DETAILS

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Project Description I

Title:

The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach

Statement of the research problem and national importance:

The purpose of this project is to explore the effects of state-level guaranteed tuition policies on institutional tuition levels. In order to make causal inferences, the study will employ a quasi-experimental research design using a difference-in-difference technique. Ensuring college affordability is perhaps the most critical challenge facing higher education in the United States today and the topic has received much attention by students, families, the media, institutional leaders, and policymakers at the state and national levels.

Between 2001 and 2011, in-state tuition rates at four-year public college and universities in the U.S. grew at an average rate of 5.6% per year *in excess of inflation* (College Board, 2011). This rapid growth brought attention to the issue of affordability, which has led institutional leaders and policymakers to consider a variety of measures to control and limit tuition growth. One of the more direct approaches has been freezing tuition for one or more years. University systems in Arizona, California, Iowa, Maine, Minnesota, and New Hampshire have proposed tuition freezes for the 2012-13 academic year in an effort to compel legislatures to maintain or increase their state support (Krogstad, 2012). A related approach involves fixed rate, or guaranteed, tuition in which students do not experience annual increases in tuition. These types of programs are becoming more prevalent across the nation. In 2008, 356 higher education institutions had guaranteed tuition plans in the United States (IPEDS, n.d.). By 2011, this number had risen to 467 across 44 states (IPEDS, n.d.).

Some guaranteed tuition programs are the result of state legislation. Illinois and Oklahoma have both enacted state-level guaranteed tuition policies. Illinois' truth-in-tuition policy took effect in fall 2004 and ensures that incoming students at Illinois' public four-year institutions pay level tuition rates for the first four years of college (Illinois Public Act 093-0228). Oklahoma's "Tuition Lock Program" was passed in 2007 and requires four-year public institutions to offer students the choice of a fixed rate of tuition for the first four years of college in lieu of a standard rate, which is subject to annual increases. The fixed rate is set at 15% more than the current standard rate (Oklahoma State Regents for Higher Education, 2011). Currently there is proposed legislation in Texas that would create a four-year tuition guarantee program similar to Illinois' law (Ura, 2012; Ward, 2012). To date, there has been almost no academic research on whether these programs have enhanced affordability for students in these states.

Although guaranteed tuition laws offer predictability in tuition levels for students, the incentives built into these programs are predicted to encourage tuition increases, which is not clearly beneficial to students. A limited amount of anecdotal evidence supports the expected findings of this study. For example, Illinois ranked 13th among states in average tuition at four-year public institutions in 2002; following the implementation of the guaranteed tuition legislation, this ranking rose to 6th by 2007 (COGFA, 2008). In addition, the average tuition growth rate at Illinois four-year public institutions was 12.0% between 2003 and 2007, compared to a national average of 8.8% (COGFA, 2008).

This study is structured to answer the following primary research question: Does the implementation of state-level guaranteed tuition programs lead to changes in tuition levels at public four-year institutions for first year students or in aggregate tuition amounts paid over four years?

This study's findings will provide insights into the effectiveness – or unintended consequences – of state-level guaranteed tuition programs and the

incentives imbedded within these programs. In addition, these findings will provide a better understanding of the potential effects of tuition policies in general. As such, the findings of this study will contribute to the scholarly literature on tuition setting and will be useful for policymakers, institutional researchers, and university leaders in states considering guaranteed tuition or similar policies. The findings may also influence state policymakers in states with these laws to either reconsider or restructure the policies if they are found to negatively impact affordability.

Review the literature and establish a theoretical grounding for the research:

Although guaranteed tuition policies have received coverage in the media, there is relatively little peer-reviewed literature on the topic. In general, the literature is focused on individual institution-level programs (e.g., NAICU, n.d.; Supiano, 1999; Thorne & Wright, 1999; Troutt, McEwen, & Yew, 1995). Some literature is critical of tuition guarantee programs. Morphew (2007), for example, suggests that tuition guarantees are misleading and have negative effects on underrepresented and poor students since they are less likely to persist and graduate. Some literature specifically addresses Illinois' guaranteed tuition program and the context of its adoption (e.g., Kim, 2004; Thomson, 2005), and even its effects on enrollments (Robertson, 2007). Robertson (2007) used Illinois' tuition guarantee legislation as a natural experiment to analyze its effects on enrollments at Chicago State University (CSU) and make inferences about price sensitivity. Minority students at CSU were found to be sensitive to price, with new students displaying more price sensitivity than continuing students. This study aligns with Morphew's (2007) claim that these programs may have differential effects for minority students.

There is a general tuition pricing literature, which is focused on variables known to affect tuition rates. Rusk & Leslie (1978) used price theory to predict that tuition at regional peer institutions, proportion of regional enrollments by sector, institutional costs, income of "buyers", and institutional quality could affect tuition. Although not directly tested, Rusk and Leslie's findings suggest that policy changes, like guaranteed tuition policies, are capable of producing significant changes in tuition. Other studies have highlighted the role that a state's fiscal environment plays in tuition pricing (Johnson, 1976), the need to consider context in studies of tuition setting (Martinez, 1997), and the unique nature of tuition pricing when customers/students are also inputs (Rothschild & White, 1995). A common theme across this body of literature is that variation exists in tuition pricing across states (e.g., Lenth, 1993; Johnson, 1976). This study seeks to investigate one source of this variation: state-level guaranteed tuition programs. In doing so, this study will contribute both to the literature on guaranteed tuition programs and to the broader literature on tuition setting.

