MEMORANDUM

TAB F

January 17, 2020

USHE – Student Aid Project

In May 2018, the Board of Regents adopted three strategic priority initiatives including the request that the Commissioner and his staff engage in a comprehensive study of the Board's current tuition and student aid policies. The Board assigned the Finance and Facilities committee as the steering committee and created a scope of work to guide further research in: 1) tuition and student aid; 2) the value of nonresident students; and 3) measuring college affordability.

The scope of work was presented and approved in the November 2018 Regents meeting, with the Kem C. Gardner Policy Institute contracted to perform research and compile a comprehensive report. The attached document was presented by the Gardner Policy Institute to the Finance and Facilities Committee in October 2019 in fulfillment of the contract.

The report is divided into three sections that align with the scope of work: 1) a review and analysis of tuition and state aid policies; 2) a calculation of the economic impact of nonresident students in USHE institutions; and 3) a discussion of how to measure college affordability.

Commissioner's Recommendation

The Commissioner recommends the Regents review the following document and consider potential policy modifications and enhancements.

Attachment

Utah System of Higher Education: State Aid Project

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Utah System of Higher Education: State Aid Project

ANALYSIS IN BRIEF

The Utah System of Higher Education (USHE) is governed by the Utah State Board of Regents and is comprised of Utah's eight public colleges and universities, including:

- University of Utah
- Utah State University
- Weber State University
- Southern Utah University
- Snow College
- Dixie State University
- Utah Valley University
- Salt Lake Community College

USHE commissioned the Kem C. Gardner Policy Institute to assess system-wide tuition and state aid policies. This report focuses on three main topics: tuition and state aid policies, the economic impacts of nonresident students, and measuring college affordability. This comprehensive report presents a baseline analysis for further policy discussion surrounding state aid in Utah.

At-A-Glance

Tuition and State Aid

- Utah ranked seventh out of the 15 WICHE states for lowest tuition and fees.
- Since the 2008-09 academic year, net price has decreased in Utah by 13.7 percent.
- For the 2016-17 academic year, approximately 50 percent of Utah undergraduates at four-year institutions received grant aid.

Value of Nonresident Students

- The total economic impacts from USHE nonresident student expenditures include 7,694 full- and part-time jobs, $327.4 million in personal income, and $549.8 million in GDP in Utah.
- For academic year 2017-18, combined state and local net fiscal revenues amounted to $17.2 million.
- We created a 2012 cohort where we tracked graduates one year and six years after they graduated, to see if they were still working in Utah. Findings include:
  - 66.0 percent of residents and 25.9 percent of nonresidents were working in the state one year from graduating.
  - 57.6 percent of residents and 21.2 percent of nonresidents were working in the state six years from graduating.
- In addition to the 2012 cohort, we created a 2017 cohort for comparison. We find that over the last five years, a greater portion of USHE students (7.9 percentage points) are deciding to live and work in Utah.
- We find evidence that a higher level of educational attainment results in higher wages for both resident and nonresident graduates.

Economic Impacts of Nonresident USHE Students, Academic Year 2017-18

(Millions of 2018 Dollars)

Impact	Jobs	Personal Income	GDP
Tuition	4,138	$175.4	$255.9
Room and Board	1,564	$84.1	$188.4
Other Expenses	1,848	$61.7	$95.4
Books and Supplies	144	$6.2	$10.0
Total	**7,694**	**$327.4**	**$549.8**

Note: Jobs reported are a mix of part- and full-time jobs created in Utah.
Source: Kem C. Gardner Policy Institute analysis using the REMI PI+ model.

Measuring College Affordability

- For a hypothetical family of three with two parents and one college-bound student:
  - Based on the Expected Family Contribution, the student has a surplus of $7,457 if living off campus with family; a deficit gap of $14,226 if living on campus; or a deficit gap of $25,249 if living off campus, but not with family.
  - Based on the Rule of 10, the student has a surplus of $23,749 if living off campus with family; a surplus of $2,017 if living on campus; or a deficit gap of $8,912 if living off campus, but not with family.
  - In all examples using net present value calculations, the return on a college degree was higher than the cost, with the exception of a 10-year timeline, a high bound discount value, and the student living off campus, not with family. This results in a loss of $1,831.

Section 1: Tuition and State Aid Policy Baseline Assessment

Background

In this section, we summarize current policies and practices for each of the eight USHE institutions, propose common terminology for tuition and aid, provide examples of tuition policies and practices of select higher education systems in other states, and summarize our literature review identifying nationwide practices.

Tuition and Fees

The Board of Regents sets tuition, fees, and charges for each USHE institution at levels necessary to meet budget requirements. Tuition is generally categorized as resident/nonresident and graduate/undergraduate, where nonresident and graduate tuition cost ratios are higher than resident and undergraduate.

USHE institutions are authorized to use a linear or plateau tuition model. A linear tuition model is where the incremental tuition charge per student credit hour is the same without regard to the number of hours for which a student is enrolled. A plateau (or constant) model is where students carrying a defined full-time load are charged a uniform rate within a defined range of credit hours. Tuition per credit hour between one credit hour and the beginning of the plateau range increases in linear increments. Students enrolled in credit hours beyond the plateau range are charged at the same rate-per-credit-hour as the credit hours preceding the plateau range. The plateau, may be any range between 10 and 20 credit hours.[1] Additional tuition charges may include online tuition and differential tuition.[2] The Board of Regents may authorize alternative tuition schedules for online courses and differential tuition schedules for programs on a case by case basis.

For academic year 2018-19, all tuition and general student fee schedules for USHE institutions included the categories of resident/nonresident and graduate/undergraduate (with the exception of Salt Lake Community College and Snow College not servicing any graduate level students).[3] General student fee categories may include the following, depending on institution: student activity/support, building support/bond, athletic, health, technology, transportation, and other. When looking at graduate and undergraduate programs collectively, all four-year institutions had differential tuition rates for select programs (e.g. business, accounting, engineering, etc.). The University of Utah is the only USHE institution that uses a linear model for determining tuition costs. See *Literature Review of Common Practices in Higher Education* section for additional information on linear and plateau tuition models.

State Aid Policies

Within the USHE system, only Utah State University, Snow College, and Dixie State University have a written policy on state aid:

- *Utah State University:* Policy 532, Scholarship Awarding includes definitions, scholarship awarding policies and procedures, audit processes, and references to Board of Regents policies, additional Utah State University policies, and Utah State Code references.[4]
- *Snow College:* Policy 520, Snow College Scholarship Policy includes definitions for scholarship purposes, policy, scholarship types, scholarship contract, scholarship appeals process, withdrawing of scholarship funds, duplication of awards, deferment of scholarships, and ADA accommodations for scholarships.[5] In addition to this comprehensive policy, Snow College also has a Satisfactory Academic Progress Policy that outlines eligibility for financial aid (e.g. minimum grade point average, cumulative credit hours, time frames, etc.).[6]
- *Dixie State University:* Policy 505, Financial Aid, Scholarships, and Waivers includes definitions, policies by type (e.g. institutional aid, scholarship type, deferments, tuition waivers, aid recall and appeals, graduate programs, etc.).[7]

Weber State University, Southern Utah University, Utah Valley University, and Salt Lake Community College were unable to provide the Gardner Institute a policy on state aid. The University of Utah provided a link to eligibility for Federal Financial Aid but did not have a formal policy on state aid.[8]

The lack of formal policies on state aid and tuition across USHE institutions make it difficult to adequately evaluate any systematic policies or exceptions. The state could benefit from formalized tuition and state aid policies throughout the USHE system.

Common Terminology

The Gardner Institute reviewed tuition and aid terminology from sources such as Federal Student Aid (U.S. Department of Education), the National Association of Student and Financial Aid Administrators, the State Higher Education Finance (State Higher Education Executive Officers Association), and the Integrated Postsecondary Education Data System (IPEDS). We were unable to find or determine one set of definitions that should be applied uniformly to USHE institutions. However, recommendations to guide USHE in creating a common terminology set to aid in transparency and clarity in college costs are outlined here.

For students (and parents of students) considering enrolling at a USHE institution, a lack of consistent and clear definitions of common terminology related to tuition and aid may cause frustration, miscommunication, and a lack of transparency among institutions.

As an example, when looking at the IPEDS Glossary, definitions may lack transparency or overlap may exist.[9] For example:

- Financial aid: Federal Work Study, grants, loans to students (government and/or private), assistantships, scholarships, fellowships, tuition waivers, tuition discounts, employer aid (tuition reimbursement) and other monies (other than from relatives/friends) provided to students to meet expenses. This excludes loans to parents.
- Scholarships: grants-in-aid, trainee stipends, tuition and required fee waivers, prizes or other monetary awards given to undergraduate students.
- There are *five* categories of institutional grants: scholarships and fellowships granted and funded by the institution and/or individual departments within the institution, (i.e., instruction, research, public service) that may contribute indirectly to the enhancement of these programs. Includes scholarships targeted to certain individuals (e.g., based on state of residence, major field of study, athletic team participation) for which the institution designates the recipient.[10]
- Grants by *local* government: local government grants include scholarships or gift-aid awarded directly to the student.
- Grants by *state* government: grant monies provided by the state; merit scholarships provided by the state; and tuition and fee waivers for which the institution was reimbursed by a state agency.
- Fees can be generally categorized as a comprehensive fee, required fee, or tuition and fees.

If the Board of Regents seeks to implement a common set of terminology for tuition and aid for USHE institutions, our research supports consideration of the following:

1. If the term is serving the same purpose does it need a distinction?
2. Can the term be applied across all USHE institutions or do select institutions require an exception?
3. Is the term consistent with existing local, state, or federal organizations?
4. Does the term and definition provide ease of use and understanding by students and parents?

