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Determinants of Student Debt in New England

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Abstract

This paper examines the determinants of average student debt in New England based on financial, institutional and demographic variables. The dataset is derived from CollegeInsight and measures 15 variables across 71 institutions during the 2011-2014 academic school years. Between 2011 and 2014, average student debt increased 7%, tuition and room and board increased 10%, the percentage of Hispanic students increased 20% and the percentage of international students increased 26%. The estimated model, $\ln(AVDEBT) = 7.401 - 0.090\ln(TUITION) - 0.042\ln(BOOKS) + 0.433\ln(ROOMBOARD) + 0.07\ln(ENROLLMENT) - 0.200PUBLIC - 4.106ASIAN - 1.992AFAMERICAN + 0.254HISPANIC + 0.007WHITE + 0.641INTERNATIONAL - 0.676PERCENTFEDDEBT + 1.018PERCENTPELL$, indicates that the primary determinants of average student debt in the region are: room and board costs, enrollment, public vs. private classification, the percentage of Asian, African American and international students, the percentage of student debt that comes from federal loans and the percentage of Pell Grant recipients. Other regions in the country could leverage a similar study to understand where the student debt burden is most likely coming from. The resulting information can stir policy discussions amongst institutions and governmental organizations to decrease the burden and ease the so-called student debt crisis.

Keywords: Student Debt, New England, Determinants, Maine, Massachusetts, New Hampshire, Vermont, Connecticut, Rhode Island

Introduction

A college education is understood to be a major component of a better life. In 2013, those with a Bachelor's degree earned 68% more than those with a high school diploma (Joint Economic Committee, 2013). Despite increasing returns to education, the cost of education, specifically in the form of student debt, is increasing. From 2011 to 2014, the average student debt per borrower increased by 19.2% (Goldy-Brown, 2019). At the end of 2014, the national student loan default rate was 11.5% ("National Student Loan Cohort Default Rate Falls", 2018). The issue of rising student debt is not only a key focus for college graduates and their families, but politicians and economists are also weighing in on the so-called crisis. Since student debt is the second largest category of household debt, conversations are stirring in regard to who should bear the burden, how it will affect the macroeconomy, and how it will impact household purchases, like homes, cars, etc.

The purpose of this research is to analyze the determinants of average student debt for college students in New England, in order to understand what institutional factors are driving the student debt crisis in the specific region.

Literature Review

Little empirical research exists that highlights the determinants of average student debt. The majority of existing research pertaining to student debt focuses on the government's role in distributing aid, student loan characteristics and repayment practices, financial aid, and the overall burden on students' future success.

A study that closely resembles the goal of this research paper was conducted by Macy and Terry (2007), who analyzed financial, institutional, and demographic characteristics of the top 196 undergraduate institutions across the United States. They used 2005 data from the U.S.

News & World Report website to estimate student debt factors. Their findings indicate that tuition costs and enrollment sizes have a significant positive relationship with average student debt (Macy & Terry, 2007). Having a full-time status, being female, and being African American were factors that were found to have a positive relationship but were otherwise found to be statistically insignificant (Macy & Terry, 2007). Variables reflecting the number of classes with 50+ students, the value of endowment funds, the level of alumni donations, and being Hispanic were found to have a significant negative relationship with average student debt; the percentage of Pell Grant recipients, the cost of room and board, and the public institution characterization have a negative relationship with student debt, but are statistically insignificant (Macy & Terry, 2007). Their analysis did not consider the impact of federal versus nonfederal aid levels.

Another study, conducted by Craig and Raisanen (2014) which looked to further expand upon Macy and Terry's study (2007), analyzed 841 four-year non-profit institutions for the 2011 academic school year. In addition to tuition and room and board significantly influencing average student debt, Craig and Raisanen (2014) found that students borrow more when they attend schools in urban areas and those who attend college part-time borrow less. In addition, Craig and Raisanen (2014) found that average debt per student is lower at schools that admit students with higher entrance exam scores.

Gale, Harris, Renaud, and Rodihan (2014) found that 3/5 of the 70% increase in student loan withdrawal between 2002 and 2011 was due to higher enrollment – a 17% increase – and higher costs to attend – a 16% increase. The remaining difference is attributed to how students are paying for college. More students are taking out loans of greater volume, to the point where student loans finance roughly 50% of college costs. A change in the type of loans and type of students needing loans could increase the demand, thus increasing total student debt, while

student loan availability and federal subsidies could influence the supply of student loans (Gale et al., 2014).

