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Debt Profiles of Model Students: The Projected Debt of Highly Productive Students and Its Economic Impact

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By Mark E. Fincher

A common misperception suggests that a high-achieving student can easily complete a degree with very limited debt, and that students with high levels of debt are thus underachievers. This assumption is supported by memories of previous decades when it was realistically possible for most students to work their way through college. This view, however, ignores the current financial realities faced by students with limited family support. The financial experience and circumstances of current, high-performing students is markedly different from similarly dedicated students in the past. Current students are now more likely to graduate with high debt burdens that negatively impact their ability to contribute to the economy and society. This paper examines and describes the likely debt burdens now being incurred by highly productive students in common financial circumstances and projects the likely economic and societal impact of this debt. Using national data sources and theoretical perspectives based in the fields of cost accounting and economics, this study finds that students who enroll with a clear community college-to-university path are more likely to graduate with lower debt levels. More rapid program completion likewise reduces debt levels. In addition, parental support at half of the cost of attendance reduces debt more than a full Federal Pell Grant. The results point to recommendations to policymakers at the federal, state, and institutional level to focus on providing for efficient transfer between schools, encouraging timing program completion, limiting developmental education requirements, and targeting sufficient funding to public institutions to produce optimal college prices.

Keywords: *student debt, economic impact, degree completion, funding*

Many stories are told of people who worked their way through college in the 1970's and 1980's. These stories seldom include the incurring of substantial debt. In contrast, other stories are commonly told about current students who run up debts in excess of $100,000 through extravagant living while making little progress toward a degree with limited value. These scenarios (Garner, 2016; Daniels, 2015), however, fail to represent the vast majority of the current student body. Many of those who incur substantial student debt are highly productive from a societal standpoint, in that they work efficiently through a program of study and graduate without the costly detours of changing majors, retaking courses, taking low course loads, and extending their time to graduation. Despite their substantial debt, these students are essentially doing what society hopes all students will do: they are pursuing and completing postsecondary education in an expeditious manner, which allows them to provide the maximum benefit for society after graduation.

Throughout the history of higher education in the U.S., many students have been highly productive while making an efficient use of resources. The results of this sort of driven and successful behavior have, however, changed in recent decades. The financial experience and circumstances of current, high-performing students is markedly different from dedicated students in the past and from the tales of directionless students we often hear of in the media.

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The purpose of this paper is to examine and describe the likely debt burdens being incurred by highly productive students in common financial circumstances. The theoretical perspective of this paper is drawn from the fields of cost accounting and economics. This paper paints a realistic picture of the financial circumstances of highly productive students and describes the societal and economic impact of current conditions on these students.

Background

The cost of college attendance in North America has had an important impact on higher education access since before the establishment of the United States. Starting with the colonial period, the cost of pursuing a college education was prohibitive for most people. From this time until the latter portion of the 1800s, most accepted this situation because a collegiate education was only considered to be vital for a small portion of the wealthier members of society (Owens, 2011). In the early days of higher education in the United States, beyond prospective clergymen, only some of the academically talented and well-prepared sons of wealthy families were expected to go to college. Society expected these young men to be the future leaders of the country and did not consider a collegiate education necessary or even advantageous for other careers (Geiger, 2014). The access restrictions imposed by the prohibitive cost of postsecondary education were considered to be appropriate. In this era, it was debatable whether the federal government even had the right to influence the provision of higher education in the United States (ASHE Higher Education Report, 2013).

In the 1800s, it became evident that a much larger portion of the country's population would benefit from education beyond high school. The creation and expansion of the land grant college movement (Trow, 1993; Thelin, 2004), plus the creation of colleges targeted toward underserved populations (Geiger, 2014), expanded access beyond the White male elite and in support of professions. These institutions further established the value of access to higher education.

The 20th century saw a historic expansion in higher education access in the United States. The establishment of Joliet Junior College in 1901(Vaughan, 2006) led to the growth of the community college movement (Cohen & Brawer, 2008). This movement was dedicated to increasing access to higher education opportunities and increasing support of professions, along with the economic growth that these professions would enhance. Society began to embrace the concept of supporting higher education access and encouraging attendance in the interest of economic productivity.

The higher education aspects of the legislation that made up the 1944 G.I. Bill of Rights produced a massive influx (Bound & Turner, 2002) of students from backgrounds that previously would have not been considered appropriate for college (Trow, 1993). While unorthodox (Conant, 1945: Hutchins, 1944), this program was wildly productive and provided an impetus for further societal investment to boost higher education attainment. This way of thinking facilitated the passage of the National Defense Education Act of 1958 with the intention of increasing the production of graduates in militarily critical fields (Gladieux, King, & Corrigan, 2005).