Terms to consider may include, but are not limited to the following:[11]

1. Definitions by student type – enrollment status may determine eligibility requirements for tuition or state aid. A thorough understanding of student status will provide clarity when determining if one qualifies for any financial aid.
   a. First-time
   b. Full-time/part-time
   c. Resident/non-resident/international
   d. Graduate/undergraduate
   e. Transfer
   f. Returning
   g. Degree-seeking/non-degree seeking
2. Tuition – college affordability can be a major concern for students and parents. The cost of tuition may lack transparency if tuition in its totality is not included. Variations of tuition/cost should be defined for clarity.
   a. "Sticker" or list price
   b. Net tuition
   c. Cost of attendance/net price
   d. Room and board
   e. Books and supplies
3. Fees – fees within USHE institutions are generally categorized as general, differential/program, or as course fees, and vary widely by institution. Having so many different fee categories adds to confusion and may be difficult to calculate a student's total cost of attendance. Having uniform fees across the USHE system can aid in accountability for institutions and transparency for students.
   a. General
   b. Differential/program
   c. Course
   d. Student
   e. Other
4. Tuition discounting and aid – tuition discounting is usually defined as any financial aid that reduces the amount a student is required to pay. Tuition discounting takes many forms and is applied in a variety of ways. Having a uniform glossary of terms, or a limited set of aid terminology can add transparency in college costs and help students compare total cost of attendance at USHE institutions. Having a clear definition of institutional aid policies (e.g. need-based, merit-based, or a hybrid policy) and how they are applied may be desirable.
   a. Grants
   b. Loans
   c. Financial aid
   d. Scholarships
   e. Tuition waivers
   f. Merit-based (meritorious)
   g. Need-based (impecunious)

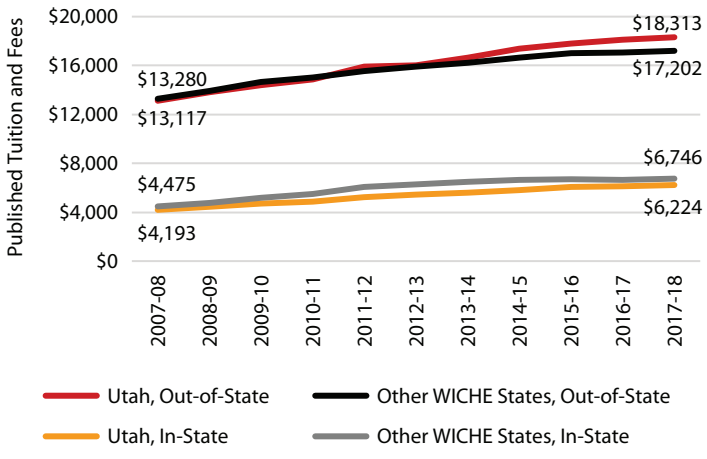
Tuition Policies and Practices in Other Higher Education Systems: WICHE States[12]

Similar to the rest of the nation, Utah is one of 46 U.S. states that delegates a tuition setting authority for two- and four-year institutions via legislative statute. In most cases, these are single- or multi-institutional boards that then have the authority to set the tuition rate for public institutions in the state. All WICHE states grant tuition setting authority to a state board for four-year institutions.[13] As a representative sample, the Gardner Institute compared public, Title IV, four-year degree-granting institutions across states in the WICHE Region.

Despite each state in the WICHE region having a governing board reviewing and setting tuition policies for institutions in their respective states, tuition can vary widely. For most students, the first estimate of the cost of attendance at a postsecondary institution is the published tuition, or "sticker price" of a school. These rates are the amount of tuition and fees covering a full academic year most frequently charged to students.[14] While these are the first estimated costs of attendance a prospective student may encounter, the values are merely a representation of what a typical student may have to pay, and is not the same for all students at the institution.

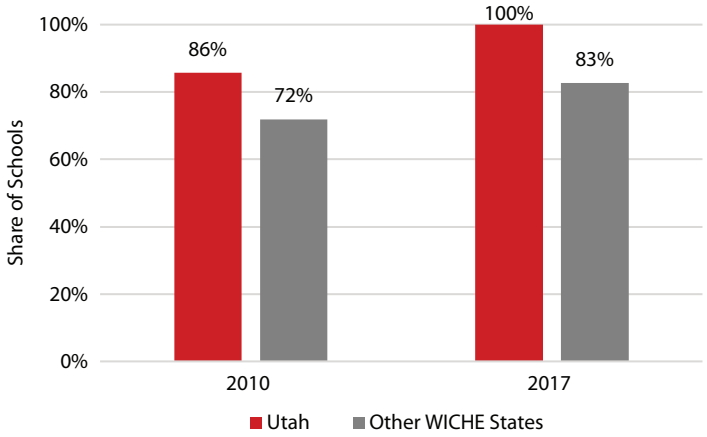
Using the latest published tuition and fees data from IPEDS, for the 2017-18 academic year, Utah's average published in-state tuition and fees were right in the middle of the WICHE region. Utah ranked seventh out of the 15 WICHE states for lowest tuition and fees, and 8 percent less than the WICHE average, less Utah (Figure 1.1). Since 2008, inflation adjusted tuition and fees for nonresident students in Utah have risen 40 percent, 10 percent more than the average for all other states in the WICHE region.

Figure 1.1: Published Tuition and Fees at Public Four-Year Degree Granting Institutions
(2018 dollars)



Source: The U.S. Department of Education's Integrated Postsecondary Education Data System and the U.S. Bureau of Labor Statistics

Figure 1.2: Prevalence of Alternative Tuition Payment Plans at Public Four-Year Institutions



Source: The U.S. Department of Education's Integrated Postsecondary Education Data System

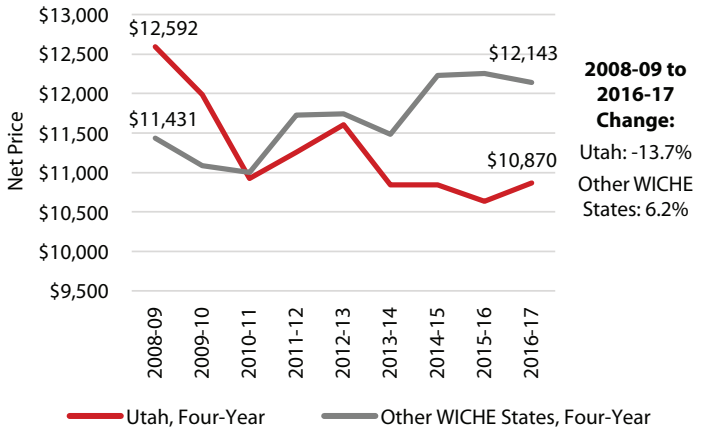
Increasingly, postsecondary institutions are implementing alternative tuition payment plans. These payment plans are not considered aid, nor do they affect the tuition charged to students. They do offer students some flexibility in payment of their final tuition costs. For the 2017-18 academic year, seven of Utah's public four-year institutions reporting to IPEDS have some form of alternative tuition payment plan. A tuition payment plan is "a program that allows tuition to be paid in installments spread out over an agreed upon period of time, sometimes without interest or finance charges."[15] This is the most popular form of alternative tuition payment plans among the states in the WICHE region. Figure 1.2 shows the prevalence of alternative tuition payment plans at four-year institutions in the WICHE region.

It is unlikely that a student pays the sticker price to attend a postsecondary institution. A more accurate measure of what students actually pay is to look at the net price, or the average yearly price actually charged to students. Using IPEDS data, which tracks the average yearly price for first-time, full-time undergraduates that receive aid, less the amount of aid received, is a more accurate picture to the cost of attendance.[16] While published tuition and fees at postsecondary institutions has been steadily increasing over the last few years, net price has remained relatively consistent. In the case of Utah's four-year institutions, net price for students receiving aid has even decreased in recent years (Figure 1.3). Since the 2008-09 academic year, net price has decreased in Utah by 13.7 percent. Overall, the net price for students awarded aid at Utah institutions is below the average of the other WICHE states.

One of the reasons students rarely pay the sticker price of an institution is the prevalence of financial aid, namely grants and scholarships. Grant aid is a form of financial aid that is awarded to students to help offset the cost of tuition, fees, and expenses

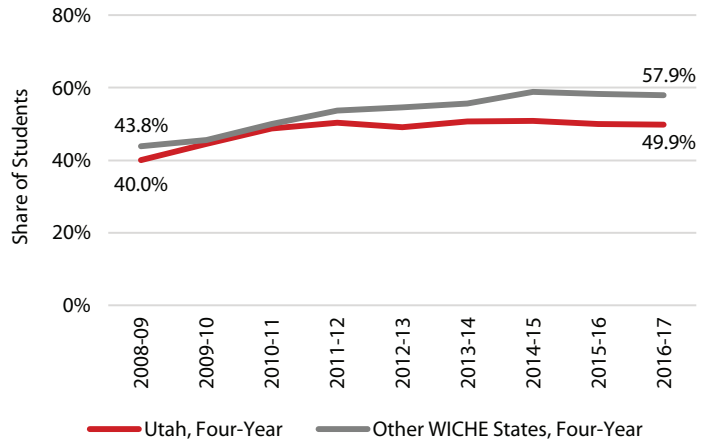
Figure 1.3: Average Net Price for Students Awarded Grant or Scholarship Aid, Weighted by Full-time Equivalent Enrollment at Four-Year Institutions

(2017 dollars)



Note: Net price reflects the average yearly price actually charged to first-time, full-time undergraduate students receiving student aid at an institution of higher education after deducting such aid only, not necessarily all students at an institution.
Source: The U.S. Department of Education's Integrated Postsecondary Education Data System and the U.S. Bureau of Labor Statistics

Figure 1.4: Share of Undergraduate Students Awarded Federal, State, Local, Institutional, or Other Sources of Grant Aid at Four-Year Institutions



Source: The U.S. Department of Education's Integrated Postsecondary Education Data System

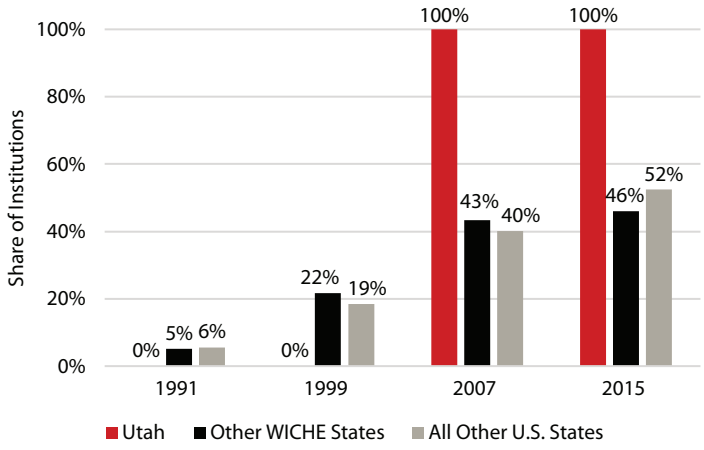
associated with attending higher education institutions. There are many sources of grant aid, which can include grants and scholarships awarded by the federal government, a state or local government, the institution, or other public or private sources. For the 2016-17 academic year, 49.9 percent of Utah undergraduates at four-year institutions received grant aid (Figure 1.4). Comparatively, 57.9 percent of undergraduates in other WICHE states received aid. This is an improvement from academic year 2008-09 when only 40.0 percent of Utah undergraduates were receiving aid. While students receiving aid rose during the Great Recession, there has been a plateau in the share of students receiving aid in recent years.

Differential tuition has become an increasingly more common practice among postsecondary institutions as a way to offset the varying costs for individual degree programs. A 2011 survey from Cornell University states no prior research has been conducted on differential tuition policies or how they are spread across the nation.[17] The results of the survey show that many postsecondary institutions began implementing differential tuition policies starting in the late 1980s and have continued to do so into the 2000s. The survey also shows that the prevalence of differential tuition policies increased based on the highest level of degree granted, with doctoral granting institutions have the highest rate of differential tuition policies.