Although the general population assumes that an institution's tuition is the driving force behind rising student debt, Monks (2014) claims it cannot be classified as the main culprit. Some literature suggests that the state and national level of aid plays a major role as well. The Joint Economic Committee of the United States Congress (2013) reports that "state subsidies and grants, which were significant in the past, have declined, leaving students and their families to bear more of the financial burden of attending college and increasing their reliance on federal financial aid, including grants and loans." Private, nonfederal loans also pick up the slack that was left behind by decreasing state aid. An analysis regarding average student debt variation levels, conducted by Monks (2014), supports the Joint Economic Committee's report with evidence that a decrease in state-based grants has contributed to higher student debt levels for public university graduates, not so much for private institutions. In fact, Monks (2014) found that a 10% increase in state-based aid led to a 1% decrease in the average of total student debt. The 2011-2012 academic year saw an average 7.5% decrease in total state appropriations for the United States; New Hampshire experienced a 39% decline (Ma & Baum, 2012).

Colleges may be utilizing more institutional aid, in the form of merit aid, to lower the burden of the cost of education and to attract more honorable students. Monks (2014) emphasizes that colleges who practice need-blind aid distribution – aid based on merit – will have higher levels of average student debt, in comparison to colleges that attempt to meet the full need of students. During 2011-2012 school year, the federal government provided 44% of grant aid, 37% came from colleges and 9% came from the state (Baum, Ma, & Payea, 2012). Likewise, 37% came from the federal government, 41% from colleges and 8% from the state during the

2014-2015 school year (Baum, 2015). The four-year gap also saw a decrease in Pell Grant recipients, 37% of undergraduates in 2011 versus 35% in 2014, as well as an increase in private aid – 10% to 14% (Ma & Baum, 2012 and 2015).

The Joint Economic Committee (2013) states that in 2011, average student debt in the United States was greatest amongst New Hampshire graduates, roughly \$33,113. For Vermont graduates, 82% of their first full-time salary was equivalent to their total student debt. With the debt burden being so high for most recent graduates, the private loan default rate has experienced slight increases. According to Baum, Ma, Pender, & Bell (2015), “student loan default rates are consistently two to three times as high for borrowers who attend for-profit and public two-year institutions as for those who attend private nonprofit and public four-year institutions.” It is important to note, however, that a small percentage of two-year students borrow private loans, whereas most four-year students borrow federally, thus scaling the difference significantly. Of four-year students who do borrow, debt levels are higher when graduating from for-profit institutions versus nonprofit institutions (Baum et al., 2015). Although default rates are increasing – the federal student loan default rate rose from 5% to 9.1% between 2004 and 2010 (Gale et al., 2014) – repayment and default behavior is not affected by institutional factors; it is impacted by the behavior of the individual who is borrowing (Volkwein & Szelest, 1995). With that being said, for-profit graduates have been found to have a slower loan repayment than nonprofit graduates (Belfield, 2013). Gale et al. (2014) note that in 2012, 17% of borrowers had late payments of 90 or more days.

There is concern that the overall burden of increasing debt will affect the way graduates participate in the economy. Student debt rose from 3% of total household debt in 2007 to 5% in 2010, all while household incomes have fallen (Fry, 2012). Education as a driver for upward

mobility becomes weakened as a result of indebtedness. Students who borrow student loans typically have lower savings rates, fewer assets, and a smaller net worth than those who don't borrow (Monks, 2014). Large investments and financial-based decisions, such as buying a car or a home may become less feasible (Hillman, 2006).

Look at the housing market for example. "High student loan burdens may disqualify students from taking on mortgage debt, and debt aversion may dissuade student loan holders from purchasing a home even if qualified to do so" (Gale et al., 2014). According to Brown and Caldwell (2013), thirty-year olds with student debt were more likely to own a house during the 2008 housing bubble. When the recession hit, nonstudent debtors became more likely to own a home; this trend has been confirmed up through 2012 and is very similar to debt-funded purchases of vehicles before and after the recession (Brown & Caldwell, 2013). Brown and Caldwell (2013) further found that in 2012, nonstudent debt borrowers had, on average, credit scores 15 points above those who borrowed student loans. Following the recession, credit lenders became stricter with debt-to-income ratios, which could have had implications for those with large accruals of student debt, thus limiting their ability to make debt-funded purchases. Increasing student debt may also discourage people from contributing to their retirement savings, getting married at a young age, and/or building up a standard savings account.