The Higher Education Act of 1965, which aimed to produce greater higher education access and graduation across all fields of study (Altbach, Berdahl, & Gumport, 2005), was also driven by the idea that the federal, state, and local governments could and should promote higher education attainment for the betterment of society as a whole. The 1970s saw a maximization of societal support for higher education access with high state and local financial support for institutions and the highest level of federal support for financially disadvantaged students through what would later become the Federal Pell Grant (Kennamer, Katsinas, Hardy & Roessler, 2010).

In the 1980s, the idea that society should work to draw as many people into higher education as possible began to decline. Higher education funding, particularly on the state level, began to diminish in terms of the portion of costs paid for by state and local governments (Gladieux, King, & Corrigan, 2005).

The 1990s saw substantial erosion of state higher education funding (College Board, 2002) and the embrace of an alternative philosophy. It became increasingly popular to think that the value of a higher education primarily accrued to the person who received it (Fatima & Paulsen, 2004). Where in the past it had been widely perceived that society was the primary beneficiary of a well-educated populace, in this era many began to view the value of education as the increased future earnings that would benefit student. Consequently, society rapidly began shifting the cost burden of pursuing an advanced education to the recipient, who was perceived as getting all of the benefit.

The years 2000 to 2013 saw a sharp acceleration in shifting the costs of higher education from the states to individual students (Hefling, 2014; U.S. Department of Education, 2011). Prices for tuition and fees rose much faster than inflation (College Board. 2011; Scholarship America, 2004) as did average student debt levels (Baum & Payea, 2004). The accelerated change in tuition prices came as the idea of the responsibility shifting toward students and their parents became widely accepted. This lowered expectation of state responsibility did not produce a corresponding expectation that parents should provide more (Christie, Munro, & Retig, 2001; Mian & Sufi, 2010). Instead, this change greatly increased the use of individual student debt to finance higher education. It also brought about a greater interest in measuring student debt levels. The level of financial commitment needed to pursue higher education has even begun to negatively influence the number of people who are choosing to pursue education beyond high school (Fincher & Katsinas, 2017). Debt had been part of the higher education funding model as far back as the 1960s, but by the 2000s it had risen to a previously unseen level of prominence.

Projecting Debt Levels of Individual Students

Many attempts have been made to determine the level of debt that students acquire prior to graduation. This is challenging because records of individual debt are private and maintained by a variety of agencies. Large surveys of students or institutions have been made to determine an average debt level across a statewide or national student body (*U.S. News and World Report* Survey, 2014; Peterson's College Data, 2014). Some of these, such as the annual survey performed by The Institute for College Access and Success (TICAS), produce an average debt level for students who have attended and graduated from a single institution without transferring or incurring debt at another institution (TICAS, 2014b). Sixty-nine percent of the students in the 2014 TICAS survey graduated with debt, and the average debt level among the students with debt was $28,950 (TICAS, 2014b). This, and other studies (Krankowitz, 2016), provide a powerful indication of the increasing debt burden across all students, with the TICAS survey showing that average student debt had risen at more than double the rate of inflation during the last 10 years (TICAS, 2014b). However, little has been done to determine the actual debt burdens of individual students or to measure the totality of the debt problems individual students experience, as surveys based on institutional performance do not include debts incurred at other institutions before graduation.

Much has been said and written about the rising average debt level among college graduates (Ferro, 2016; Clements, 2016). There are also many stories of students running up enormous debts through wasteful spending (Rathmanner, 2017). What has not been explored is what level of debt should be expected for students with common financial situations and the likely impact of that debt. Recognizing that students have too much debt is important. However, to fully understand the problem it is necessary to create a model to project and understand the expected debt amount that will be incurred by model students in likely financial situations and how this debt will impact their future activities.

Method

I performed this study from a perspective of cost accounting and consumer economics. Rather than perform statistical analyses of what has been done with the very limited available data on student debt, this study determines what debt levels certain model students are likely to incur based on cost and income projections, for which excellent data are available. The term *model student* is descriptive in this study in two ways, as the students are pursuing degrees in an efficient and preferred manner, and they are represented by model profiles. For simplicity, I assumed the model students to be attending full time and to be of traditional college age. Consequently, the different model students generated in this study represent common conditions that exist for many members of the student body, but do not fully represent the student body. While the model students in this study are by no means all-inclusive, they represent very common conditions experienced by many traditional students.

I generated profiles for the model students for four different conditions of financial support: 1) students eligible for a maximum Pell Grant and receive half of the cost of attendance from their family; 2) students who are eligible for maximum Pell Grant but receive no support from their family; 3) students who do not qualify for Pell Grants but receive half of their cost of attendance paid by their family; and, 4) students who receive no support from their family or from the Pell Grant program. Each of these profiles includes options of pursuing an associate's degree in two or three years. Each profile also includes options of attending a university for four or five years. Additionally, each profile includes an example for the primary ways students generally combine years in community colleges and years in universities to pursue a baccalaureate degree. These combinations include 2+2, 3+2, and 2+3 configurations.