In terms of its theoretical framework, this study relies on price theory from the field of economics to explain institutional pricing behavior that results from the introduction of a state-level guaranteed tuition law. A key assumption in the analytic framework used in this study is that the four-year tuition guarantee is associated with inflationary risk for institutions. This risk is assumed to contain a financial cost, which will be passed on to students in the form of higher tuition rates. The structure of tuition guarantee programs incentivizes institutions to overprice tuition in the first years to ensure revenue levels in the later years of the guarantee. When comparing freshman rates, it is expected that a guaranteed tuition rate will be higher than a traditional tuition rate, which is allowed to vary annually, due to the inflationary risk inherent in the guaranteed tuition plan. This idea of frontloading is shown in Figure 1, which is based on Morphew (2007). In this example, the first year tuition level for the guaranteed tuition plan is greater than the traditional tuition plan ($\$1,160 > \$1,000$).

It is possible that the frontloading levels could be set such that the added revenue collected in the first two years is offset by relatively lower tuition rates for the guaranteed tuition plan in the second two years of the program. As shown in the example in Figure 1, where the traditional tuition plan is assumed to have a 10% annual growth rate, a student would pay the same total cost (approximately \$4,640) over four years under either tuition plan. Setting the guaranteed tuition rate to result in the same aggregate four-year cost for incoming students ($A = B$ in Figure 1) would require perfect information. In practice, annual growth rates are not known, introducing risk for the guarantee. Institutions may seek to charge a premium for bearing this risk in the form of higher tuition (such that $A > B$ in Figure 1). This study will explore the effect of state-level guaranteed tuition plans both on first year tuition rates and on aggregate tuition rates over four years.

Figure 2 shows a box-and-line conceptual drawing in which the variable of interest is the presence of a state-level guaranteed tuition law. The outcome variable is institutional tuition levels and will be measured as either average annual tuition or total tuition over four years. One key assumption of a difference-in-difference approach is that any unobserved covariates will have the same effect for the treatment and control groups, allowing them to be ignored in the model. The conceptual model also shows the observed predictors of tuition that will be included in the model to increase the precision of the estimates.

These predictor variables are derived from prior literature and have been grouped into four categories: alternative revenue sources, institutional size, student financial aid, and state-level economic factors. Four different types of alternative revenue sources that could substitute for tuition revenue will be used as controls: in-state required fees for full-time undergraduates, state general appropriations to institutions, federal student aid funds received by campuses as measured by gross Pell grant revenues by institution by year, and out-of-state enrollments. Because total revenues are driven both by tuition and the number of students paying tuition, institutional size will be controlled for by using a measure of the total number of undergraduates by institution by year (Rusk & Leslie, 1978). The percent of full-time first-time undergraduates receiving any financial aid will also be used as a control. Finally, two control variables will be included for state-level economic factors: state unemployment rate (Humphreys, 2000), and median household income of each state each year (Rusk & Leslie, 1978).

Describe the research method that will be used:

In studying the effect of state-level guaranteed tuition laws on institutional tuition levels, this work will use a quasi-experimental research design and employ a difference-in-difference approach. Selection bias and omitted variable bias are challenges in the higher education literature (for a more complete discussion see Cellini, 2008) and this study seeks to alleviate these issues by using a quasi-experimental technique.

Figure 3 shows a graphical representation of the difference-in-difference model that will be used in this work. At the enactment of the guaranteed tuition law, the treatment group is expected to experience an increase in tuition in excess of any secular trend experienced by the control group (such that $Tuition_2 > Tuition_1$). The difference in the tuition levels after the enactment of the tuition guarantee law represents the treatment effect, or the excess tuition growth resulting from the policy.

A unique dataset will be constructed for this study. In order to rigorously specify the analysis, this study will utilize the time-based nature of the dataset and fixed effects will be included for institutions and years. This approach will help to control for unobserved heterogeneity and common time trends in the data to better isolate the effect of state-level guaranteed tuition laws on institutional tuition levels.

The analysis is focused on in-state average tuition for full-time undergraduates. This study hypothesizes that, following the introduction of a statewide guaranteed tuition law, institutions will increase their tuitions as compared with institutions not subject to guaranteed tuition laws. In order to test this, this study uses a difference-in-difference empirical approach on data spanning 2000-2011. The dataset is a cross-sectional time series, which means that each variable is identified by institution, i , and year, t . The independent variable of interest seeks to capture those observations (at the institution-year level) for which the guaranteed tuition law applies. For Illinois, the variable of interest is an interaction between an indicator variable ($Illinois_i$) for those institutions located in Illinois and an indicator variable ($Post2004_t$) for the years after the enactment of Illinois' truth-in-tuition law. As Illinois' guaranteed tuition law was first implemented in fall 2004, the latter variable is a dummy for the years 2004-2011. Therefore, the basic empirical specification is:

$$Tuition_{it} = \beta(Indiana_i * Post2004_t) + \mathbf{X}_{it}\boldsymbol{\gamma} + \mu_i + \nu_t + \varepsilon_{it} \quad (1)$$

The specification in equation 1 also includes institutional fixed effects (represented by μ_i) and year effects (represented by ν_t); ε_{it} is the error term. \mathbf{X}_{it} is a vector of time-varying control variables. This model will be tested for both individual year tuition and aggregate tuition over four years.