The need to borrow can influence students to drop out before their degree is completed, something that typically happens to students who come from lower-income families. Borrowing may also influence students to pursue degrees with higher-paying job associations, creating labor shortage conditions for lower-paying jobs. Using results from the 2002 National Student Loan Survey, Baum and O'Malley (2003) report that 40% of respondents transferred to a less expensive undergraduate school or delayed going back to school due to student loan accrual. In

addition, Rothstein and Rouse (2007) found that a \$10,000 increase in student debt decreases the likelihood of a student accepting a nonprofit, government or education-related job after graduation by 6%. For each additional \$10,000 in debt, students request salaries that are \$2,000 higher (Rothstein & Rouse, 2007).

Employment and consumption effects of high student debt are main concerns that many politicians hypothesize will lead to an economic event. Understanding influences of student debt, from the institutional point of view, may help politicians and institutional decision makers implement changes that lead to an increase in educational accessibility and affordability in the future, thus contributing to larger economic benefits as well.

The specific determinants of student debt, similar to those Macy and Terry (2007) and Craig and Raisanen (2014) found, are not thoroughly researched, if at all. This study looks to confirm and expand upon their findings to further develop research on the topic. This study will focus specifically on the major institutional drivers of student debt burden in New England, using more recent data.

Data and Methods

Data from CollegeInsight (2018), an initiative from the Institute of College Access & Success that collects and organizes data regarding college diversity, affordability and student success, was used to analyze the determinants. Data was collected for the 2011-2014 academic years in New England across 71 educational institutions; many schools were eliminated from the data collection due to missing variables. The educational institutions were analyzed across 13 variables: average debt of graduates, in-state tuition and fees, books and supplies, on-campus room and board, undergraduate enrollment, institution sector type, ethnicity types –Asian/Native Hawaiian/Pacific, Black/non-Hispanic, Hispanic, white/non-Hispanic, Foreign/ international –

federal debt of graduates as percent of total debt, and percentage of undergraduates who received Pell Grants.

A multivariable regression, similar to the one Macy and Terry (2007) developed, was used to identify the main determinants of average student debt in New England:

$$\begin{aligned} \ln(AVDEBT) = & \\ & B_0 + B_1 \ln(TUITION) + B_2 \ln(BOOKS) + B_3 \ln(ROOMBOARD) + \\ & B_4 \ln(ENROLLMENT) + B_5 PUBLIC + B_6 ASIAN + B_7 AFAMERICAN + \\ & B_8 HISPANIC + B_9 WHITE + B_{10} INTERNATIONAL + B_{11} PERCENTFEDDEBT + \\ & B_{12} PERCENTPELL. \end{aligned}$$

AVDEBT is the average cumulative student loan amount borrowed by graduates to finance their undergraduate education. TUITION is the institution's published tuition and required fees amount for the entire academic year. BOOKS is the institution's published cost of book and supplies for the entire academic year. ROOMBOARD is the institution's estimated cost of on-campus room and board for freshman students for the entire academic year.

ENROLLMENT is the number of undergraduates enrolled during the academic year. PUBLIC is a dummy variable, where 1 = public institution and 0 = private institution. ASIAN is the percentage of undergraduates who are Asian, Native Hawaiian or Pacific Islander.

AFAMERICAN is the percentage of undergraduates who are African American, non-Hispanic. HISPANIC is the percentage of undergraduates who are Hispanic. WHITE is the percentage of undergraduates who are white, non-Hispanic. INTERNATIONAL is the percentage of students who are foreign or international. PERCENTFEDDEBT is the per capita federal student loan debt amount of graduates divided by the per capita overall student loan debt amount of graduates.

PERCENTPELL is the percentage of undergraduates who received Pell Grants during the academic year. Two variables not included in the regression – Average Federal Loan Debt and Percent of Graduates with Debt will be analyzed in the summary statistics.

Table 1 represents the summary statistics for 15 variables. N = 284 for each variable.