Because the standard cost of college attendance calculations do not include some costs, such as summer living expenses, student work is needed to cover some of the expected expenses involved in attendance. For each model student, I assumed a 20-hour per week federal minimum wage job that can be increased to a 40-hour per week federal minimum wage job during the summer. The average annual take-home pay for such a job is approximately $8,500. (SalaryCalculator.org). This is not a precise figure due to the sharp divergence of local tax laws and varying state minimum wage levels. While additional earnings from work would further limit the incursion of debt, this is not a practical possibility for most traditional students and is not included in this model. I assumed in this study that students' part-time work earnings would be roughly equal to the living expenses not included in the total cost of attendance calculations, such as summer room and board (see Table 1).

Table 1

Major Data Points Used in Current Study

Average annual community college total cost of attendance	$16,325
Average annual university total cost of attendance	$23,410
Annual maximum Pell Grant (2016-17)	$5,815
Part-time job projected annual maximum after-taxes pay	$8,500
National average annual tuition, fees, room & board at public institutions	$15,022

Note:
Based on data from College Board, 2014; U.S. Department of Education Office of Federal Student Aid, 2016**;** U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015; SalaryCalculator, 2016.

Data

I developed the profiles of model students by drawing average national data from published data sources (The College Board, 2014; Federal Student Aid, 2016**;** Department of Labor, 2016; National Center for Educational Statistics, 2015; U.S. Department of Education, 2015; SalaryCalculator, 2016). I then combined these averages to reflect the differing model students and various attendance plans. I used the maximum Pell Grant in effect in 2016-17.

Results

The following tables describe the results of this study. Each table represents each of the four model student types in different enrollment plans, and each dollar amount represents a likely amount of debt to be incurred through a particular enrollment plan for a model student with a given financial situation. Table 2 shows the projected debt of the model students pursuing a degree at a community college. This calculation uses the national community college average cost of attendance for 2014 and assumes two semesters of enrollment per year. It is noteworthy that only the model student category with both half parental support and a maximum Pell Grant can produce an associate degree while incurring less than $15,000 in debt.

Table 3 shows the four model students pursuing a baccalaureate degree at a public university. I used national averages of cost of attendance for 2014 for public universities in these calculations. The amounts represent the projected debt to be incurred by the different model students over a four- or five-year attendance plan. Interestingly, students without parental support have debts exceeding $70,000, regardless of whether they receive a Pell Grant.

Table 4 combines the data generated in Tables 2 and 3 into combination plans, where the model student first attends a public community college and then transfers to a public university to complete a baccalaureate degree. The public community college portion of the plan reflects the national average cost of attendance for public community colleges; the university portion of the plan reflects the national average cost of attendance for public universities. I used the different options of 2 + 2, 3 + 2, and 2 + 3 to represent differing levels of transfer efficiency between the two chosen institutions, with the 2 + 2 expected to be the most efficient by definition. It should be noted that students who take a total of five years to complete a four-year degree due to taking additional classes that are not included in the baccalaureate incur substantially lower costs by attending a community college for two years and a university for three years than those who pursue a 2 + 3 plan with the third year being at a university.

Table 5 compares the total debt projected to be incurred in the pursuit of a baccalaureate degree by each of the four model students through each of the attendance plans in the study. This allows for a direct comparison of projected debt burdens associated with the different scenarios represented in the study. The 2 + 2 attendance plan is superior to all plans in terms of limiting debt. Table 5 also shows that for a student who receives no grant aid or parental support the projected debt burden is almost $80,000.

Table 2

Projected Debt Incurred by Differing Financial Situations and Attendance Plans: Public Community College National Averages

Student financial situation	2 years of attendance	3 years of attendance
Full Pell Grant, with half parental support $8,162.50 - $5,815 = $2,347.50 per year in costs covered by the student	$4,695	$7,042.50
Full Pell Grant, without parental support $16,325 - $5,815 = $10,510 per year in costs covered by the student	$21,020	$31,530
No Pell Grant, with half parental support $8,162.50 = $8,162.50 in costs covered by the student	$16,325	$24,487.50
No Pell Grant, without parental support $16,325 = $16,325 in costs covered by the student	$32,650	$48,975

Note:
Average annual cost of public community college attendance = $16,325
Half of average annual cost of public community college attendance = $8,162.50
Maximum Pell Grant per year = $5,815

Based on data from College Board, 2014; Federal Student Aid, 2016; U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015.