Currently, there remains little research and no comprehensive source for detailed information on differential tuition practices among public postsecondary institutions. Researchers studying differential tuition among postsecondary institutions have noted a few impediments to gathering data on this topic including: difficulty in finding the data, inconsistency in the data and its location, lack of transparency, and even differences in terminology used.[18]

New York University hosts a publicly available data source: "Differential Tuition Database, Four Year Public Institutions: 1991, 1999, 2007, 2015" which is a longitudinal dataset covering 165 surveyed universities.[19] Of these institutions, 5.5 percent are shown to have a differential tuition policy in 1991 (Figure 1.5). By 2015, 52 percent had a differential tuition policy.

Figure 1.5: Share of Surveyed Institutions with Differential Tuition Policies



Note: This dataset does not included all institutions and is a sample set of public four-year institutions across the country with a sample size of 165 institutions. Utah's sample size is two: Utah State University and the University of Utah.
Source: New York University, Center for Research on Higher Education Outcomes.[20]

Recent Examples of Tuition Policies in Other States

Arizona State University

In an effort to address the complexity of tuition policies and the practice of charging differential tuition, course fees, and other non-transparent charges to students, Arizona State University (ASU) awaits approval from the Arizona State Board of Regents to implement a new tuition policy for academic year 2019-20. For the past seven years, ASU's tuition has risen approximately 2.8 percent for resident students, fulfilling a commitment made seven years ago to keep tuition raises below three percent.[21] This is partially an effort to simplify the more than 6,000 individual course and program fees for undergraduate students.

The model will have three base tuitions (resident, nonresident, and international). On top of the base tuitions there are four proposed undergraduate course fee levels based on the college and department a student is enrolled. There are some exceptions to this tuition plan including: fees for the Barrett honors fee, aviation fees, a fee for the post-baccalaureate Bachelors of Science in nursing, and for students in the W. P. Carey collaboration with Draper University.[22] Graduate students will not see a change in their program fee schedule. According to ASU President Michael Crow, some students might initially end up paying more as the fees are spread across the student body, but the tuition increases will remain as some of Arizona's lowest, and "financial aid tactics" will be used to keep individual student tuition increases below 3 percent.

Nevada System of Higher Education

In March 2019, the Nevada Board of Regents, which oversees eight public postsecondary institutions in the state, approved a Predictable Pricing Program.[23] This program is meant to help ensure students are aware of the base tuition fees they will be expected to cover for at least four years by basing future registration fees and tuition on the Higher Education Price Index, an inflationary measure that tracks college costs on a four-year cycle. This program was chosen after a 2018 recommendation by the Nevada System of Higher Education (NSHE) Guaranteed Tuition Working Group which proposed two policy options.

The following principles were used to guide the creation of the Predictable Pricing Policy: a shared responsibility, access and affordability, and predictable pricing.[24] The alternative option was a "Registration Fee Guarantee Program" where eligible students would receive a guaranteed registration fee for either two or four years, based on the respective institution, starting with their initial enrollment as a degree-seeking student at an NSHE institution. In both cases, the policies were intended to improve predictability in college costs for student and families and proposed to apply to all NSHE member institutions.

University of Minnesota

Currently, the University of Minnesota, which lies outside the WICHE region, has a plateau tuition model for degree-seeking undergraduate students. This policy, called the 13-credit policy, includes some exemptions, but charges an undergraduate student a 13-credit flat tuition rate regardless of actual credit load.[25] Some exemptions for this include non-degree seeking students, university employees, disabilities, significant family or financial responsibilities, and more. Despite the exemptions the 13-credit policy applies to the average degree-seeking undergraduate student, transfers included. The 13-credit base rate is determined by: degree or other program registration, enrollment level, residency status, and residency in a region with a reciprocity agreement.[26] Graduate and professional level students are charged a graduate tuition rate that includes a 6-14 credit band for full-time registration with each credit hour above or below assessed on a per-credit basis. Credit plateaus also vary by school and program within the university.

Literature Review of Common Practices in Higher Education

Linear vs. Plateau Tuition Models

As noted earlier, linear tuition models charge students an incremental rate regardless of how many credits are enrolled by an individual, while a plateau model charges a set tuition price for all students enrolled within a set range of credits. This essentially allows a student to take one to two additional classes without paying more in tuition.

Postsecondary institutions that champion plateau tuition claim it financially incentivizes students to take more credits leading to quicker graduation. Students may benefit from this by potentially entering the workforce sooner or perhaps continuing on to complete additional educational offerings.[27] [28]

We found evidence that students attempting more than 12 credits in their first semester of college have a higher probability of finishing school. Full-time undergraduates attending community college or a four-year institution enrolling in 12 instead of 15 credits were 5.9 percentage points less likely to earn an associate's or bachelor's degree.[29] A number of states such as Indiana, North Carolina, Massachusetts, and Mississippi have adjusted their state-level financial aid to accommodate 30 credit hour accumulation for the academic year.[30]

While Gardner Institute was unable to find recent peer reviewed analyses on this subject, we did review a student thesis that analyzed linear and plateau models using multiple and panel regression techniques.[31] The study's researchers surveyed 106 R1 research institutions and found 82 of these universities (77 percent) used plateau tuition schedules.[32] The study found that research institutions offering plateau tuition schedules see higher overall rates in student graduation

(5 percent) as well as higher rates of students graduating within 3.75 years (8 percent). While more research corroborating these results would be ideal, the results in this study show significant positive impacts in favor of using plateau tuition scheduling to improve student outcomes.

Nonresident Education

To compensate for decreases in state funding, institutions have turned their attention to increasing the share of nonresident (out-of-state and international) student enrollment to help mitigate lost revenue. Nonresident tuition prices are typically two times as high as resident tuition prices.[33] For USHE institutions, the minimum tuition price for nonresident students is set at least three times the resident (in-state) rate. One study analyzed whether public universities increased nonresident freshman enrollment in response to declines in state appropriations and found a 1 percent decline in state appropriations was associated with a 0.27 percent increase in nonresident freshman enrollment; this association increased to 0.50 percent at top tier public research institutions.[34] From 2004 to 2014, at least 74 prominent public universities, including the University of Utah and Utah State University, had increased the share of nonresident enrollments of total enrollments.[35]

The popularity of states turning to nonresidents as a form of revenue has potential drawbacks. Traditionally, flagship state colleges have primarily served high performing resident students with special focus on those in lower income brackets.[36] However, with increasing interest in nonresident enrollment, state stakeholders are concerned that nonresident enrollments will crowd out access for their state residents. Furthermore, increasing nonresident enrollments may harm underrepresented students such as minorities and low-income earners.[37] Some states have taken serious strides to curb increasing out-of-state enrollments by introducing nonresident caps and tying state appropriations to resident enrollments.[38]

A recent study used econometric modeling to determine if there was a causal link between increased nonresident enrollments leading to the crowding out of in-state students.[39] The study found that most public systems have few issues with accommodating both in-state and out-of-state students with the exception being the most prestigious universities in high demand. At these institutions, about every two nonresident students enrolled will crowd out one potential resident student.[40] These findings suggest that policymakers should not be too concerned with nonresident enrollment crowding out resident enrollment with the exception of top tier research institutions in high demand.

Online Education

There are more students enrolled in online coursework than ever before. Students taking at least one online course has experienced double-digit growth over the past two decades reaching 31.6 percent in Fall 2016.[41] In the same year, of the 3,338 degree granting institutions in the U.S. that offered distance education, only 140 schools were distance only institutions.[42] In 2017, nearly 80 percent of all non-profit four-year institutions offered online courses.[43]

Surveys have found the vast majority of institutions offer online courses to improve student access and not as a strategy to contain tuition increases.[44] However, in recent years revenue generation has gained significance.[45] Higher education institutions that turn to online education as a new revenue stream may be disappointed. Higher education institutions with established online coursework and programs and with high enrollment are expected to continue to capture the majority of future new enrollees compared to universities with new programs or those that are smaller in terms of online enrollment.[46] Institutions with a higher share of online students tend to charge lower tuition rates for online coursework.[47]

While greater access and flexibility are notable advantages of online programs, they tend to have higher dropout rates for students who have trouble adapting to technology or are less academically prepared (such as achieving lower marks in high school).[48]

Having higher education institutions offer online coursework is highly dependent on the goals of the system's long-term strategies. Online education has significant upfront costs and its benefits in terms of student outcomes is debatable. On the other hand, online education can be a valuable tool for ensuring higher access to institutions (especially for rural Utahns), greater flexibility for those who may not have the means of attending in traditional classrooms, and as a potential tool to help control rising tuition costs.

Performance-based Funding

A growing number of states are adopting accountability policies that tie institutional funding to outcomes they produce. These practices are known as performance-based or outcomes-based policies. Currently, 31 states (including Utah) use performance-based funding for at least a portion of higher education funding and more.[49] The benefit of performance-based systems is that they have the potential to drive state objectives that lawmakers intend for higher education while also providing a way to justify institutional need through tuition increases and state aid.

To ensure that institutions are incentivized to meet performance-based objectives set by lawmakers, it is important to ensure that adequate funding is tied to the program. Most states are setting aside 5 to 25 percent of higher education dollars for performance-based funding.[50] Common measures that states track are those that count the number of degrees awarded by a college (28 states), use some form of course completion (16 states), include retention rates (12 states), incorporate graduation rates (12 states), and emphasize post-graduation outcomes such as licensure test passing rates, job placement, and earnings (11 states).[51] Many states have only recently adopted performance-based measures; however, early research is showing promising results.[52] [53]

In terms of mitigating tuition increases, some strategies are preferable. States that link tuition increases to financial aid policy and provide incentives to limit tuition increases tend to be negatively associated with tuition increases.[54] Even if "sticker prices" of tuition increase, it is usually offset by a larger share of aid available to students, causing an overall reduction in the net price a student pays.

On the other hand, evidence suggests that tuition caps, curbs, and freeze policies actually increase tuition rates.[55] [56] When institutions hear of possible tuition caps from policymakers, they tend to preemptively raise tuition. Also, most states that have implemented tuition caps have maximums that generally range from 3 to 10 percent, well above rates of inflation. Institutions in these states generally apply for tuition increases near or at the allowable maximum to act as a buffer in case future limits do not match increases in unavoidable expenses. There is also evidence that tuition is more likely to increase when individual institutions have tuition setting privileges rather than a centralized governing authority.[57]

Utah currently has adopted five performance-based metrics that are tied to funding for USHE institutions.[58] They include:

1. Completion: degrees and certificates awarded
2. Underserved student completion: degrees and certificates awarded
3. Responsiveness to workforce: degrees and certificates awarded in high market demand fields
4. Institutional efficiency: degrees and certificates awarded per FTE student
5. Research: research expenditures

In order to earn performance-based funding, institutions are required to improve performance in these metrics. Over the last three to four years of tracking, many of these metrics have improved (completion, responsiveness to workforce, and research) suggesting that performance-based metrics may be valuable. However, more research and analysis is needed to determine any direct impact of this approach.