Table 1: Summary Statistics				
Variable	Mean	Standard Deviation	Maximum	Minimum
<i>AVDEBT</i>	\$ 29,008	\$ 8,278	\$ 49,439	\$ 12,347
<i>TUITION</i>	\$ 31,760	\$ 13,626	\$ 49,056	\$ 6,867
<i>BOOKS</i>	\$ 1,026	\$ 346	\$ 3,450	\$ 300
<i>ROOMBOARD</i>	\$ 11,880	\$ 1,737	\$ 15,200	\$ 7,100
<i>ENROLLMENT</i>	5,042	4,944	25,221	346
<i>PUBLIC</i>	0.25	0.43	1	0
<i>ASIAN</i>	5.47%	5.09%	24%	0%
<i>AFAMERICAN</i>	5.60%	5.57%	37%	1%
<i>HISPANIC</i>	7.19%	3.39%	19%	1%
<i>WHITE</i>	62.65%	15.52%	88%	6%
<i>INTERNATIONAL</i>	6.975	7.19%	33%	0%
<i>PERCENTFEDDEBT</i>	74.69%	14.81%	100%	9%
<i>PERCENTPELL</i>	23.16%	10.48%	78%	7%
<i>AVFEDDEBT</i>	\$ 21,955	\$ 4,780	\$ 36,613	\$ 5,152
<i>PERCENTDEBT</i>	64.98%	18.70%	94%	13%

Discussion of Results

Table 2 highlights the coefficients and p-values for each variable used in the regression.

This information is the basis for interpretations of each variable.

Table 2: Regression Results		
	Coefficients	P-value
<i>TUITION</i>	-0.090	0.270
<i>BOOKS</i>	-0.042	0.442
<i>ROOMBOARD</i>	0.433	1.90E-04***
<i>ENROLLMENT</i>	0.070	1.60E-03***
<i>PUBLIC</i>	-0.200	0.087*
<i>ASIAN</i>	-4.106	6.00E-17 ***
<i>AFAMERICAN</i>	-1.992	6.00E-05***
<i>HISPANIC</i>	0.254	0.682
<i>WHITE</i>	0.007	0.975
<i>INTERNATIONAL</i>	0.641	0.037**
<i>PERCENTFEDDEBT</i>	-0.676	2.00E-10***
<i>PERCENTPELL</i>	1.018	4.30E-05***
R Square: 0.571 N=284		Insignificance: p>0.1 *90% Confidence **95% Confidence ***99% Confidence

The model is estimated to be $\ln(\text{AVDEBT}) = 7.401 - 0.090\ln(\text{TUITION}) - 0.042\ln(\text{BOOKS}) + 0.433\ln(\text{ROOMBOARD}) + 0.07\ln(\text{ENROLLMENT}) - 0.200\text{PUBLIC} - 4.106\text{ASIAN} - 1.992\text{AFAMERICAN} + 0.254\text{HISPANIC} + 0.007\text{WHITE} + 0.641\text{INTERNATIONAL} - 0.676\text{PERCENTFEDDEBT} + 1.018\text{PERCENTPELL}$. An R Square value of 0.571 suggests that 57.1% of the data collected can be represented by this model.

During the 2011 through 2014 college academic school years in New England, both *TUITION* and *BOOKS* were found to be insignificant variables for this region. This supports Monks' (2014) claim that tuition is not a sole driver of average student debt. A 1% increase in the cost of room and board would lead to a 0.433% increase in the average debt per student. When full-time student enrollment increases by 1%, the average debt per student increases by 0.07%. Average student debt is 20% lower for students who attend public schools, in comparison

to those who attend private schools. When the percentage of Asian students increases by 1, average debt per student decreases by 4.106%. When the percentage of African American students increases by 1, average debt per student decreases by 1.99%. The percentage of Hispanic students and white students were found to have an insignificant relationship with average student debt in New England. When the percentage of international students increases by 1, average student debt increases by 0.641%. When the federal portion of a student's debt increases by 1%, average student debt decreases by 0.676%. When the percentage of Pell grant recipients increases by 1, average student debt increases by 1.018%.

Table 3 represents the average variable value for each year as well as the percentage change from 2011 to 2014. The percentage of international students attending institutions in New England increased by 26% from 2011 to 2014, and the percentage of Hispanic students increased 20%. The percentage of African American students and Asian students increased 7% and 9%, respectively, while the percentage of white students decreased by 2%. Tuition and room and board costs increased 10% during the data collection period. Across these institutions, average student debt increased 7% in the four-year span, averaging a total of \$29,008.