Table 3

Projected Debt Incurred by Differing Financial Situations and Attendance Plans: University National Averages

Student financial situation	4 years of attendance	5 years of attendance
Full Pell Grant, with half parental support $11,705 - $5,815 = $5,890 per year in costs covered by the student	$23,560	$29,450
Full Pell Grant, without parental support $23,410 - $5,815 = $17,595 per year in costs covered by the student	$70,380	$87,975
No Pell Grant, with half parental support $11,705 = $11,705 per year in costs covered by the student	$46,820	$58,525
No Pell Grant, without parental support $23,410 = $23,410 per year in costs covered by the student	$93,640	$117,050

Note:
Average annual cost of attendance = $23,410
Half of average annual cost of attendance = $11,705
Maximum Pell Grant per year = $5,815

Based on data from College Board, 2014; Federal Student Aid, 2016; U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015.

Table 4

Projected Debt Incurred by Differing Financial Situations and Attendance Plans: Combination of Public Community College and University Attendance

Student financial situation	2 + 2	3 + 2	2 + 3
Full Pell Grant, with half parental support	$16,475	$18,822.50	$22,365
Full Pell Grant, without parental support	$56,210	$66,540	$73,805
No Pell Grant, with half parental support	$39,735	$47,897.50	$51,440
No Pell Grant, without parental support	$79,470	$95,795	$102,880

Note:
Average annual cost of public community college attendance = $16,325
Half of average annual cost of public community college attendance = $8,162.50
Average public university annual cost of attendance = $23,410
Half of average public university annual cost of attendance = $11,705
Maximum Pell Grant per year = $5,815

2 + 2 represents a two-year course of study at a community college that is combined with a two-year course of study at a university with no functional loss of credit during transfer that ultimately ends in a baccalaureate degree.

3 + 2 represents an extensive course of study allowing for developmental courses and major changes at a community college that is combined with a two-year course of study at a university with no functional loss of credit during transfer that ultimately ends in a baccalaureate degree.

2 + 3 represents a two-year course of study at a community college that is combined with a three-year course of study at a university that accommodates functional loss of credit during transfer that ultimately ends in a baccalaureate degree.

Based on data from College Board, 2014; Federal Student Aid, 2016; U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015

Table 5

Comparison of Different Attendance Approaches to Pursuing a Baccalaureate Degree; Projected Debt Incurred by Differing Financial Situations and Attendance Plans

Student financial situation	2 + 2	3 + 2	2+3	University 4	University 5
Pell Grant, with half support	$16,475	$18,822	$22,365	$23,560	$29,450
Pell Grant, without support	$56,210	$66,540	$73,805	$70,380	$87,975
No Pell Grant, with half support	$39,735	$47,897.50	$51,440	$46,820	$58,525
No Pell Grant, without support	$79,470	$95,795	$102,880	$92,640	$117,050

Note:
Average annual cost of public community college attendance = $16,325
Half of average annual cost of public community college attendance = $8,162.50
Average public university annual cost of attendance = $23,410
Half of average public university annual cost of attendance = $11,705
Maximum Pell Grant per year = $5,815

2 + 2 represents a two-year course of study at a community college that is combined with a two-year course of study at a university with no functional loss of credit during transfer that ultimately ends in a baccalaureate degree.

3 + 2 represents an extensive course of study allowing for developmental courses and major changes at a community college that is combined with a two-year course of study at a university with no functional loss of credit during transfer thatultimately ends in a baccalaureate degree.

2 + 3 represents a two-year course of study at a community college that is combined with a three-year course of study at a university that accommodates functional loss of credit during transfer that ultimately ends in a baccalaureate degree.

Based on data from College Board, 2014; Federal Student Aid, 2016; U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015.

Economic Impact of High Debt Burdens

One might expect high-performing students to immediately become high-performing members of society. However, high debt burden can profoundly influence a number of the significant steps needed to assume this desired role. Home purchase (Mayotte, 2016), career-related move, marriage, entry-level job selection (Lanza, 2016), and the choice of a career field that is greatly needed by society but lacks a high salary (Mishory & Knoll, 2016) are all important steps that can be delayed or rendered unworkable by high debt levels. It is unreasonable to expect that people who lacked the financial wherewithal to pay for their education without incurring substantial debt could fund the next step in their lives without incurring additional debt (Swarthout, 2006).

To better show the impact of high debt burden on new graduates, it is helpful to look at average indebtedness of graduates of two critical fields: education and mechanical engineering. These fields are both generally considered highly valuable to society; however, based on the current study's results, new graduates in those fields who leave school with high debt levels would be expected to forgo actions that might otherwise positively impact the economy and society as a whole. While these two professions are not representative of all fields that require advanced education, they are both considered to be in high demand by U.S. society and they are taught throughout the country. Engineering and education also benefit as examples from an abundance of previous research.