Each state that participates in performance-based policy tends to have between four and 10 metrics that lawmakers want to improve. We find that Utah's chosen performance measures align closely to what the majority of other states have implemented.[59] Additional metrics for policymakers to consider include tying tuition increases to financial aid policy and incentives to moderate tuition increases.

Section 2: Economic Impacts of Nonresident Students at Utah's Public Higher Education

Background

In this section, we assess the benefit of nonresident students attending USHE institutions for academic year 2017-18, including estimated economic and fiscal impacts, analysis of graduates working in Utah, a brief literature review, and our methodology.

Enrollments at USHE Institutions

Economic impacts arise when "new" dollars enter Utah from outside the state. USHE nonresident students generate economic impacts through their tuition and living expenditures while attending school in Utah. From academic year 2010-11 to 2017-18, USHE institutions increased their share of nonresident students by 4.9 percentage points (Figure 2.1).

The nonresident share of enrollment varies across USHE institutions (Table 2.1). The institutions with the highest nonresident full-time equivalent (FTE) enrollments were the University of Utah (6,414) and Utah State University (4,525). The institutions with the highest share of nonresident FTE enrollments were Southern Utah University (22.6 percent) and Dixie State University (21.2 percent).

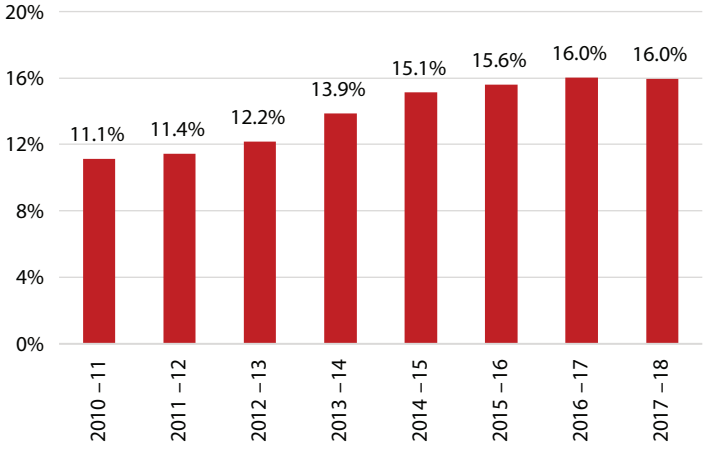
Modeling the Direct Inputs of Student Expenditures

This study begins with the direct inputs of USHE out-of-state student expenditures. Students enrolled at USHE institutions spend money on tuition, supplies, and other education-related expenses. They also spend in the local community, such as shopping for clothes, meals, and entertainment. The money these students spend while attending USHE institutions supports the growth of Utah's economy. However, to be considered new economic activity in a region, the source of the spending needs to originate outside of Utah. To satisfy this condition, we analyze the spending patterns of nonresident students, whose sources of income are largely out of state. We also remove any nonresident wages earned within Utah from total nonresident expenditures, as these wages are not an economic impact.

The nonresident student direct inputs include net tuition revenue (provided by USHE), estimates of what a student spends for room and board, books and supplies, and other expenses from IPEDS (obtained from financial aid offices at USHE institutions).[60] For ease of classification, we split the "other expense" estimate equally across four categories: retail, restaurants, personal care, and recreation.[61] We scaled per-student estimates for each category by each USHE institution's annualized FTE nonresident enrollment for academic year 2017-18. Table 2.2 provides the gross expenditures in each category, which total $549.1 million.

Spending estimates from financial aid offices are likely conservative, representing something close to the minimum cost of living for a student. Nonresident students, especially those from affluent backgrounds, may spend much more than what financial aid offices estimate. For example, it is reasonable to expect that some students buy new cars and other expensive

Figure 2.1: Nonresident Share of Total Enrollments at USHE Institutions



Note: Data series for academic years 2010-11 through 2017-18. Based on annualized FTE total (budget-related and self-support) enrollment.
Source: Kem C. Gardner Policy Institute analysis of Utah System of Higher Education data.

Table 2.1: FTE Enrollments by Residency at USHE Institutions, Academic Year 2017-18

Institution	Resident	Nonresident	Total	Nonresident Share of Total
University of Utah	24,280	6,414	30,693	20.9%
Utah State University	18,989	4,525	23,513	19.2%
Weber State University	16,282	1,787	18,069	9.9%
Southern Utah University	6,375	1,865	8,240	22.6%
Snow College	3,502	413	3,915	10.6%
Dixie State University	5,750	1,547	7,298	21.2%
Utah Valley University	22,714	3,750	26,464	14.2%
Salt Lake Community College	16,277	1,382	17,659	7.8%
Total	**114,169**	**21,682**	**135,851**	**16.0%**

Note: Annualized FTE reported for summer, fall, and spring academic year 2017-18. FTE includes budget-related and self-support enrollment.
Source: Kem C. Gardner Policy Institute analysis of Utah System of Higher Education data.

Table 2.2: USHE Nonresident Student Expenditures, Academic Year 2017–18
(Millions of Dollars)

Category	Gross Expenditures	Margin Adjustment	Wages	Net Direct Expenditures
Tuition	$210.8		-$65.0	$145.8
Room and Board	$201.0		-$62.0	$139.0
Books and Supplies	$28.9	31.8%	-$2.8	$6.4
Retail	$27.1	33.1%	-$2.8	$6.1
Restaurants	$27.1		-$8.3	$18.8
Personal Care	$27.1		-$8.3	$18.8
Recreation	$27.1		-$8.3	$18.8
Total	**$549.1**	**-$37.9**	**-$157.5**	**$353.7**

Note: 2017–18 refers to the annualized academic year for estimated student expenditures and tuition while wages are for the working period from Q3 2017–Q2 2018. Tuition includes net tuition and miscellaneous fees. Net direct expenditures are gross expenditures with margins and wages removed. Margin adjustments for books and supplies and retail goods include transportation adjustments obtained from the Bureau of Economic Analysis (BEA).
Source: Kem C. Gardner Policy Institute analysis using data from the Utah System of Higher Education, Utah Data Research Center, and the U.S. Bureau of Economic Analysis.

goods while attending school in Utah. Adding these purchases would raise our total student expenditures estimates. We have chosen to use financial aid offices estimations, therefore our results may represent a lower bound. We further detail tuition and spending estimates in the methodology section.

Before we are ready to model student expenditures, there are a couple of adjustments to consider. For retail sales, including books and supplies and the retail portion of other purchases, some of this spending is paid to the manufacturer (likely based out of the state) by the retailer. We keep the retailer's margin to isolate money that stays in Utah. Similarly, there are transportation costs involved in delivering goods to retailers, which are reflected in retail prices. Our margin adjustment also accounts for those transportation costs that stay within Utah. To determine these margins, we use final demand retail and transportation margins obtained from the U.S. Bureau of Economic Analysis (BEA). We margin books and supplies at 31.8 percent and other retail expenditures at 33.1 percent, resulting in a $37.9 million adjustment.

We also take into account the wages that nonresident students earn while working in Utah. Since these wages originate from within the state, they cannot be counted as economic impacts. We must remove them from our student expenditure estimates or risk introducing bias into the study's results. To remedy this, we obtained wage data from the Utah Data Research Center (UDRC) for all USHE students employed from the third quarter of 2017 to the second quarter of 2018 (to best align with the academic year). For this period, nonresident students earned $157.5 million in wages. In Table 2.2, we reduce each category of student expenditure by a portion of wages earned to reach

Table 2.3: Economic Impacts of Nonresident USHE Students, Academic Year 2017-18
(Millions of 2018 Dollars)

Impact	Jobs	Personal Income	GDP
Tuition	4,138	$175.4	$255.9
Room and Board	1,564	$84.1	$188.4
Other Expenses	1,848	$61.7	$95.4
Books and Supplies	144	$6.2	$10.0
Total	**7,694**	**$327.4**	**$549.8**

Note: Jobs reported are a mix of part- and full-time jobs created in Utah.
Source: Kem C. Gardner Policy Institute analysis using the REMI PI+ model.

$353.7 million in net direct student expenditures. This is the economic activity directly generated from USHE nonresident students, also referred to as the direct impact. We cover additional wage analysis in the methodology section.

USHE Nonresident Economic Impacts

With students' retail spending margined and their in-state wages accounted for, we are ready to calculate the economic impacts of nonresident student expenditures using the REMI PI+ economic impact model. The total economic impacts from USHE nonresident student expenditures include 7,694 full- and part-time jobs, $327.4 million in personal income, and $549.8 million in GDP in Utah (Table 2.3). We present total impacts by spending category. Tuition was the largest component (between 46.5 and 53.7 percent of total impacts), consisting of 4,138 jobs, $175.4 million in personal income, and $255.9 million in GDP. The next largest impacts category was room and board, followed by other expenses and books and supplies.

Total impacts are the sum of USHE's direct inputs (student expenditures) and the indirect and induced impacts generated by the REMI economic model. Businesses that receive money from student spending (universities, bookstores, local restaurants, etc.) purchase goods and services in the local economy; these are the indirect effects. The employees of the businesses that receive student spending, and of their in-state suppliers, spend a portion of their wages and salaries in Utah; this is the induced effect. The combination of these three sources of spending rippling throughout the economy produces total impacts.

USHE Nonresident Fiscal Impacts

The Gardner Institute estimated the state and local government revenues and expenditures arising from the economic and demographic impacts calculated by REMI. These impacts occur through changes in employment, income, industry output, and population generated by USHE student spending in Utah. For academic year 2017-18, combined state and local net revenues amounted to $17.2 million (Tables 2.4 and 2.5).

Table 2.4: Estimated State Fiscal Impacts, Academic Year 2017-18

(Millions of 2018 Dollars)

Impact	Amount
Personal Income Tax Revenues	$8.7
Corporate Income Tax Revenues	$0.7
State Sales Tax Revenues	$9.4
Total State Revenues	**$18.8**
State Non-Education Expenditures	$4.9
State Public Education Expenditures	$2.5
State Higher-Education Expenditures	$2.0
Total State Operating Expenditures	**$9.4**
Net State Operating Revenue (Expenditure)	**$9.4**

Note: Fiscal impacts do not include direct state expenditures for nonresident students.
Source: Kem C. Gardner Policy Institute analysis using the Gardner Institute fiscal model.

Table 2.5: Estimated Local Fiscal Impacts, Academic Year 2017-18

(Millions of 2018 Dollars)

Impact	Amount
Local Sales Tax Revenues	$1.3
Property Tax Revenues	$8.6
Total Local Revenues	$9.9
County Non-Education Expenditures	$1.2
Countywide Public Education Expenditures	$0.9
Total Local Operating Expenditures	**$2.2**
Net Local Operating Revenue (Expenditure)	**$7.8**

Note: Local revenues and operating expenditures include local counties and school districts. Cities and towns are not included. Fiscal impacts do not include direct state expenditures for nonresident students.
Source: Kem C. Gardner Policy Institute analysis using the Gardner Institute fiscal model.