Table 4 highlights the state public and private averages and percentage changes for each variable. New Hampshire private institutions had the largest average student debt increase (19%) from 2011 to 2014, while Maine private institutions had the largest decrease in average student debt (-10%). Tuition and room and board costs increased the most for Connecticut public colleges, which may help explain the 2% decrease in enrollment. The percentage of Asian students increased by 20% at Massachusetts and Connecticut public colleges and decreased by 33% at New Hampshire private colleges. There was a decrease in the percentage of white students attending public and private universities for all New England states except for

Connecticut (private), Rhode Island (private) and Maine (public). The percentage of Hispanic students saw double digit increases across all states, public and private, except for public institutions in Maine.

Furthermore, Table 5 specifically highlights the totals for each state and their percentage changes. Average student debt decreased from 2011 to 2014 for each New England state, as did the cost of tuition, room and board and books. Vermont had the highest average debt decrease (44%) and Maine had the highest tuition reduction (55%). The percentage of Asian students was flat across all years. The proportion of Hispanic students and white students increased the most in New Hampshire, 125% and 60% respectively. The state of Maine had the largest increase in percentage of African American students (25%) and international students (25%). For Connecticut, Massachusetts, New Hampshire, Vermont, and Rhode Island, the percentage of student debt that is federal averaged 1.5% to 7.5% from 2011 to 2014, suggesting that the majority of students attending college in New Hampshire finance their education through private loans or other forms of funding. Roughly 81% of student debt in Maine is funded through federal loans. Maine colleges also have the lowest percentages of Pell Grant recipients in New England, averaging 32% of the student body.

Table 3: Averages and Percentage Change					
Year	2011	2012	2013	2014	% Change
AVDEBT	\$ 28,172	\$ 28,574	\$ 29,006	\$ 30,282	7%
TUITION	\$ 30,177	\$ 31,332	\$ 32,340	\$ 33,193	10%
BOOKS	\$ 1,013	\$ 1,028	\$ 1,027	\$ 1,036	2%
ROOMBOARD	\$ 11,293	\$ 11,708	\$ 12,083	\$ 12,436	10%
ENROLLMENT	5,010	5,026	5,052	5,081	1%
ASIAN	5.28%	5.31%	5.58%	5.73%	9%
AFAMERICAN	5.46%	5.56%	5.56%	5.85%	7%
HISPANIC	6.46%	7.01%	7.51%	7.79%	20%
WHITE	63.35%	62.77%	62.32%	62.18%	-2%
INTERNATIONAL	6.14%	6.82%	7.21%	7.73%	26%
PERCENTFEDDEBT	73.28%	75.69%	75.69%	74.11%	1%
PERCENTPELL	23.30%	22.79%	23.41%	23.15%	-1%

Table 4: State Averages and Percentage Changes (Public vs. Private)