Additional specifications will be analyzed for the guaranteed tuition law in Oklahoma. Oklahoma's guaranteed tuition law was first enacted in 2008 and the basic empirical specification is shown in equation 2:

$$Tuition_{it} = \beta(Oklahoma_i * Post2008_t) + \mathbf{X}_{it}\boldsymbol{\gamma} + \mu_i + \nu_t + \varepsilon_{it} \quad (2)$$

These two specifications will enable analysis of the primary research question in this study. They will also allow for comparison of the results across these two states and for consideration of differences between the effects of the guaranteed tuition plans in Illinois and Oklahoma.

In addition to this primary research question, this study will run four corollary analyses that focus on dividing the sample to better isolate control groups and to conduct robustness checks. First, this study plans to divide the sample in order to conduct analyses by geographic region. Prior literature has shown that policy ideas can flow through a diffusion process based on geographic proximity (Berry & Berry 2007). This study will use IPEDS data for this measure to test the guaranteed tuition laws in Illinois and Oklahoma when restricting the sample to the neighbors of each adopting state (by using the Great Lakes region for Illinois and the Southwest region for Oklahoma).

Second, this study will seek a more nuanced control group by considering institutional tuition levels within different institutional peer groups based on the 2000 Carnegie classification system. This will enable separate analyses for three institutional types: Masters Colleges and Universities I, Doctoral/Research Universities-Extensive, and Doctoral/Research Universities-Intensive. This study will use the 2000 Carnegie classification system instead of the 2010 revised system, because the 2000 typology was in place for the majority of the years of the dataset and offers a more straightforward classification scheme.

In addition, this study will run two robustness checks. The first will be to restrict the sample to exclude institutions that instituted institution-level guaranteed tuition programs independently from the state laws. Because these institutions might have unobserved differences from other institutions that did not select to implement these programs at the institution-level, the analysis will be re-run using a sample that excludes these institutions.

Finally, this study will run robustness checks on multiple years of data as guaranteed tuition programs were not fully implemented for all cohorts of students in the first year in which the laws were enacted. In order to capture the effects of multiple cohort participation in the programs, the laws will be tested in their first year of enactment and for subsequent years of enforcement.

Uploaded Appendix Document(s):

- [University of Illinois Proposal Transmittal Letter](#)
- [Proposal Figures, Table, and Appendix](#)

Project Description II

Will you use NCES target dataset? Yes

Please check all NCES datasets that apply

- IPEDS Finance (F)
- IPEDS Institutional Characteristics (IC)
- IPEDS Student Financial Aid (SFA)

Explain why each dataset best serves this research. Include a variable list for each dataset used.

This analysis will rely on NCES' IPEDS data, specifically the Finance (F), Institutional Characteristics (IC), and Student Financial Aid (SFA) datasets. In addition, this study will incorporate data from the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. These datasets were selected because they offer the best measures of state- and institutional-level variables for testing institutional tuition policies. Alternative datasets, such as the Delta Cost Project dataset, were considered, but will not be used due to the sub-optimal (for purposes of this study) treatment of parent and child campuses in the Delta Cost Project dataset.

The dataset used for this work is identified at the institution-year level. The estimating sample is comprised of public four-year institutions located in one of the U.S. states or the District of Columbia. Additionally, only active, degree-granting institutions that offer undergraduate degrees, are not U.S. service institutions, and are eligible to participate in Title IV federal financial aid programs will be included. After accounting for missing values, the final estimating sample will be comprised of approximately 6,628 observations for 636 institutions over the years 2000-2011.

The variables to be used in this study are:

IPEDS datasets: TUITION2, FEE2, SCFA2, F1B11, A043, F1E01, E013, SCFA13N, ANYAIDP, OBEREG, CARNEGIE, CHG1TGTD, CHG1FGTD.

U.S. Bureau of Labor Statistics: CPI, STATE UNEMPLOYMENT RATE

U.S. Census Bureau: MEDIAN HOUSEHOLD INCOME

Additional measures will be constructed from these variables as described in the research methods section.

Detailed variable descriptions and source information can be found in Table 1.

Will you use NSF target dataset? No

Explain why each dataset best serves this research. Include a variable list for each dataset used.