For state-level fiscal impacts (Table 2.4), Utah collected tax revenues amounting to $18.8 million. This revenue came from personal income, corporate income, and state sales taxes collected from individuals and businesses supported by student expenditures. These individuals and businesses also consumed state resources, such as using public roads and sending their children to public schools and universities. These state expenditures amounted to $9.4 million in academic year 2017-18. Overall, the effects of USHE nonresident students contributed to a net positive operating balance of $9.4 million in revenues to the state.

The same individuals and businesses mentioned in the previous paragraph also paid local taxes and consumed local resources. Counties (Table 2.5) collected $9.9 million in revenue from local sales and property taxes, while paying about $2.2 million for county operations and public education to serve the population supported by nonresident student expenditures. The net result was $7.8 million in revenue for school districts and county governments.

USHE Graduates Working In Utah

The Gardner Institute also researched what happens to USHE graduates after they have completed their education. We requested additional data from UDRC, this time looking at the percentage of graduates who stay in Utah to work and what these graduates earn.

We created a 2012 cohort where we tracked graduates one year and six years after they graduated, to see if they were still working (and thus living) in Utah. The 2012 cohort represented 23,141 students who graduated in calendar year 2012 (Table 2.6). For the one-year cohort, 66.0 percent of residents and 25.9 percent of nonresidents remained working in the state. Overall, 62.1 percent of all 2012 graduates were still working in the state. To measure the long-term residency of graduated students, we also tracked whether graduates were working in Utah six years out. For the six-year cohort, 57.6 percent of residents and 21.2 percent of nonresidents were still working in Utah. In total, 54.1 percent of 2012 graduates (a decrease of 8.0 percentage points) still worked in Utah in 2018.

To establish a sense of how this trend may be changing over time, we created a 2017 cohort that corresponds to the one-year 2012 cohort. Table 2.7 shows that 73.9 percent of resident and 39.3 percent of nonresident graduates were still working in Utah in 2018. This suggests that over the last five years, a greater of portion USHE students are deciding to live and work in Utah; this is especially true for nonresident students whose share increased 13.4 percentage points.

Table 2.6: USHE Graduate Cohort, 2012

Residency	Total Graduates	Employed in Utah One Year After Graduation	Share of Residency Total	Employed in Utah Six Years After Graduation	Share of Residency Total
Resident	20,905	13,790	66.0%	12,046	57.6%
Nonresident	2,236	579	25.9%	473	21.2%
Total	**23,141**	**14,369**	**62.1%**	**12,519**	**54.1%**

Note: Includes latest graduation date and the highest award level for each individual who graduated in calendar year 2012; also includes individuals that may have continued their education.
Source: Kem C. Gardner Policy Institute analysis of data from Utah Data Research Center.

Table 2.7: USHE Graduate Cohort, 2017

Residency	Total Graduates	Employed in Utah One ar After Graduation	Share of Residency Total	Difference from 2012 Cohort (percentage points)
Resident	14,977	11,067	73.9%	7.9%
Nonresident	3,552	1,396	39.3%	13.4%
Total	**18,529**	**12,463**	**67.3%**	**5.2%**

Note: Includes latest graduation date and the highest award level for each individual who graduated in the first seven months of calendar year 2017; also includes individuals that may have continued their education.
Source: Kem C. Gardner Policy Institute analysis of data from Utah Data Research Center.

Table 2.8: USHE Graduate Annual Median In-State Wages for 2012 and 2017 Cohorts
(2018 Dollars)

		2012 Cohort			2017 Cohort*	
Award Level	Residency	One Year Post-Graduation	Six Years Post-Graduation	Change	One Year Post-Graduation	Change from 2012 One-Year
Less Than Bachelor's Degree	Resident	$24,898	$38,224	53.5%	$22,248	-10.6%
Less Than Bachelor's Degree	Nonresident	$18,326	$34,868	90.3%	$18,388	0.3%
Bachelor's Degree	Resident	$35,445	$52,328	47.6%	$37,600	6.1%
Bachelor's Degree	Nonresident	$29,845	$50,272	68.4%	$31,872	6.8%
Graduate Certificate or Degree	Resident	$53,092	$72,848	37.2%	$54,776	3.2%
Graduate Certificate or Degree	Nonresident	$48,318	$67,360	39.4%	$53,004	9.7%

Note: Measured time of employment after graduation. Nonresidents defined as ever being listed as an out-of-state student prior to graduation. We determine primary employment by taking the highest paying employer for each graduate in the dataset. A graduate is considered employed if they posted wages in any of the 4 or 24 quarters following the quarter of their graduation.
*Only includes students graduating in the first seven months of 2017.
Source: Kem C. Gardner Policy Institute analysis of data from Utah Data Research Center.

Lastly, we tracked annual median wages for the 2012 and 2017 cohorts (Table 2.8). For all cohorts, a higher level of educational attainment resulted in higher wages for both resident and nonresident subcategories. Given the same level of education, resident graduates make more than nonresident graduates do. Comparing the one-year and six-year periods, graduates at every education level earn more the longer they are in the workforce. We expect individuals to earn more as they build their careers. Those with less than a bachelor's see the fastest gains, while nonresident graduates with bachelor's degrees show the largest absolute increases. Interestingly, resident graduates with less than a bachelor's degree in the 2017 cohort are making less one year out compared with the 2012 cohort; while those with a bachelor's or higher all experience increasing wages over time.

Literature Review

The majority of academic literature assessing the benefits of nonresident students consists of how their expenditures create economic impacts.[62] [63] [64] We also find institutions turn to nonresident tuition as a source of revenue.[65] One study found a 1.0 percent decline in state appropriations was associated with a 0.27 percent increase in nonresident freshman enrollment; this association increased to 0.50 percent at top-tier public research institutions.[66] From 2004 to 2014, at least 74 prominent public universities, including the University of Utah and Utah State University, had increased their share of nonresident enrollments.[67]

A potential cost of increasing nonresident enrollment is the crowding out of residents. This issue affects schools that implement enrollment caps (USHE institutions do not apply enrollment caps). Historically, flagship state institutions have primarily served high-performing resident students giving special focus on those in lower income brackets.[68] However, with increasing interest in nonresident enrollment, state stakeholders are concerned that nonresident enrollments will limit access for their state residents. Furthermore, increasing nonresident enrollments may harm underrepresented students, such as low-income earners and minorities.[69]

A study used econometric analysis to determine if there was a causal link between increased nonresident enrollments leading to the crowding out of in-state students.[70] The study found evidence suggesting that at prestigious institutions, such as state flagship universities, every two nonresident students enrolled would crowd out one potential resident student.[71]

Outside economic impacts and tuition, research on the benefits of nonresident students is sparse. The literature we found suggests that nonresident students offer unique cultural backgrounds, traditions, and skillsets that benefit the entire

student body.[72] A study found that diverse campuses had a positive effect on educational outcomes through its effects on diversity-centric student activities and experiences.[73] Another report mentions that students feel a greater sense of belonging and support at campuses with higher levels of student diversity.[74]

Methodology and Supporting Data

REMI Economic Model

The Gardner Institute used the Regional Economic Models, Inc. PI+ model to estimate the economic impacts of USHE nonresident students. REMI is a dynamic model that incorporates input-output, economic geography, econometric, general equilibrium, and demographic components. The REMI inputs and results were for the 2017 calendar year.

Gardner Institute Fiscal Model

The increased economic activity from student expenditures produces new income and sales tax revenues, while the greater population supported by this increased activity creates additional government expenditures. The Gardner Institute estimates fiscal impacts based on multiyear historical relationships between personal income, employment, industry output, population, government expenditures, and tax revenues. Consistent with the REMI economic model, our fiscal impact model was for the 2017 calendar year.

Economic Impact Analysis

Economic impacts arise when "new" dollars enter a region from external sources. The region of interest for this study is the state of Utah. To isolate economic impacts, the Gardner Institute adjusted the inputs to include only money that originated from outside of the Utah region. We achieved this by focusing on nonresident students, whose spending is largely funded by out-of-state sources.

If we were to include all student spending, regardless of where it originated from, we would measure the economic footprint of USHE institutions. This would include both money that originates from outside of Utah as well as money that is already circulating within the state's economy (e.g., in-state student wages and in-state family support). While measuring an economic footprint is useful in analyzing how USHE affects the structure of Utah's economy, it is the economic impacts that bring new resources into Utah.

Counterfactual

A critical assumption when classifying spending as economic impacts is whether nonresident student spending would exist in Utah in the absence of public colleges and universities. This question is known as the counterfactual. We believe that without USHE institutions, most nonresident students—who would have otherwise attended a USHE school—would instead go somewhere outside of Utah for their education. There are only two other premier universities in Utah, Brigham Young University (BYU) and Westminster College. While both institutions appeal to students in their own right, they do not provide competitive substitutes for many of the programs and course offerings that attract nonresident students to USHE schools. Even if BYU and Westminster were perfect substitutes, the two institutions would not be able to accommodate the number of nonresident students that USHE attracts. Eventually, private sector higher education would presumably grow to meet at least in-state demand. Our single-year analysis avoids tenuous assumptions regarding such growth or the corresponding change in appeal of private institutions to nonresident students.

Table 2.9: USHE Nonresident Tuition Revenue, Academic Year 2017-18

(Millions of Dollars)

Category	Undergraduate	Graduate	Nonresident Total
Gross Tuition	$242.7	$70.7	$313.3
Employee Benefits	-$0.2	-$16.2	-$16.5
Total Waivers	-$81.6	-$5.8	-$87.4
Miscellaneous Fees	$1.1	$0.3	$1.4
Net Tuition Revenue	**$161.9**	**$48.9**	**$210.8**

Note: Data consists of tuition revenue from summer, fall, and spring semesters for academic year 2017–18. Employee benefits include tuition-reduction benefits and T/A benefits
Source: Kem C. Gardner Policy Institute analysis of Utah System of Higher Education data.

Tuition

The tuition inputs of interest for this study are nonresident net tuition and fee revenue. Table 2.9 breaks out tuition revenue by student enrollment level. For academic year 2017-18, students were assessed $313.3 million in gross tuition. Removing sources of in-state funding (such as employee benefits and waivers) and adding miscellaneous fees yields net tuition revenue of $210.8 million. Undergraduate students paid 77.5 percent of total nonresident tuition revenue while graduates contributed 22.5 percent. Graduates make up 9.5 percent of the nonresident student population, indicating that, on average, nonresident graduate students pay more tuition than nonresident undergraduate students.[75]

Additional Student Spending Estimates

Outside of tuition, students buy an array of goods and services including rent, personal care, entertainment, food, and school supplies. To estimate total student spending, we turn to estimates obtained from USHE institutions' financial aid offices.[76] Student spending estimates that we include in this study are

room and board, books and supplies, and other expenses. These estimates are based on the average expenditure per undergraduate student and are presented by USHE institution in Table 2.10. The average estimate for total student cost less tuition for USHE institutions ranges from $9,200 per student at Snow College to $15,656 at Dixie State University for academic year 2017-18.[77]

Note that the Integrated Postsecondary Education Data System (IPEDS) student expenditure estimates do not exist for graduate students. However, we expect that room and board and other expenses would be the same for both undergraduate and graduate nonresident students in Utah; we also expect books and supplies to be similar. Therefore, we use undergraduate spending estimates for both levels of instruction.