Connecticut Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 23,972	\$ 8,935	\$ 1,010	\$ 10,103	63,235	5%	9%	9%	66%	2%	80%	27%
2012	\$ 25,348	\$ 9,367	\$ 1,019	\$ 10,548	61,976	5%	9%	10%	64%	2%	82%	28%
2013	\$ 24,831	\$ 10,345	\$ 1,034	\$ 11,259	61,694	5%	9%	11%	62%	2%	81%	29%
2014	\$ 28,176	\$ 10,488	\$ 1,038	\$ 11,617	61,997	6%	10%	11%	61%	2%	89%	30%
% Change	18%	17%	3%	15%	-2%	20%	11%	22%	-8%	0%	11%	11%
Connecticut Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 33,741	\$ 35,914	\$ 1,322	\$ 12,342	\$ 51,869	4%	11%	9%	54%	5%	67%	24%
2012	\$ 36,236	\$ 37,396	\$ 1,363	\$ 12,837	\$ 53,876	4%	11%	9%	56%	6%	65%	24%
2013	\$ 36,242	\$ 38,592	\$ 1,376	\$ 13,259	\$ 55,476	4%	11%	10%	56%	6%	65%	24%
2014	\$ 39,230	\$ 39,770	\$ 1,384	\$ 13,439	\$ 56,978	4%	11%	10%	56%	7%	60%	24%
% Change	16%	11%	5%	9%	10%	0%	0%	11%	4%	40%	-10%	0%
Maine Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 29,756	\$ 9,674	\$ 1,033	\$ 8,836	\$ 22,159	1%	1%	1%	77%	2%	81%	40%
2012	\$ 31,449	\$ 9,403	\$ 1,056	\$ 9,295	\$ 22,456	1%	2%	2%	78%	2%	80%	41%
2013	\$ 32,345	\$ 9,717	\$ 1,048	\$ 9,500	\$ 22,999	1%	2%	2%	78%	2%	79%	39%
2014	\$ 31,595	\$ 9,554	\$ 1,046	\$ 9,242	\$ 22,643	1%	2%	2%	77%	2%	81%	39%
% Change	6%	-1%	1%	5%	2%	0%	100%	100%	0%	0%	0%	-3%
Maine Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 28,167	\$ 32,086	\$ 983	\$ 10,613	\$ 45,334	3%	3%	3%	70%	2%	80%	26%
2012	\$ 26,281	\$ 33,782	\$ 989	\$ 11,108	\$ 47,528	3%	3%	3%	66%	2%	87%	23%
2013	\$ 27,811	\$ 34,383	\$ 974	\$ 11,405	\$ 48,428	3%	3%	3%	64%	3%	85%	25%
2014	\$ 24,608	\$ 35,535	\$ 972	\$ 11,565	\$ 49,712	3%	3%	3%	60%	3%	75%	25%
% Change	-13%	11%	-1%	9%	10%	0%	0%	0%	-14%	50%	-6%	-4%
Massachusetts Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 27,627	\$ 10,230	\$ 1,030	\$ 9,755	\$ 22,839	5%	7%	6%	67%	2%	79%	30%
2012	\$ 27,348	\$ 10,759	\$ 1,021	\$ 10,145	\$ 23,714	5%	7%	7%	66%	2%	85%	30%
2013	\$ 29,038	\$ 10,808	\$ 1,024	\$ 10,509	\$ 24,129	6%	7%	7%	65%	3%	84%	31%
2014	\$ 30,512	\$ 10,975	\$ 1,058	\$ 10,945	\$ 24,821	6%	8%	8%	64%	3%	84%	32%
% Change	10%	7%	3%	12%	9%	20%	14%	33%	-4%	50%	6%	7%
Massachusetts Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 29,093	\$ 36,263	\$ 971	\$ 12,235	\$ 51,256	8%	6%	7%	54%	10%	73%	22%
2012	\$ 29,415	\$ 37,413	\$ 997	\$ 12,662	\$ 52,982	8%	6%	8%	53%	11%	72%	22%
2013	\$ 29,668	\$ 39,010	\$ 996	\$ 13,060	\$ 55,000	8%	6%	8%	52%	11%	71%	22%
2014	\$ 32,288	\$ 40,238	\$ 1,001	\$ 13,441	\$ 56,675	8%	6%	9%	52%	12%	70%	21%
% Change	11%	11%	3%	10%	11%	0%	0%	29%	-4%	20%	-4%	-5%