This example will look at the possible purchase of a home. The ability to secure a home loan is powerfully influenced by the debt burden of the borrower. The standard home loan that allows the highest allowable debt burdens relative to monthly income, as well as advantages such as low down-payments, is a Federal Home Administration (FHA) loan. As of this writing, borrowers seeking FHA loans could use up to a maximum of 29% of their monthly income to repay the home loan, and up to 41% of their monthly income to cover other home expenses and long-term debt. Consequently, a student loan debt burden requiring payments equal to, for example, 12% of the borrower's earnings, even without the presence of any other debt, could eliminate a new graduate from consideration for a standard home loan. Because of this impact, I chose the 12% of earnings required payment level to represent the student loan debt level that would produce a decidedly negative impact on society and the economy.

Public school teacher debt. The average annual salary for a first-year public school teacher in the United States is $36,141, or $3,011.75 per month (Payscale, 2015). A student loan payment of $361.41 per month represents the FHA limit of 12% of a $3,011.75 monthly salary. Any monthly repayment amount above that figure would severely diminish the new graduate's ability to qualify for a home loan or take on any other worthwhile task that might require financial flexibility. In terms of making payments under a standard student loan repayment plan, a $361.41 monthly payment is roughly equivalent to servicing a total student debt of $36,000 with a 4.3% interest rate (Repayment Estimator, 2016). The total payment for a debt of this level may be even greater if the borrower used higher cost private loans in addition to lower cost federal loans. (TICAS, 2014a). While this allows for a substantial amount of student debt, it is far less than many students incur (see Table 6).

Mechanical engineer debt. A newly graduated mechanical engineer can expect to earn substantially more than a first-year public school teacher. The average first-year mechanical engineer earns $61,523 per year, or $5,126.91 per month (Payscale, 2015). At 12% of salary, the monthly payment would be $615.23 per month; a monthly debt service amount above that figure would severely diminish the new mechanical engineer's ability to qualify for a home loan. With a standard student loan repayment plan, this is just under the monthly payment for a total student debt of $60,000 with a 4.3% interest rate (Repayment Estimator, 2016). Once again, a debt burden that includes higher-cost private loans in addition to lower-cost federal loans may have even higher monthly payments (TICAS, 2014a). As with the public school teacher, this is a substantial amount of student debt, but it is still less than the debt many high-performing students incur (see Table 6).

Table 6

Sample Student Debt Impact

Career field	First-year salary	Monthly salary	12% payment	Practical debt limit
Teacher education	$36,141	$3,011.75	$361.41	$36,000
Mechanical engineer	$61,523	$5,126.91	$615.23	$60,000

Note:
Based on data from Payscale (2016).

Findings

An examination of the data reveals important information about student debt and enrollment decisions that could increase or reduce debt for an individual student. These may be especially useful to institutions, policymakers, and prospective students.

Debt Levels Under Differing Attendance Approaches

Table 7 provides an opportunity to examine and compare debt levels based on different enrollment plans, including 2 + 2, 3 + 2, 2 + 3, 4-year university, and 5-year university plans.

2 + 2 plans. A true 2 + 2 plan is substantially less expensive than any other path to a baccalaureate degree. Depending on which model financial situation the student is in, the savings of a 2 + 2 plan in comparison to a four-year university plan is projected to be between $7,000 and more than $14,000. Students who must pay for the majority of their education without federal grant or parental support and have the opportunity to pursue a 2 + 2 plan should consider doing so. Policymakers should also recognize the tremendous value that is provided by a 2 + 2 program and promote their creation accordingly. Every course that is taken at a community college that effectively replaces a university course on the appropriate baccalaureate degree plan saves money and therefore reduces debt.

Table 7

Projected Debt Incurred by Differing Financial Situations and Attendance Plans for Pursuing a Baccalaureate Degree

Student financial situation	2 + 2	3 + 2	2+3	University 4	University 5
Pell Grant, with half parental support	$16,475	$18,822	$22,365	$23,560	$29,450
Pell Grant, without parental support	$56,210	$66,540	$73,805	$70,380	$87,975
No Pell Grant, with half parental support	$39,735	$47,897.50	$51,440	$46,820	$58,525
No Pell Grant, without parental support	$79,470	$95,795	$102,880	$92,640	$117,050

Note:
Based on data from College Board, 2014; Federal Student Aid, 2016; U.S. Department of Labor, 2016; U.S. Department of Education National Center for Educational Statistics, 2015; U.S. Department of Education, 2015.

3 + 2 plans compared to five-year university study. Completing an additional years' worth of study at the community college level under a 3 + 2 plan is projected to require substantially less debt than a five-year university plan across all student financial situations, as seen in Table 7. The difference could be as much as $22,000 with an average cost of attendance. If a student needs more than four years of education to achieve a four-year degree, taking the additional classes at a community college can substantially reduce the debt that the student incurs.