Will you address the NPEC focus topic? No

If yes, please briefly describe:

Project Description III

Provide a timeline of key project activities:

May 2013 – August 2013

- Data collection and dataset cleaning
- Introduction, literature review, and conceptual framework writing
- Summer graduate assistant time on project

August 2013 – December 2013

- Data analysis
- Data, methods, results, and policy implications writing
- Submit a conference proposal to Association for Education Finance and Policy (AEFP) anticipated deadline in November
- Submit a conference proposal to the National Education Finance Conference (NEFC) anticipated deadline in December
- Submit AIR mid-year report due by December 13, 2013
- Two course release for PI for the Fall 2013 semester to concentrate time on project
- Graduate assistant time on project

December 2013 – May 2014

- Produce a draft version of the scholarly manuscript for conference presentations
- Paper presentation at AEFP March 6-8, 2014, San Antonio, TX
- Paper presentation at NEFC, May 2014, conference location not yet announced
- Incorporate feedback from conference presentations
- Produce a final scholarly manuscript
- Produce a policy/practitioner-oriented publication based on findings
- Submit policy brief for publication
- Paper presentation at AIR Forum, May 26-30, 2014, Orlando, FL
- Submit final manuscript to a scholarly journal

June 2014

- Submit AIR final report due by June 30, 2014.

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

Project deliverables will be comprised of conference presentations to scholarly audiences, at least one peer-reviewed journal publication, and a policy brief. There are three anticipated conference presentations of the work during the course of the grant at the Association for Education Finance and Policy annual conference, the National Education Finance Conference, and the 2014 AIR Forum. Because of the quasi-experimental research design used in this study, it is anticipated that the scholarly article that results from this research project will be placed in either a top-tier higher education journal or an American Educational Research Association journal (e.g., *Research in Higher Education*, *Review of Higher Education*, *Journal of Higher Education*, *Education Evaluation and Policy Analysis*, etc.). Because of the relevance of this work for institutional and policy audiences, it is anticipated that this project will also result in one policy/practitioner oriented publication that will be targeted to a relevant outlet with a wide circulation in the higher education community (e.g., *Change*, *The Magazine of Higher Learning*; a policy brief through the Wisconsin Center for the Advancement of Postsecondary Education, an Association for the Study of Higher Education *Higher Education Report*, an *AIR Professional File* volume, etc.).

Describe how you will disseminate the results of this research:

This work will be submitted for presentation at two spring 2014 academic conferences: the Association for Education Finance and Policy annual conference and the National Education Finance Conference. In addition, the final paper from this project will be presented at the 2014 AIR conference in Orlando, Florida. Additional dissemination will take place through the publication of a peer-reviewed article and a policy/practitioner oriented publication of this work.

As a tenure track faculty member, receipt of this grant will enable Dr. Delaney to further develop her research skills using quasi-experimental research designs and will provide a basis for future use of NCES datasets in her scholarship. An additional aspect of dissemination is Dr. Delaney's ability to train a graduate student in the use of NCES datasets through a research assistantship position.

Provide a reference list of sources cited:

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IRB Statement

Statement of Institutional Review Board approval or exemption:

An IRB request was submitted for exempt review on December 13, 2012. Upon approval, evidence of the exemption will be shared with AIR.

Statement of Use of Restricted Datasets

No restricted datasets will be used in this study as all data are available through publicly available sources.

Biographical Sketch

Jennifer Delaney's Biography Sketch

Jennifer A. Delaney is an assistant professor of higher education in the College of Education at the University of Illinois at Urbana-Champaign. She is a faculty affiliate at both the Institute for Government and Public Affairs and the Forum on the Future of Public Education at the University of Illinois. She is also a faculty affiliate at the Wisconsin Center for the Advancement of Postsecondary Education. Previously, Dr. Delaney held a position as an assistant professor of higher education at the University of Wisconsin-Madison.

Dr. Delaney earned a PhD in Higher Education Administration from Stanford University, where she was an Association for the Study of Higher Education (ASHE)/Lumina Foundation for Education Dissertation Fellow in 2005-06. She holds a Master of Education degree in Higher Education from Harvard University and a Bachelor of Arts degree in English from the University of Michigan.

Dr. Delaney's current research agenda includes a line of research (with William R. Doyle, Vanderbilt University) that considers the role of higher education in state budgets. One article developed from this line of research entitled, "State spending on higher education: Testing the balance wheel over time", won the 2012 Scholarly Paper Award from the *Journal of Education Finance*. In addition, she has analyzed the effect of federal academic earmarks on state funding for higher education. The proposed project will enable Dr. Delaney to continue to develop this line of scholarship by further investigating state policy related to higher education finance.

In the area of student financial aid, Dr. Delaney has considered how the financial incentives of merit aid programs change the academic content of students' undergraduate careers and impact subsequent enrollment in graduate school. She also has a line of scholarship (with Patricia Yu, University of Wisconsin-Madison) that investigates the diffusion of higher education policy innovations internationally. Dr. Delaney's scholarship has appeared in: *Change: The Magazine of Higher Learning*, *Compare: A Journal of Comparative and International Education*, the *Journal of Education Finance*, the *Journal of Student Financial Aid*, *Policy Futures in Higher Education*, and *Research in Higher Education*.