We do not have information about the ratio of nonresident students living on- versus off campus for each USHE school. We erred on the side of caution by using on campus estimates for most schools, as they were smaller than off campus estimates.[78] We base estimated student expenditures on averages pulled from IPEDS (obtained from financial aid offices at USHE institutions). An ideal scenario would be if each USHE institution performed a comprehensive student survey on a range of spending habits.

The College Board publishes low and moderate student living expense budgets.[79] Table 2.11 provides average budgets for the U.S., western states region, and the Denver-Aurora, Colorado metropolitan statistical area (MSA).[80] Three USHE institutions' spending averages are less than all three areas' low nine-month budgets, and all USHE institutions are lower than the areas' moderate nine-month budgets.

Table 2.10: USHE Student Budgets, Academic Year 2017-18

Institution	Room and Board	Books and Supplies	Other Expenses	Total
University of Utah	$9,867	$1,232	$3,690	$14,789
Utah State University	$7,080	$824	$3,840	$11,744
Weber State University	$8,400	$1,200	$5,052	$14,652
Southern Utah University	$7,067	$1,600	$4,800	$13,467
Snow College	$4,200	$2,000	$3,000	$9,200
Dixie State University	$6,328	$950	$8,378	$15,656
Utah Valley University	$5,960	$976	$3,398	$10,334
Salt Lake Community College	$10,200	$1,300	$3,750	$15,250
Average	**$7,388**	**$1,260**	**$4,489**	**$13,137**

Note: Estimates using IPEDS nine-month (fall and spring) academic year. Estimates are for on campus spending except Salt Lake Community College and Utah Valley University, which do not have on campus dormitories. IPEDS includes first-time undergraduate students enrolled full-time for academic year 2017–18.
Source: Kem C. Gardner Policy Institute analysis of data from the U.S. Department of Education's Integrated Postsecondary Education Data System.

Table 2.11: Low and Moderate Nine-Month Living Expense Budgets, Academic Year 2017-18

Area	Low	Moderate
Denver, Colorado	$12,298	$18,365
Western States	$12,816	$19,138
United States	$11,940	$17,830

Note: The budgets are based on data from the Consumer Expenditure Survey and the Indexes of Comparative Costs, both produced by the U.S. Bureau of Labor Statistics. Denver, Colorado refers to the Denver–Aurora, Colorado metropolitan statistical area (MSA). Mountain and Utah regions/MSAs were not available.
Source: The College Board.

Wages

A key concern with the cost of attendance setup so far is that we assume that the majority of funding that pays for the cost of attendance originates from outside of Utah. If nonresident students are earning wages working at Utah firms, then our student expenditure estimate is upwardly biased. The solution to this issue is to reduce our student expenditure estimate by the amount of wages nonresident students earn in Utah. The UDRC provided wage and salary data of nonresident students enrolled at USHE institutions for a one-year period between 2017 and 2018. Wage data is available by quarter. To adhere to the academic year as closely as the data would permit, wage data is from the third quarter of 2017 through the second

Table 2.12: USHE Nonresident Student Wages, Academic Year 2017-18

Origin/Enrollment Level	Total Students	Total Students Working	Percent of Total Student Working	Wages	Percent of Total Wages	Average wage
Domestic	**23,133**	**10,453**	**91.0%**	**$162,737,193**	**88.4%**	**$15,568**
Graduate	2,450	978	8.5%	$22,320,723	12.1%	$22,823
Undergraduate	20,683	9,475	82.5%	$140,416,470	76.2%	$14,820
International	**6,516**	**1,037**	**9.0%**	**$21,427,739**	**11.6%**	**$20,663**
Graduate	1,842	615	5.4%	$14,460,521	7.9%	$23,513
Undergraduate	4,674	422	3.7%	$6,967,218	3.8%	$16,510
Grand Total	**29,649**	**11,490**	**100.0%**	**$184,164,932**	**100.0%**	**$16,028**

Note: Gross wages pulled for the 2017–18 working year cover Q3 2017 through Q2 2018.
Source: Kem C. Gardner Policy Institute analysis of Utah Data Research Center data.

quarter of 2018. We present this data by student origin and enrollment level in Table 2.12.

Of the 29,649 nonresident USHE students matched to employment data, 11,490 (38.8 percent) worked at least part-time in Utah. Gross wages/salaries amounted to $184.2 million for students working during academic year 2017-18. Domestic nonresident students earned 88.4 percent of total wages paid to nonresident students. Similarly, undergraduate students earned 80.0 percent of total wages compared with 20.0 percent for graduates. These results are not surprising as there are more domestic and undergraduate than international or graduate students.

For average wages per domestic student, graduate students earn $22,823 compared with undergraduate students at $14,820; international wages by enrollment were similar. We expect there is a higher percentage of graduate students who work full-time and are employed in an industry related to their field of study. International students earned more than domestic students on average, $20,663 compared with $15,568. This is due to there being a higher ratio of international graduate to international undergraduate students compared with the ratio of domestic graduate to domestic undergraduate students.

Before we remove in-state wages from our student expenditure estimate, we need to account for taxes and employee contributions. To do this, we turn to the Consumer Expenditure Survey, which is a nationwide household survey performed by the U.S. Bureau of Labor Statistics asking Americans how they spend their money.

In Table 2.13, we removed personal taxes paid (i.e., federal, state, and local income tax) and employee contributions to social security and retirement (such as 401K contributions) from gross wages. Respondents between 18 and 25 years of age (which we expect is the age range of most USHE students) reported paying 6.7 percent of their wages in personal taxes and 7.7 percent of their wages towards social security and retirement. This amounted to $26.5 million that we subtract from gross wages to reach net wages of $157.6 million.

Headcount and FTE

Table 2.14 presents headcount, annualized USHE full-time equivalent (FTE), and calculated IPEDS FTE enrollment for academic year 2017-18. IPEDS bases its student expenditure estimates on undergraduate students who earned 24 credit hours for spring and fall semesters. To make consistent comparisons, we converted USHE annualized undergraduate FTE enrollment of 30 credit hours and annualized graduate FTE enrollment of 20 credit hours earned for the academic year to 24 credit hours to match IPEDS. This yields the calculated IPEDS FTE enrollment of 25,647.

Table 2.13: USHE Nonresident Student Wage Adjustments, Academic Year 2017-18

(Millions of Dollars)

Category	Share of Gross Wages	Wages
Gross Wages		**$184.2**
Personal Taxes	6.7%	-$12.3
Social Security and Pension	7.7%	-$14.2
Total Adjustments	**14.4%**	**-$26.5**
Net Wages		**$157.6**

Note: Gross wages pulled for the 2017–18 working year cover Q3 2017 through Q2 2018. Personal taxes and social security and pension data pulled from CES July 2017–June 2018 midyear tables.
Source: Kem C. Gardner Policy Institute analysis of Utah Data Research Center and Consumer Expenditure Survey data.

Table 2.14: USHE Nonresident Student Headcount and FTE Enrollment, Academic Year 2017-18

Headcount	USHE FTE	IPEDS FTE*
29,602	21,682	25,647

Note: Headcount and USHE FTE reported for summer, fall, and spring academic year 2017-18. USHE FTE includes budget-related and self-support enrollment.
*IPEDS FTE is the USHE FTE enrollment (30 credit-hours undergraduate and 20 credit-hours graduate) converted to 24 credit-hours to match IPEDS FTE enrollment used for room and board, books and supplies, and other expenses estimates.
Source: Kem C. Gardner Policy Institute analysis of Utah System of Higher Education data.

Definitions

- Direct impacts are the changes in economic activity within the region during the first round of spending. In this study, these include USHE nonresident student spending in Utah.
- Indirect impacts are the changes in sales, labor income, and employment within the region in backward-linked industries that supply goods and services to the business or industry under analysis. For example, businesses that receive money from student spending (universities, bookstores, local restaurants, etc.) purchase goods and services from local firms, who in turn may purchase additional goods and services from local firms. This "supply chain" activity creates the indirect impacts.
- Induced impacts are the increased activity within the region from household spending of the income earned by employees of the direct businesses and all indirect supporting businesses. Induced impacts arise, for example, when the employees of the businesses that receive student spending (e.g. tuition paid to universities) also spend a portion of their wages and salaries locally.
- Total impacts are the sum of direct, indirect, and induced impacts as described above. They represent the economic changes that occur when "new" money enters the state's economy and is then spent locally. This inflow has the

potential to expand the size and strength of Utah's economy. In this report, economic impacts are presented in terms of employment, personal income, and state GDP.

- Fiscal impacts are changes in state and county government revenues and expenditures resulting from changes in economic activity. The estimated revenue impacts consist of state personal and corporate income taxes, state and county sales taxes, and property taxes. Estimated expenditure impacts comprise state and county public education expenditures, state higher education expenditures, and state and county non-education expenditures.
- Employment is the number of full- and part-time jobs, counted equally. It covers employees earning wages and salaries as well as self-employed sole proprietors and partners.
- Gross domestic product (GDP) is the most commonly used measure of the contribution of a region to the national economy. It avoids the double counting of intermediate sales and measures only the "value added" by the region (or business) to final products. It can be thought of as total economic output or sales less the value of intermediate goods used to produce that output.
- Personal income consists of income a person receives from all sources: wage and salary disbursements, employer contributions for pensions and insurance, proprietors' income, rent, dividends, interest, and net transfer receipts. Personal income is measured by place of residence rather than place of work, and as such includes an adjustment for cross-regional commuting.

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Section 3: Measuring College Affordability

Background

In this section, we highlight recent and relevant research on college affordability in the United States, focusing on public, four-year institutions which comprise a bulk of the national discussion surrounding college affordability. We also use existing demographic and economic data to provide examples of select methodologies as they apply to Utah.

Review of Common Methodologies

College affordability is an often discussed topic with no concrete definition. As a result, measuring college affordability and mapping trends over time is difficult. The lack of a clear and consistent definition leaves many students, families, policymakers, and college administrations wondering if postsecondary education is affordable, to who is it affordable, and how affordability has changed over time. We highlight some of the leading contemporary practices in measuring and determining college affordability. This includes: the implementation of the federally mandated Net Price Calculator and the subsequent Expected Family Contribution (EFC); the Rule of 10, an EFC alternative proposed by the Lumina Foundation; the application of a return on investment approach and using net present value calculations; and a discussion on a holistic approach by applying comparative metrics to provide context for measuring college affordability. Using existing Utah demographic and economic data, the EFC, Rule of 10, and net present value approaches are used to provide examples of how these quantitative methods could be applied to frame the discussion of college affordability in Utah.