New Hampshire Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 33,578	\$ 13,598	\$ 1,100	\$ 9,215	\$ 26,304	2%	1%	2%	82%	1%	72%	25%
2012	\$ 34,170	\$ 14,759	\$ 1,134	\$ 9,548	\$ 27,817	2%	1%	2%	80%	1%	73%	25%
2013	\$ 35,044	\$ 14,737	\$ 1,134	\$ 10,020	\$ 28,319	2%	1%	3%	78%	1%	73%	26%
2014	\$ 36,503	\$ 14,958	\$ 1,137	\$ 10,173	\$ 28,800	2%	1%	3%	79%	2%	71%	25%
% Change	9%	10%	3%	10%	9%	0%	0%	50%	-4%	100%	-1%	0%
New Hampshire Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 29,926	\$ 32,994	\$ 1,345	\$ 11,367	\$ 47,217	3%	3%	3%	44%	3%	65%	27%
2012	\$ 28,779	\$ 34,343	\$ 1,381	\$ 11,838	\$ 49,108	3%	4%	3%	39%	3%	63%	32%
2013	\$ 28,293	\$ 35,055	\$ 1,296	\$ 12,138	\$ 50,219	2%	6%	3%	35%	2%	64%	35%
2014	\$ 35,704	\$ 35,375	\$ 1,209	\$ 12,344	\$ 51,228	2%	8%	5%	40%	2%	66%	38%
% Change	19%	7%	-10%	9%	8%	-33%	167%	67%	-9%	-33%	2%	41%
Rhode Island Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 27,919	\$ 10,377	\$ 1,152	\$ 10,631	\$ 23,779	3%	6%	8%	68%	0%	75%	32%
2012	\$ 28,875	\$ 11,197	\$ 1,148	\$ 10,942	\$ 24,879	3%	6%	9%	67%	1%	84%	31%
2013	\$ 29,076	\$ 11,116	\$ 1,200	\$ 11,097	\$ 25,002	3%	6%	10%	66%	1%	87%	32%
2014	\$ 30,592	\$ 11,253	\$ 1,200	\$ 11,328	\$ 25,676	3%	6%	11%	66%	1%	78%	33%
% Change	10%	8%	4%	7%	8%	0%	0%	38%	-3%	#DIV/0!	4%	3%
Rhode Island Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 33,212	\$ 33,153	\$ 1,389	\$ 11,552	\$ 48,555	5%	5%	7%	59%	7%	63%	23%
2012	\$ 34,271	\$ 34,641	\$ 1,402	\$ 11,965	\$ 50,774	5%	5%	7%	59%	8%	69%	23%
2013	\$ 34,451	\$ 35,648	\$ 1,408	\$ 12,084	\$ 51,989	4%	6%	8%	60%	8%	67%	23%
2014	\$ 35,341	\$ 36,839	\$ 1,330	\$ 12,511	\$ 53,557	5%	6%	9%	60%	8%	69%	24%
% Change	6%	11%	-4%	8%	10%	0%	20%	29%	2%	14%	10%	4%
Vermont Public												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 27,272	\$ 13,056	\$ 1,129	\$ 9,257	\$ 25,146	2%	2%	3%	86%	1%	71%	27%
2012	\$ 27,886	\$ 13,528	\$ 1,130	\$ 9,619	\$ 26,018	2%	1%	3%	85%	1%	79%	28%
2013	\$ 26,987	\$ 14,006	\$ 1,133	\$ 9,977	\$ 26,629	2%	1%	3%	84%	2%	79%	22%
2014	\$ 26,890	\$ 14,583	\$ 1,149	\$ 10,342	\$ 27,567	2%	2%	4%	82%	3%	79%	25%
% Change	-1%	12%	2%	12%	10%	0%	0%	33%	-5%	200%	11%	-7%
Vermont Private												
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDEBT	PERCENTPELL
2011	\$ 29,470	\$ 33,752	\$ 1,079	\$ 10,689	\$ 47,551	3%	3%	4%	71%	4%	74%	24%
2012	\$ 25,875	\$ 35,520	\$ 1,082	\$ 11,183	\$ 49,809	3%	3%	4%	69%	4%	75%	25%
2013	\$ 31,023	\$ 37,146	\$ 1,077	\$ 11,631	\$ 51,671	3%	3%	5%	71%	4%	77%	25%
2014	\$ 30,013	\$ 37,690	\$ 1,074	\$ 12,154	\$ 52,694	3%	4%	6%	69%	5%	77%	25%
% Change	2%	12%	0%	14%	11%	0%	33%	50%	-3%	25%	4%	4%