Dr. Delaney's research agenda is informed by her engagement with the higher education policy community. She has worked as a policy analyst with the National Center for Public Policy and Higher Education, served as a consultant for the Secretary of Education's Commission on the Future of Higher Education, and was the assistant staff director for research with the Advisory Committee on Student Financial Assistance. Dr. Delaney is currently serving in the elected position of Chair of the Council for Public Policy in Higher Education with ASHE.

Dr. Delaney serves as a Consulting Editorial Board member for *Research in Higher Education* and an Editorial Advisory Board Member for the *Journal of Education Finance*. She is a member of the American Education Research Association (AERA), ASHE, the Midwest Political Science Association, and the National Education Finance Conference. She is on the 2014 program committee for the AERA annual conference and was on the 2011 program committee for the ASHE conference.

In 2012, Dr. Delaney attended a training seminar on the use of the IPEDS datasets entitled, Assess and Exploring the Financial Component of the Integrated Postsecondary Education Data System (IPEDS), offered by Isaiah L. O'Rear, National Center for Educational Statistics.

Budget Requirements

Jennifer Delaney' Budget

Personnel-Time on Project
%(FTE) Academic Year: 30.00
%(FTE) Summer: 0.00

Personnel-Salary & Benefits
Academic Year: \$ 97964.00
Summer: \$ 0.00

Graduate Research Assistant's Budget

Personnel-Time on Project
%(FTE) Academic Year: 12.50
%(FTE) Summer: 25.00

Personnel-Salary & Benefits
Academic Year: \$ 34500.00
Summer: \$ 10792.00

Total Salary and Wages: \$36399.70

Travel: \$1200.00
Other travel related expenses: \$2350.00
Other research expenses: \$0.00
Total Request: \$39949.70

Funding History

Dr. Delaney was a 2005-2006 recipient of an Association for the Study of Higher Education/Lumina Foundation for Education Dissertation Fellowship. She has also served as a consultant for the Access to Success Initiative's Maximizing Financial Aid Workgroup that was co-sponsored by The Education Trust and The National Association of System Heads. If funded, this will be Dr. Delaney's first grant through AIR. The proposed study would not use any other prior, current, or pending funds.

Figure 1: Example of the Difference in Tuition Levels between Guaranteed and Traditional Tuition Plans