Net Price Calculator

The Higher Education Opportunity Act (Public Law 110-315) enacted in 2008 amended the Higher Education Act of 1965 (HEA) and required any postsecondary institution that participates in Title IV federal student aid programs and enrolls full-time, first-time degree, or certificate-seeking undergraduate students is required to post a net price calculator on its website.[81] Net price, as defined by the U.S. Department of Education, is the amount that a student pays to attend an institution in a single academic year after subtracting scholarships and grants the student receives. Scholarships and grants are forms of financial aid that a student does not have to pay back.[82] Institutions may not factor loans into consideration in their net price calculators.[83]

The U.S. Department of Education requirements are the basis for all net price calculator considerations. Using institutional data, net price calculators estimate the net cost of attendance to current and prospective students and their families based on their circumstances. The minimum required elements include a student's Expected Family Contribution (EFC), other estimated expenses, aid, and net price.[84]

Expected Family Contribution

The EFC is used and mandated by the Higher Education Opportunity Act in net price calculators for schools receiving Title IV federal aid. The EFC is a number that determines a student's eligibility for federal student aid. Financial aid administrators subtract the EFC from student's cost of attendance to determine their need for federal student financial assistance, including Pell Grants and other federal aid.[85]

The calculator uses data compiled from the Free Application for Student Aid (FAFSA) to identify median EFC based on four factors: dependency status, number in family, number in college, and income level.[86] [87] The EFC is used to identify the median amount of grant and scholarship aid a student may receive. The EFC calculation is a needs-based approach for determining the gap (difference) between the estimated cost of postsecondary education and a student's reasonable expected contribution.

The EFC is a point-in-time calculation measured by a single year and ignores any variance over time.[88] The FAFSA calculates an EFC that assumes the amount a family should be able to contribute to a student's education, but not their willingness or ability. As Goldrick-Rab points out, the financial situation of lower income families tends to be more complicated than the FAFSA can reveal, and describes situations where parents of lower income students were skeptical about providing income tax information when they were not providing financial support to the student.[89]

Some argue current financial aid process favors traditional students and does not account for the challenges of nontraditional students.[90] Others note the changes in federal aid have moved toward higher-income families, reducing the support they have to draw upon to afford a degree.[91] The EFC is a formula based on the federal government's definition of adjusted gross income which is designed for tax purposes and does not necessarily translate to calculating a family's ability to contribute to postsecondary education expenses.[92] Similarly, the FAFSA does not consider financial obligations not reported on income tax forms.[93] Another limitation of the EFC is that it is based on a consumption model framework while college is more than just a consumption good.[94] Additional considerations beyond pre-college resources ought to factor into determining college affordability.

The Rule of 10

The Lumina Foundation developed the Rule of 10 as a benchmark to assist in policy discussions on measuring college affordability.[95] The Rule of 10 is a student-centric model that is

meant to serve as a market for how much, on average, students and families can reasonably afford to pay. The model differs from the EFC in that it accounts for family savings over time and includes part-time employment while a student is enrolled in postsecondary education. The design principles used to develop this measure include:

1. Make college more affordable.
2. Focus on the transparency of prices and subsidies.
3. Embed incentives for students and institutions.
4. Align across federal, state, and institutional systems.

The Rule of 10 suggests that students should pay no more than the savings generated from saving 10 percent of discretionary income for 10 years and the earnings from working 10 hours per week while enrolled in school.[96] The benchmark focuses on four critical design elements:[97]

1. Time: The benchmark provides a timeline, making the payment process seem more manageable. The Rule of 10 assumes a student should not pay more than what their families can reasonably save in 10 years, plus the income from working 10 hours a week while enrolled.
2. Income exclusion: The Rule of 10 defines the ability to save as 10 percent of a family's discretionary income. Assuming families making 200 percent of the poverty rate can be reasonably expected to be able to afford 10 percent of their income above that rate. This assumption provides an exclusion for families making less than 200 percent of the poverty rate as it recognizes that it may be unattainable for families making less than this threshold to afford to save any amount for college expenses. The poverty rate accounts for varying family sizes, and the 10 percent savings rate applies to families regardless of the number of college-bound students.
3. Work: The benchmark accounts for a student's potential for part-time work during postsecondary education without interfering with their education program. This model allows students to work 10 hours per week while in college to help afford expenses.
4. Understandable: The benchmark should be understandable and relatable to students and families. The U.S. Department of Housing and Urban Development defines cost-burdened households as families who pay more than 30 percent of their income for housing.[98] While housing costs are specific to every family, some may pay much more, others less, it provides an easily understandable and calculable metric for understanding housing affordability. The Rule of 10 argues a similar approach for defining college affordability.

The Rule of 10 functions as a consumption-based model and is not without drawbacks. For one, the benchmark ignores any concept of return on investment (ROI) from attending college or opportunity costs of pursuing a degree or certificate. The Rule of 10 also disregards assets. Instead, it focuses solely on income and allocates all income earned from 10 hours of work toward college expenses. The formula may be unrealistically simple and does not account for income fluctuations.[99] Similarly, it does not address the additional cost burden for families with more than one student. A 10 percent savings rate for one student may suffice for a single student, but additional students would stretch the savings and drastically reduce the amount a family could provide to each student.

Return on Investment

Consumption models that focus solely on the cost of attendance and base college affordability on pre-college (and during college in the case of the Rule of 10) resources ignore the investment gains from postsecondary education. As with many ROI models, there are many assumptions, and returns are not guaranteed. Factors affecting the ROI of a student include: cost of attendance, length of time in school, their likelihood of completion, degree/level/institution, earnings, demographic background, and economic conditions.[100] There are also issues of heterogeneity that can be difficult to identify: an increase in earnings as a result of the degree versus the student's innate ability and aptitude for the subject they studied and field they entered.[101] [102]

The Federal Reserve Bank of New York has applied this approach in measuring college affordability.[103] Using historical data from college graduates and earnings from 1970 to 2013, researchers calculated the return on a college degree. The measured return was around 15 percent. This wage premium from a college degree has two main caveats. One, the model uses historical trend data and cannot guarantee similar results in the future. Two, the wage premium of a college degree remains high because the opportunity costs of not going to college have decreased. While wages for college graduates have stagnated in recent years, the wages of non-college graduates have decreased. With net price remaining relatively stable during this time, the direct costs, on average, do not have enough of an effect on the total cost of college to outweigh the wage premium of a college degree.

Net Present Value

Net present value (NPV) is a prominent method to compare institutions and measure expected ROI. The U.S. Department of Education and the College Scorecard use this approach. The Scorecard aims to provide consumers with college costs and value in easily digestible formats.[104] This model includes data on five key elements: costs, graduation rate, loan default rate, average amount borrowed, and employment. Others have added to this approach by including factors on the individual stu-

dent, which can help control for aggregate expected outcomes, versus the actual outcome for an individual student.[105] Results indicated that a college's curriculum vitae, STEM orientation, mean faculty salary, and completion rates are strong predictors of the future earnings of alumni.

Another study by the New England Board of Higher Education used a similar approach and a 10-year NPV calculation to measure four-year undergraduate business schools in Massachusetts.[106] By taking an average annual cost and the salary after attending from the College Scorecard, the study calculated a 10-year NPV discounted every year based on an average interest rate of 3 percent. From there, institutions are ranked from highest to lowest 10-year NPV as a relative representation of the value of their degrees.

While this methodology is helpful when comparing institutions and finding the highest value-added colleges, this does not account for a student's ability to pay, or measure a student's unmet need. The Federal Reserve Bank of New York points out, once the full scope of benefits and costs are taken into account, investing in college appears to be a good investment for the average person.[107] However, students are only able to make the investment if they have to ability to afford the upfront costs. Other research has shown that students paying for college, or specifically taking out loans, magnify the risk of noncompetition and are potentially worse off than not attending at all.[108] [109] Since 1970, the burden of college costs has fallen more heavily on low-income students. In recent decades financial aid has shifted to benefit more middle- to high-income earners.[110] College investments are riskier for lower-income students who borrow as their chances of completion are lower.[111] Therefore, an NPV calculation is incomplete without a similar analysis of the student's ability to pay and their unmet need. Unmet need is shown to adversely affect a student's ability to persist and graduate and disproportionately affects lower-income families.[112] [113] Baum argues it is not enough to determine that college is expensive, but to clarify who is in a position to pay for postsecondary education, and how is that changing over time.[114]

Holistic Approach/Metrics Comparison

Net price calculators, the Rule of 10, and ROI methodologies only compare the cost of postsecondary education to a single metric, income. Most models focus on pre-college resources, comparing family and student earnings to the cost of attendance. These methods are comprehensible but still fall short. Baum argues for a student-centric approach that involves a more holistic look at the cost of postsecondary education to other metrics. Any ROI calculation should discuss a student's ability to pay by considering other financial metrics.[115] By comparing the cost of attendance to other costs that affect family budgets, context is given to the rising price of college and helps create a benchmark for affordability. Metrics may include measuring the change in the cost of attendance, the change in the consumer price index (CPI), and housing prices and rent. Measuring these variables and the relationship to the cost of attendance provides a more coherent picture of college affordability over time:

Prices:
- Average tuition and fees by sector and by state
- Average tuition and fees by Carnegie classification within sectors
- Average room and board charges
- Housing and food prices by geographical area
- Textbook prices
- Net prices for students with different characteristics at different types of institutions
- Changes in college prices relative to other goods and services

Earnings:
- Earnings by educational attainment for full-time workers, all workers, and members of the labor force
- Earnings by educational attainment by geographical area and by age
- Average earnings for different levels of educational attainment and the variation in earnings
- Expected earnings incorporating probabilities of completing different types of credentials for students in different circumstances

Other resources:
- Discretionary income
- Net worth by age, income, and other characteristics
- Saving rates
- Inequality of income and net worth

Student debt:
- Percentage of students with education debt and distribution of debt levels for students with different characteristics at different types of institutions
- Loan payments relative to earnings premium

Select Methodology Examples

The following data provide examples of how these methodologies might look in practice. They are meant to aid in understanding and are not guides for students or practitioners to set tuition, aid, or other policies. The examples below involve many assumptions and represent hypothetical situations and outcomes based on the median.