3 + 2 plans relative to 2 + 3 plans. A 3 + 2 plan is likely to incur substantially less debt than a 2 + 3 plan, according to these findings. Table 7 shows that transferring to a university from a community college prior to having completed half of the degree at the time of transferring is an expensive proposition. Notice that the decision is not how many hours have been completed, but instead how many hours remain on the final baccalaureate degree plan. Avoiding this move can substantially lower the amount of debt that a student will incur. Many transfers that occur without an advanced transfer relationship between the institutions function like a 2 + 3 arrangement. Unfortunately, they can even behave like *de facto* 3 + 3 plans when students end up taking additional coursework to make up for credits that did not transfer or apply to the new program. This shows the importance of schools making 2 + 2 agreements readily available and keeping students well informed of these options, as well as the value to students of researching the availability of such agreements.

Four-year university plans compared to 2 + 3 plans. In most cases, a four-year university plan incurs substantially less debt than a 2 + 3 plan, as shown in Table 7. In the current environment of high tuition and comparatively low and scarce federal grants, the addition of extra courses at the university should be aggressively and proactively avoided if the goal is to limit debt. The 2 + 3 plan eliminates the cost reduction value of attending a community college for these model students. This is an important finding, as it demonstrates the negative financial impact of a third year at a university. Adding an extra year at the university level erodes or eliminates the expected financial advantage of combining community college with university attendance. Consequently, it is critical that institutions wishing to promote transfer and limit student debt create agreements and pathways that allow for the realistic completion of a four-year degree after two years at the university. Higher education policymakers with a goal of reducing student debt should pay great attention to efficient university transfer opportunities and agreements. Similarly, community college leaders should see creating 2 + 2 and 3 + 2 agreements as a way of enhancing and maintaining the financial value of a transfer-oriented community college education.

Time to graduation. Speed matters. Looking back at Table 7, it is clear that completing a degree in four years rather than five creates a substantially lower debt level in each of these financial situations. Not surprisingly, the projected costs for students who extend their study to a fifth year are significantly higher than for those who complete after four years. In addition, studying for a fifth year delays the student's entry into the labor market at an increased earning level, as well as delaying repayment, which is likely to increase the level of debt

Debt Under Differing Levels of Parental Support

Parental financial support is an important factor in the amount of debt a student incurs for higher education. In the current environment of relatively high tuition and low Pell Grant awards, even parental support to the somewhat modest level of half the cost of attendance is substantially more helpful in limiting debt than a maximum Pell Grant. As previously shown in Tables 2 & 3, parents paying for half of the cost of attendance are reducing the projected debt burden twice as much as the receipt of a maximum Pell Grant. This finding speaks to both the value of parental support and the limited sufficiency of current federal grants for eliminating student debt. High tuition costs and limited grants create a situation where those students who do not have parents that are either willing or able to pay for half of their higher

education costs are likely to incur substantial debt, even in the efficient and industrious pursuit of a baccalaureate degree. Higher education leaders and policymakers should give this relationship serious attention if they wish to reduce student debt levels.

Impact of Debt

The economic impact of student debt is not linear. One more dollar of expense leads to one more dollar of student debt. However, one more dollar of student debt does not simply produce a one dollar reduction in the positive economic impact made by an additional citizen with a degree. Debt that is taken on to reduce expenses or gain an appreciating asset, such as a home purchase, or that produces a revenue generating or enhancing activity, such as capital investments or a college education, can be very productive. That productivity, however, is sharply diminished or eliminated if the incurred debt is unmanageable and prohibits the pursuit of productive activities. Excessive debt greatly reduces or eliminates the economic and societal value of the production of an associates or baccalaureate degree. Exceeding a workable debt load for the degree attained creates a precipitous drop in the productivity that was potentially gained by the provision of educational access.

Lack of Resources Increases the Risk of High Debt Burden

Students who lack substantial scholarships, or familial support will incur problematic debt burdens, according to the findings in this study. For the model students described in this study, the lowest projected debt level for a baccalaureate degree is more than $56,000. The precise debt level incurred by students will vary based on local employment conditions, local costs, state funding policies, and students' the ability to economize. This small variation, however, occurs within a very large total cost. A national average of $15, 022 for public institution tuition, fees, and room & board alone, without consideration of summer room and board, books, transportation, and additional living expenses, greatly limits the ability of students to economize to the point that a less burdensome debt is produced. This high level of core costs guarantees a substantial debt burden for students who do not receive an abundance of help toward paying for their education.