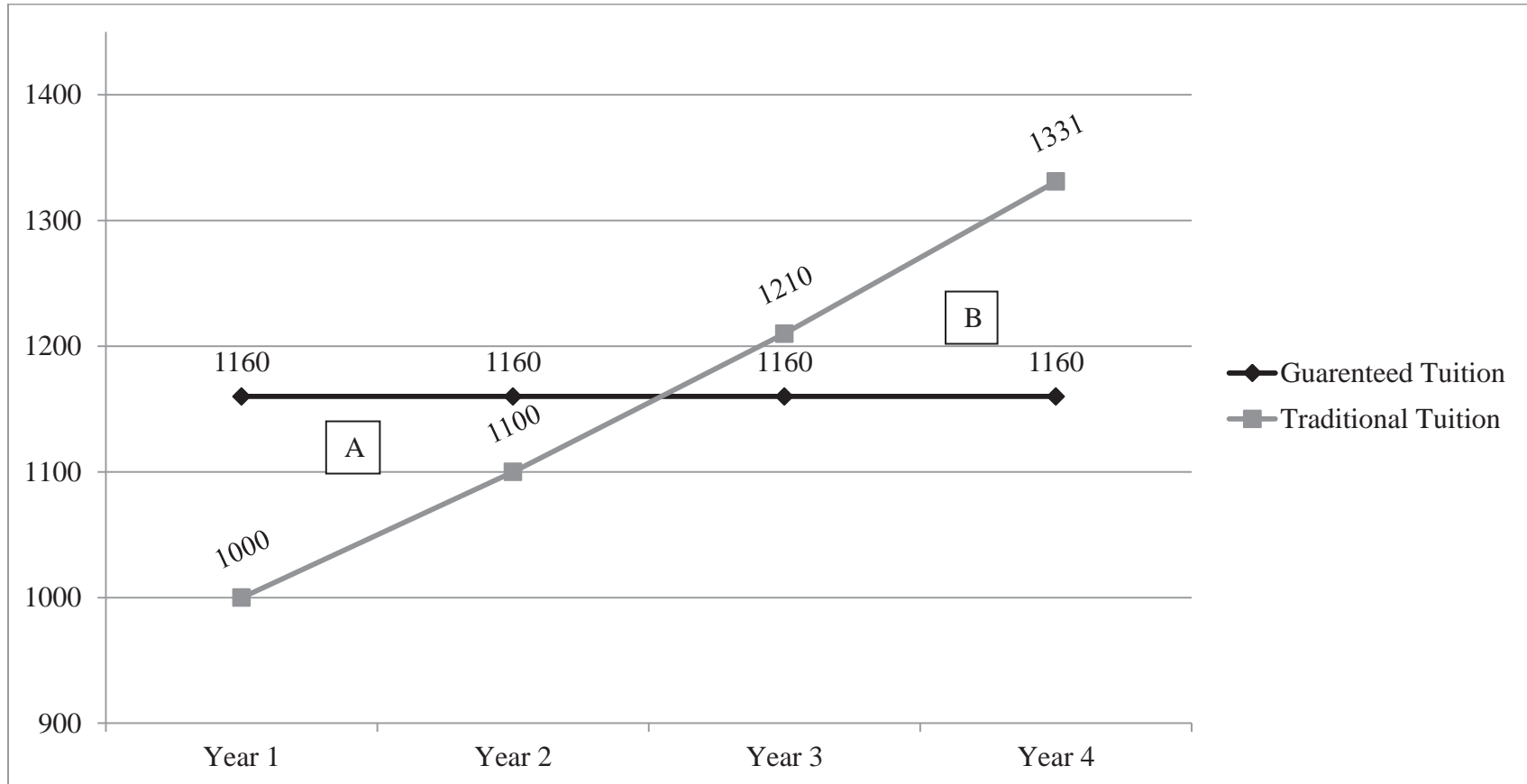
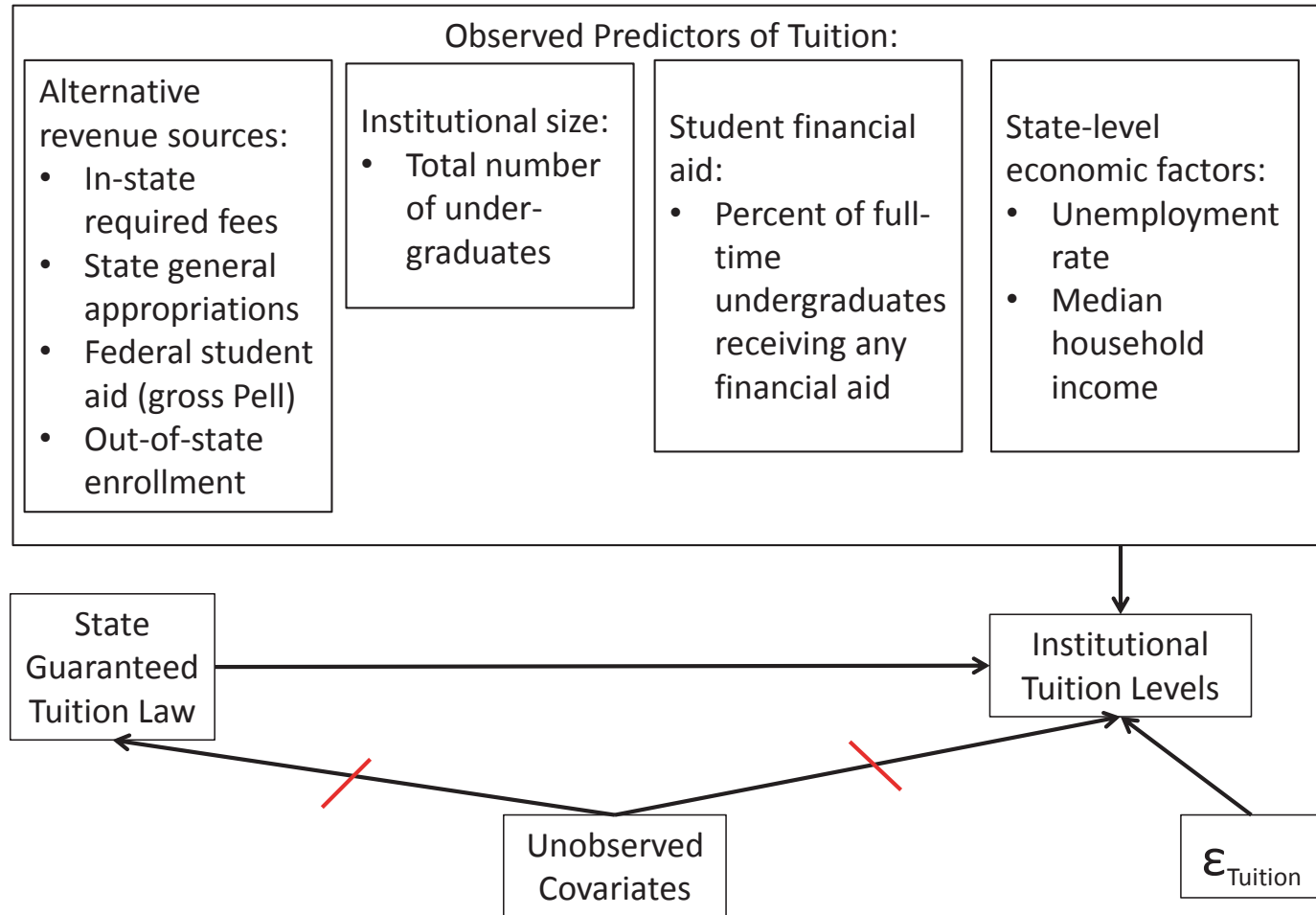
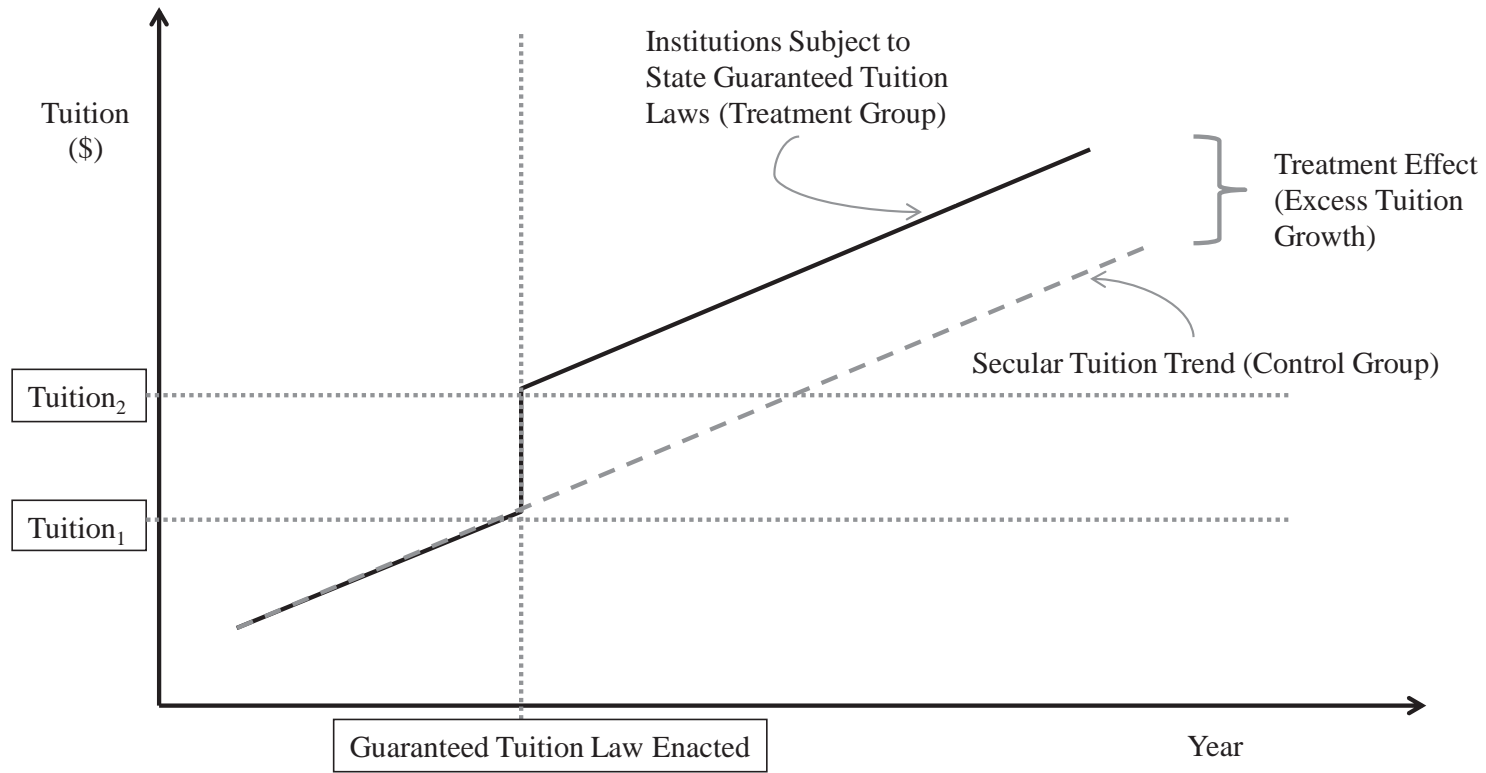