Table 5: State Averages and Percentage Change

Connecticut													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 28,857	\$ 22,425	\$ 1,166	\$ 11,223	\$ 37,092	50%		4.5%	10%	9%	60%	3.5%	74%
2012	\$ 30,792	\$ 23,382	\$ 1,191	\$ 11,693	\$ 38,620	50%		4.5%	10%	10%	60%	4%	74%
2013	\$ 30,537	\$ 24,469	\$ 1,205	\$ 12,259	\$ 40,329	50%		4.5%	10%	11%	59%	4%	73%
2014	\$ 19,616	\$ 19,886	\$ 693	\$ 6,721	\$ 28,490	50%		5%	11%	11%	59%	4.5%	75%
% Change	-32%	-11%	-41%	-40%	-23%	0%		11%	5%	17%	-3%	29%	1%
Maine													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 20,880	\$ 1,008	\$ 9,725	\$ 33,747	\$ 26,552	2.0%		2%	2%	74%	2%	81%	33%
2012	\$ 21,593	\$ 1,023	\$ 10,202	\$ 34,992	\$ 27,050	2.0%		2.5%	2.5%	72%	2%	84%	32%
2013	\$ 22,050	\$ 1,011	\$ 10,453	\$ 35,714	\$ 26,696	2.0%		2.5%	2.5%	71%	2.5%	82%	32%
2014	\$ 17,769	\$ 487	\$ 5,784	\$ 24,857	\$ 10,216	2.0%		2.5%	2.5%	69%	2.5%	78%	32%
% Change	-15%	-52%	-41%	-26%	-62%	0%		25%	25%	-7%	25%	-3%	-3%
Massachusetts													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 28,360	\$ 23,247	\$ 1,001	\$ 10,995	\$ 37,048	50%		6.5%	6.5%	61%	6%	76%	
2012	\$ 28,382	\$ 24,086	\$ 1,009	\$ 11,404	\$ 38,348	50%		6.5%	6.5%	7.5%	60%	6.5%	79%
2013	\$ 29,353	\$ 24,909	\$ 1,010	\$ 11,785	\$ 39,565	50%		7%	6.5%	7.5%	59%	7%	78%
2014	\$ 16,145	\$ 20,120	\$ 502	\$ 6,722	\$ 28,339	50%		7%	7.0%	8.5%	58%	7.5%	77%
% Change	-43%	-13%	-50%	-39%	-24%	0%		8%	8%	31%	-4%	25%	1%
New Hampshire													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 31,752	\$ 23,296	\$ 1,223	\$ 10,291	\$ 36,761	50%		2.5%	2%	2.5%	63%	2%	69%
2012	\$ 31,475	\$ 24,551	\$ 1,258	\$ 10,693	\$ 38,463	50%		2.5%	2.5%	2.5%	60%	2%	68%
2013	\$ 31,669	\$ 24,896	\$ 1,215	\$ 11,079	\$ 39,269	50%		2%	3.5%	3%	57%	1.5%	69%
2014	\$ 17,853	\$ 17,689	\$ 606	\$ 6,173	\$ 25,615	50%		2%	4.5%	4%	60%	2%	69%
% Change	-44%	-24%	-50%	-40%	-30%	0%		-20%	125%	60%	-6%	0%	0%
Vermont													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 28,371	\$ 23,404	\$ 1,104	\$ 9,973	\$ 36,349	50%		2.5%	2.5%	3.5%	79%	2.5%	73%
2012	\$ 26,881	\$ 24,524	\$ 1,106	\$ 10,401	\$ 37,914	50%		2.5%	2%	3.5%	77%	2.5%	77%
2013	\$ 29,005	\$ 25,576	\$ 1,105	\$ 10,804	\$ 39,150	50%		2.5%	2%	4%	78%	3%	78%
2014	\$ 15,008	\$ 18,846	\$ 538	\$ 6,078	\$ 26,348	50%		2.5%	3%	5%	76%	4%	78%
% Change	-47%	-19%	-51%	-39%	-28%	0%		0%	20%	43%	-4%	60%	8%
Rhode Island													
Year	AVDEBT	TUITION	BOOKS	ROOMBOARD	ENROLLMENT	ASIAN	AFAMERICAN	HISPANIC	WHITE	INTERNATIONAL	PERCENTFEDDEBT	PERCENTPELL	
2011	\$ 30,566	\$ 21,765	\$ 1,271	\$ 11,092	\$ 36,167	50%		4%	5.5%	7.5%	64%	3.5%	69%
2012	\$ 31,573	\$ 22,919	\$ 1,275	\$ 11,454	\$ 37,827	50%		4%	5.5%	8%	63%	4.5%	77%
2013	\$ 31,764	\$ 23,382	\$ 1,304	\$ 11,591	\$ 38,496	50%		3.5%	6%	9%	63%	4.5%	77%
2014	\$ 17,672	\$ 18,421	\$ 666	\$ 6,257	\$ 26,780	50%		4%	6%	10%	63%	4.5%	74%
% Change	-42%	-15%	-48%	-44%	-26%	0%		0%	9%	33%	-1%	29%	7%

Conclusion

From 2011 through 2014, average student debt increased 7% across New England. Based on the model, average student debt during that time period was expected to increase as the costs of room and board, the number of undergraduate enrollment, the percentage of international students, and the percentage of Pell Grant recipients increased. Average student debt was expected to decrease as the percentage of Asian and African American students increased, in addition to an increase in the percentage of student debt that came from federal loans.

This research only begins to scratch the surface on determinants of student debt in the New England region. In order to have more accurate results, a similar dataset would be needed that consists of all institutions in the region. This dataset had to remove many schools due to

missing variable issues. Future research could focus on year to year changes in average debt determinants, to see if there are common trends. As the student debt crisis continues, highlighted common trends could provide opportunity for institutions and governments to address and alleviate the large burden that students are taking on when financing their college education.

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