Recommendations for Future Study

While this study may provide an accurate description of the likely debt consequences of a number of common model students, it only loosely represents some other students. For example, non-traditional students may incur debt differently than traditional students with a similar plan to pursue higher education. Working adult students, for example, may incur debt at a lower rate due to superior earning ability if they are able to do so without relocating (Williams, 2014; Guillory & Wolverton, 2008) or changing jobs (Vandelas, 2013). Conversely, working adults who must move to pursue an advanced education, but is unlikely to live in a dormitory setting, may incur additional debt through substantial moving expenses (Williams, 2014), lost wages, (Vandelas, 2013), and the loss of social networks and family support (Guillory & Wolverton, 2008). Further examination of the issue of higher education costs for independent students could be beneficial to understanding enrollment and borrowing decisions made by these consumers.

Future studies should consider generating precise calculations of optimal debt ceilings. This study uses national averages and common economic situations for students, and only provides benchmark degree field examples to demonstrate the ability to repay student loan debt. However, each state has different levels of higher education funding, each locality has different economic conditions, and graduates from various academic programs differ widely in their ability to repay. States have the ability to strongly influence their economic competitiveness through policies for the provision of higher education access (Fincher, 2007).

State-specific priorities and conditions can be used to build a precise model designed to produce results that can determine optimal state policies to achieve state goals. Such a model could be used to arrive at precise and effective policy recommendations on a state-by-state basis.

Conclusions

Higher education provides a tremendous value for both individual students and society as a whole. This is particularly true for high-performing students who arrive at college well prepared and who pursue their educations efficiently without wavering from their goal. The cost of postsecondary education has, in recent years, been largely shifted to the individual student. The level of out-of-pocket expense required of college and university students in the United States has changed markedly since its low-point in the 1970's, when many students could attend college while incurring little or no debt. At that time, students' primary investments in the pursuit of higher education were their time, dedication, and effort. That is no longer the case. Now, students are widely expected to pay for the majority of their higher education costs. This has resulted in certain segments of the student body incurring excessive levels of debt prior to graduation. The consumer dynamics of choosing to pursue postsecondary education and graduates' economic conditions after completing the educational process have clearly changed.

Federal, state, and institutional policymakers can facilitate a more productive public higher education experience by creating a system where students incur more modest debt levels. This can be achieved through a combination of specific efforts, including providing for efficient transfer between schools, encouraging timely program completion, and limiting developmental education requirements. Attention needs to be given to targeting sufficient federal, state, and local funding to public institutions to produce optimal tuition and fee prices. Each legislative, governing, and higher education body should consider means of reducing student debt as they budget, create policies, and develop immediate and long-range plans.

Nexus: Connecting Research to Practice

- Policymakers should be aware of the actual debt-levels that are being incurred by motivated and academically successful students. Crippling debt levels are not only experienced by wayward students, but by successful students as well.
- Administrators should understand that the cost of higher education profoundly impacts the welfare of graduates. Higher education is a worthwhile investment of time, effort, and debt. Increased prices have a great and negative impact on that value. It cannot be assumed that prices can be continually raised without it impacting enrollment, graduation, and ability of these graduates to be fully functional in modern society.

References

Altbach, P. Berdahl, R., & Gumport, P. (2005). American higher education in the twenty-first century: Social, political, and economic challenges. Baltimore, MD: The Johns Hopkins University Press.

ASHE Higher Education Report (2013). Historical context of institutional diversity. *39*(3), 17-35.

Baum, S., & Payea, K. (2004). *Trends in student aid.* Washington, D.C.: The College Board.

Bound, J., & Turner, S. (2002). Going to war and going to college: Did World War II and the G.I. Bill increase educational attainment for returning veterans? *Journal of Labor Economics,* 20(4). 784-815.

Christie, H., Munro, M., & Rettig, H. (2001). Making ends meet: Student incomes and debt. *Studies in Higher Education, 26*(3), 363-383.

Clements, N. (2016). The real student loan crisis: Debt-fueled tuition inflation. *Forbes, 01/08/2016. Retrieved fromhttps://www.forbes.com/sites/nickclements/2016/08/08/the-real-student-loan-crisis-debt-fueled-tuition-inlation/#61506c5d6824*

Cohen, A. M., & Brawer, F. B. (2008). *The American community college.* San Francisco, CA: Jossey-Bass.

College Board. (2002). *Trends in student aid.* Washington, D.C.

College Board. (2011). *Trends in college pricing.* Washington, D.C.

College Board. (2014). *Trends in college pricing 2014*. Washington, D.C.

Conant, J. (1945). Annual report of the president of the university. *Harvard Alumni Bulletin, 47*(1), 286.

Daniels, A. (2015). My six-figure student debt nightmare. *Black Enterprise, 12/22/2015. Retrieved from blackenterprise.com/money/my-six-figure-student-debt-nightmare.*

Fatima, N., & Paulsen, M. (2004). Higher education and state workforce productivity in the 1990s. *The NEA Higher Education Journal, 2,* 75-94.