Figure 2: Conceptual Drawing of the Relationships among Variables in Difference-in-Difference Model of State Guaranteed Tuition Laws



Difference-in-difference designs assume that unobserved covariates have the same effect on the treatment and control groups.

Figure 3: Difference-in-Difference Model: Predicted Effect of State Guaranteed Tuition Laws



The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach

Table 1: Variables List			
Variable Name	Variable Long Name	Variable Description	Source Code
tuition2	In-state average tuition for full-time undergraduates	Charges to full-time undergraduate students for the full academic year 2010-11. In-state average tuition.	1
fee2	In-state required fees for full-time undergraduates	Charges to full-time undergraduate students for the full academic year 2010-11. In-state required fees.	1
scfa2	Total number of undergraduates	Student Financial Aid and Student Counts - Fall Cohort. Total number of undergraduate students.	1
f1b11	State appropriations (2002-2011)	State appropriations are amounts received by the institution through acts of a state legislative body, except grants and contracts and capital appropriations. Funds reported in this category are for meeting current operating expenses, not for specific projects or programs.	1
a043	State appropriations (2000-2001)	State appropriations are revenues received by an institution through acts of a state legislative body, except grants and contracts. These funds are for meeting current operating expenses and not for specific projects or programs.	1
f1e01	Gross Pell (2002-2011)	Pell grants represents the gross amount of Pell grants disbursed or otherwise made available to recipients by the institution.	1
e013	Gross Pell (2000-2001)	Pell grants are a form of federal student aid provided as part of the Higher Education Act of 1965, Title IV, Part A, Subpart I, as amended. This program provides eligible undergraduate postsecondary students with demonstrated financial need with grant assistance to help meet education expenses.	1
scfa13n	Number of students in cohort who are out-of-state	Student Financial Aid and Student Counts - Fall Cohort. The number of full-time first-time degree/certificate-seeking undergraduates who are out-of-state.	1
anyaidp	Percent of full-time first-time undergraduates receiving any financial aid	Student Financial Aid and Student Counts - Financial Aid. Percentage of all full-time, first-time degree/certificate-seeking undergraduate students who received any financial aid.	1
CPI	Consumer Price Index	Consumer Price Index - All Urban Consumers (Series Id: CUUR0000SA0). Not Seasonally Adjusted. Area: U.S. city average. Item: All items.	2
State Un-employment Rate	State Unemployment Rate	Unemployment rates for states. Statewide Data. Annual Average.	3

The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach

Median Household Income	Median Household Income by State	Median Household Income by State (Households as of March of the following year).	4
obereg	Geographic Regions	IPEDS geographic region codes include: US Service schools; New England; Mid East; Great Lakes; Plains; Southeast; Southwest; Rocky Mountains; Far West; and Outlying areas.	1
carnegie	2000 Carnegie	The 2000 Carnegie Classification includes all colleges and universities in the United States that are degree-granting and accredited by an agency recognized by the U.S. Secretary of Education. The 2000 edition classifies institutions based on their degree-granting activities from 1995-96 through 1997-98. Classifications: Doctoral/Research Universities-Extensive; Doctoral/Research Universities-Intensive; Masters Colleges and Universities I; Masters Colleges and Universities II; Baccalaureate Colleges-Liberal Arts; Baccalaureate Colleges-General; Baccalaureate/Associates Colleges; Associates Colleges; Theological seminaries and other specialized faith-related institutions; Medical schools and medical centers; Other separate health profession schools; Schools of engineering and technology; Schools of business management; Schools of art, music, and design; Schools of law; Teachers colleges; Other specialized institutions; and Tribal colleges.	1
chg1tgtd	Published in-district tuition 2010-11 guaranteed percent increase (if applicable)	The percent increase at which tuition is guaranteed for years students are enrolled. This variable will not have a percentage, if institution does not have tuition guarantee program, or institution has a tuition guarantee program, but tuition for in-district students is not guarantee.	1
chg1fgtd	Published in-district fees 2010-11 guaranteed percent increase (if applicable)	The percent increase at which required fees are guaranteed for years students are enrolled. This variable will not have a percentage, if institution does not have tuition guarantee program, or institution has a tuition guarantee program, but required fees for in-district students are not guaranteed.	1

Source Code	Variable Source	URL
1	IPEDS Data Center	http://nces.ed.gov/ipeds/datacenter/Default.aspx
2	US Department of Labor. Bureau of Labor Statistics. CPI.	http://www.bls.gov/cpi/
3	US Department of Labor. Bureau of Labor Statistics. State Unemployment Rates.	http://www.bls.gov/lau/tables.htm
4	U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements.	http://www.census.gov/hhes/www/income/data/statemedian/index.html

The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach

Appendix A: Estimating Equations

In order to ensure that the equation formatting is displayed correctly, the estimating equations included in the research methods section are replicated here:

$$Tuition_{it} = \beta(Illinois_i * Post2004_t) + \mathbf{X}_{it}\boldsymbol{\gamma} + \mu_i + \nu_t + \varepsilon_{it} \quad (1)$$

$$Tuition_{it} = \beta(Oklahoma_i * Post2008_t) + \mathbf{X}_{it}\boldsymbol{\gamma} + \mu_i + \nu_t + \varepsilon_{it} \quad (2)$$

where,

\mathbf{X}_{it} = a vector of time-varying control variables,

μ_i = institutional fixed effects,

ν_t = year effects,

ε_{it} = error term.

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of Sponsored Programs
and Research Administration
1901 South First Street, Suite A
South Research Park
Champaign, IL 61820



January 9, 2013

U of I REF. NO. 2013-03469
TITLE: The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach
AMOUNT : \$ 39,950
PERIOD: 5/1/2013-4/30/14
PRINCIPAL INVESTIGATOR(s): Jennifer Delaney
DEPARTMENT: Education
TYPE OF REQUEST: New

Enclosed please find the above referenced proposal. This proposal has been approved for submission by the proper University administrative official(s).

If this proposal is awarded, the University would expect to negotiate award terms and conditions that mirror recently negotiated agreements.

Your consideration will be appreciated. Any contract or grant supporting the above described project must be issued in the University's corporate name, The Board of Trustees of the University of Illinois, Urbana, Illinois 61801.

Any questions of a non-technical nature regarding this proposal should be addressed to the individual below at (217) 333-2187:

Timothy Tufte

Sincerely,



Linda Learned, Interim Director
Office of Sponsored Programs and Research Administration