Ferro, S. (2016). Why Millennials are shut out of the American dream: Buying a house isn't as easy as it used to be. *Huffington Post,* 02/12/2016. Retrieved from http://huffingtonpost.com/entry/another-reminder-that-millennials-will-probably-die_poor_us

Federal Student Aid. (2016). Pell Grant maximum for 2016–17 announced. Retrieved from https://studentaid.ed.gov/sa/about/announcements/pell-2016-17

Fincher, M. (2007). Governments as human capital providers: A rationale for strong government support of broad higher education access. *Competitiveness Review, 17*(1/2), 67-76.

Garner, S. (2016). Betrayed by the dream factory. *Slate,* 1/26/2016.

Geiger, R. (2014). *The history of American higher education: Learning and culture from the founding to World War II.* Princeton, NJ: Princeton University Press.

Gladieux, L., King, J., & Corrigan, M. (2005). The federal government and higher education. In P. Altbach, O. Berdahl, & P. Gumport (Eds.), *American Higher Education in the Twenty-First Century*. Baltimore, MD.: The Johns Hopkins University Press.

Hefling, K. (2014, Nov.). The cost of a college education continues to creep higher. *Daily Finance*.

Hutchins, R. (1944, Dec. 30). The threat to American education. *Collier's,* 114.

Kennamer, M., Katsinas, S., Hardy, D., & Roessler, B. (2010). Closing doors of opportunity? Trends in enrollment, college costs, and direct grant aid at community colleges in the United States, 2000-2001 to 2005-2006. *Community College Journal of Research and Practice*, *34*, 7-24.

Lanza, A. (2016, Jan. 20). Study: Student loan borrowers delaying other life decisions. *U.S. News & World Report*.

Mayotte,B. (2016, Feb. 3). Student loans may affect mortgage eligibility. *U.S. News & World Report*.

Mian, A., & Sufi, A. (2010). Household leverage and the recession of 2007 to 2009. *IMF Economic Review, 58*(1), 74–117.

Mishory, J., & Knoll, C. (2016, Mar. 1). We're holding millennials back. *U.S. News & World Report*.

National Center for Educational Statistics. (2015). Graduation rates for selected cohorts, 2006- 11; Student Financial Aid, Academic Year 2013-2014; and Admissions in Postsecondary Institutions, Fall 2014, First Look (Provisional Data). NIES. Washington, DC.

Owens, J. (2011). Enlightenment and education in eighteenth-century America: A platform for further study in higher education and the colonial shift. *Educational Studies, 47*(1), 527-541.

Payscale (2016). *Salary Reports*. Retrieved from http://www.payscale.com/mypayscale.aspxPeterson's College Data. (2014). *Peterson's undergraduate financial aid and undergraduate databases*. Lawerenceville, NJ. Peterson's.

Peterson's College Data. (2014). *Peterson's undergraduate financial aid and undergraduate databases*. Lawerenceville, NJ. Peterson's.

Rathmanner, D. (2017). Parents & student debt survey and report, 2017. *Lendedu.* Retrieved from http://lendedu.com/blog/parent-student-loan-debt-survey

Repayment Estimator (2016). Student Loans.gov, Not surprisingly, the projected costs for students who extend their study to a fifth year are significantly higher than for those who complete after four years. In addition, studying for a fifth year delays the student's entry into the labor market at an increased earning level, as well as delaying repayment, which is likely to increase the level of debt.

SalaryCalculator. (2016). *Salary calculator*. Retrieved from http://www.salarycalculator.org/

Scholarship America. (2004). *Investing in America's future: Why student aid pays off for society and individuals.* The Institute for Higher Education Policy. Washington, D.C.

Swarthout, L. (2006). Paying back, not giving back: Student debt's negative impact public service career opportunities. *The State PIRGs' Higher Education Project.* Boston, MA.

Thelin, J. (2004). *A history of American higher education.* Baltimore, MD.: The Johns Hopkins University Press.

TICAS (2014a). *Private loans: Facts and trends*. The Institute for College Access and Success. Washington, DC: Author.

TICAS (2014b). *Quick facts about student debt*. Retrieved from http://ticas.org/sites/default/files/pub_files/Debt_Facts_and_Sources.pdf

Trow, M. (1993). Federalism in American higher education. In A. Levine, A. (Ed.). *Higher Learning in America.* Baltimore, MD.: The Johns Hopkins University Press.

U.S. Department of Education, National Center for Education Statistics. (2011). *The Condition of education 2011*. (NCES 2011–033)

U.S. Department of Education. (2012). *ACE fact sheet on higher education*. Washington, DC.

U.S. Department of Education. (201*5). Fast facts: Tuition costs of colleges and universities.* Washington, DC.

U.S. Department of Labor. (2016). Fair labor standards advisor. Retrieved from http://webapps.dol.gov/elaws/faq/esa/flsa/001.htm.

Vaughan, G. B. (2006). *The community college story*. Washington, DC: Community College Press.