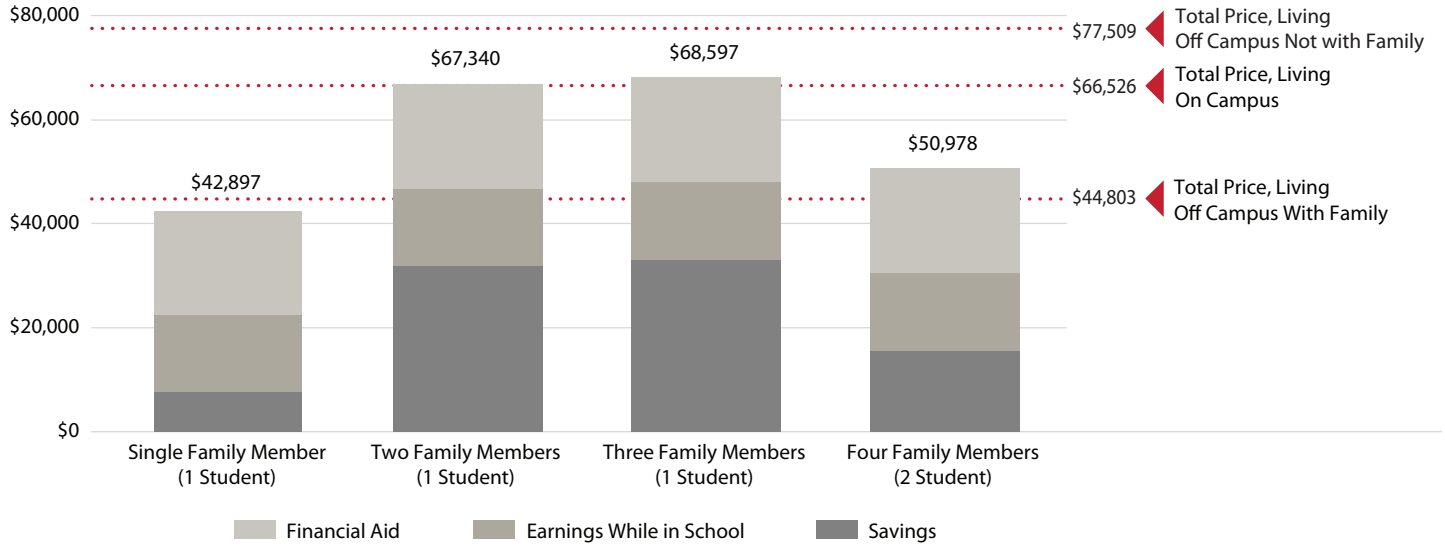
All three methodologies (the Rule of 10, EFC, and NPV) use the following assumptions:

- Median income: The 2016 median household income for families in Utah by household size is from the American Community Survey 2012-2016 5-year estimates.
- Adjusted gross income: Assumes all income is from labor and the standard deduction for 2016 is the only deduction taken.
- Total price: The average weighted total cost of attendance for USHE's four-year institutions for in-state undergraduate students. Data is from the Integrated Postsecondary Education Data System (IPEDS) for the 2016-17 academic year. Single-year data is then multiplied by four to estimate the total four-year cost of attendance for three possible living situations while pursuing postsecondary education:
  - Living on campus
  - Living off campus, not with family
  - Living off campus, with family
- Family size: Assumptions of family size are illustrative of how different students and families measure under each calculation. They are not representative of all students or the entire spectrum of students of families that pursue postsecondary education. The families sizes used here are:
  - Single-family member (one student)
  - Two family members (one student): Assumes the median household income for a two-person household. The result is a high estimate for two-member families, as two-member households can include two working adults. This example is more likely of an adult partnership than a single parent with a dependent child. In this instance, a household closer to the one-person household median income is just as likely.
  - Three family members (one student)
  - Four family members (two students)
- Average aid: The average amount of aid awarded to in-state undergraduate students attending a USHE four-year institution. Data is from IPEDS for the 2016-17 academic year and is multiplied by four to estimate the total four-year aid awarded.
- Students: Assumes students are in-state eligible and enrolling in the first semester of fall of 2016. Students are assumed to be traditional first-time, full-time degree-seeking students completing their programs within four years of study.
- USHE institutions: Institutional data comes from IPEDS and include the following institutions: Dixie State University, Snow College, Southern Utah University, University of Utah, Utah State University, Utah Valley University, and Weber State University.
- Values: All values are referenced or calculated for the 2016 calendar year (U.S. Census Bureau) or the 2016-17 academic year (IPEDS) and are held constant over time.

The Rule of 10

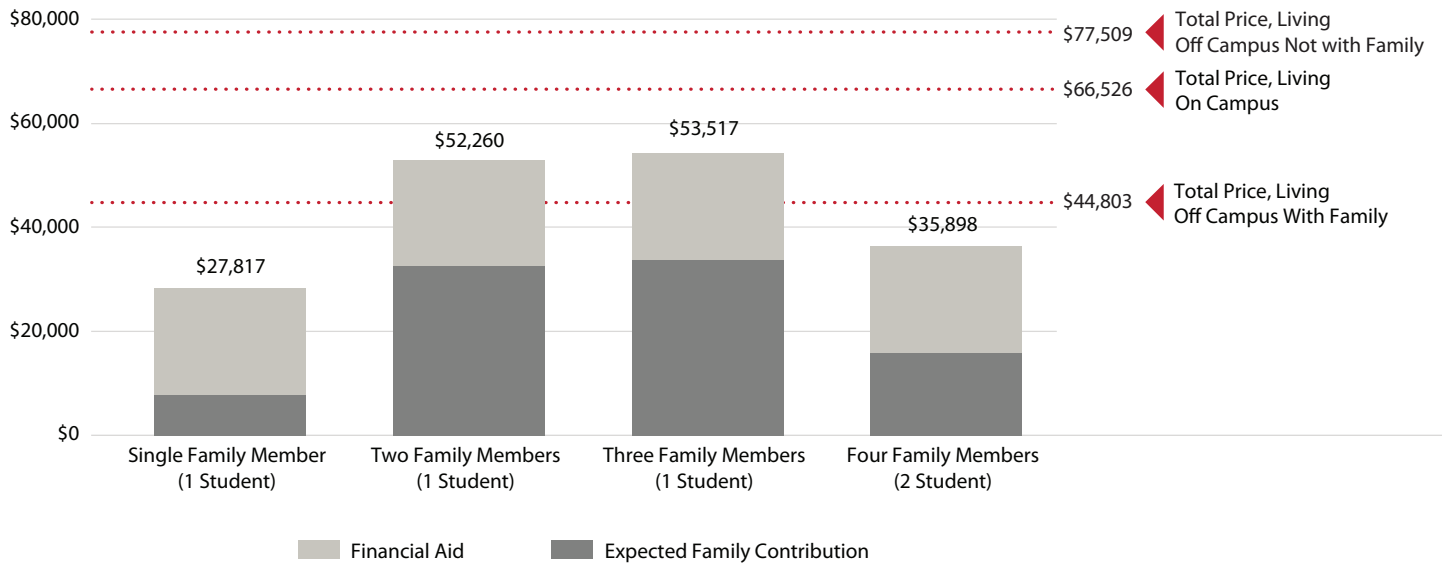
The Rule of 10 is calculated using the assumptions listed above. In all cases, the expectation of what each family can save, earn while enrolled, and the average amount of aid awarded are combined to estimate what a student can reasonably be expected to pay for college. Any difference between the total value from the Rule of 10 (savings plus earnings while enrolled) and average aid is considered unmet need. This gap between the cost of attendance and the EFC plus aid requires funding from supplemental sources (including loans); otherwise, the

Figure 3.1: Unmet Need of Students in Utah, Based on the Rule of 10, Academic Year 2016-17



Source: Kem C. Gardner Policy Institute analysis of the U.S. Census Bureau and the U.S. Department of Education's Integrated Postsecondary Education Data System data.

Figure 3.2: Unmet Need of Students in Utah, Based on the Expected Family Contribution, Academic Year 2016-17



Source: Kem C. Gardner Policy Institute analysis of the U.S. Census Bureau and the U.S. Department of Education's Integrated Postsecondary Education Data System data.

cost could be considered unaffordable. Affordability remains focused on the student, and only they can determine their ability and willingness to pay the gap or not. The results for each family size scenario are shown in Figure 3.1.

Expected Family Contribution

The EFC results are from the College Scoreboard's 2019 EFC calculator.[116] The federal government uses this methodology to calculate a student's EFC from their FAFSA information to determine eligibility for aid. The EFC for each family size example plus the average aid awarded to in-state students results in the estimated amount a family can reasonably be expected to pay for college. Any difference between the total value from the EFC and average aid is considered unmet need. This gap between the cost of attendance and the EFC plus aid needs to be covered from supplemental sources (this can include loans). Otherwise, the cost of a degree outweighs the ability to pay and could be considered unaffordable. Only the student can determine their willingness or ability to pay. The results for each family size scenario are shown in Figure 3.2.

Net Present Value

A return on investment method focuses on post-college results as opposed to pre-college resources. Therefore all scenarios may apply to any student but do not factor in any additional resource constraints or ability to pay. Similarly, there is no inclusion of opportunity costs, wage growth, degree concentration, or non-earnings related costs or benefits. The total price for all three living situations are calculated by taking the weighted average of attendance calculated from IPEDS and subtracting the weighted average aid awarded to calculate the initial investment. The wage premium from a college degree is the difference of the median income of an individual with a high school degree (or equivalent) and the median income of an individual with a Bachelor's degree, both from the 2012-2016 American Community Survey 5-year estimates.

The three scenario calculations are:

- Scenario 1: Assumes the total four-year cost of attendance minus aid is the initial cost. Results use a 10-year return from the initial cost of the degree, minus aid. All 10 years include the wage premium for 10 years from earning a college degree.
- Scenario 2: Assumes the initial cost of the degree is $0. The first four years of the degree are considered a net loss based on the one year cost of attendance each year. The following six years represent the wage premium of the degree for six years post-graduation.
- Scenario 3: Assumes no initial cost, but the calculation is for a 14-year return. The first four years assume a loss of the cost of attendance, and the following 10 years account for the added wage premium as a result of a degree.

The discount rates provide a low, medium, and high bound. The first rate uses the 20-year Treasury bond rate from July 1, 2016 (1.81 percent).[117] Other researchers use this approach, and the rate is considered to be a conservative measure.[118] [119] The second rate is meant to represent a middle bound rate and the interest rate on a Federal Direct Stafford Loan for 2016 (3.76 percent).[120] The final discount rate is the average rate of ROI in the S&P 500 (including dividends) from 1928 to 2016 (11.42 percent).[121]

Table 3.1: Estimated Returns on a College Degree in Utah, Based on Net Present Value, 2016

Living Situation While Enrolled	Scenario 1: 10 Year Timeline, Total Initial Cost	Scenario 2: 10 Year Timeline, Cost Spent During First Four Years	Scenario 3: 14 Year Timeline, Cost Spent During First Four Years
Discount Rate: 1.81% (Low Bound)			
Living On Campus	$95,038	$84,055	$116,760
Living Off Campus Not With Family	$37,426	$26,923	$58,201
Living Off Campus With Family	$87,270	$76,767	$108,045
Discount Rate: 3.76% (Medium Bound)			
Living On Campus	$81,570	$70,587	$103,293
Living Off Campus Not With Family	$28,713	$18,689	$48,537
Living Off Campus With Family	$68,059	$58,035	$87,884
Discount Rate: 11.42% (High Bound)			
Living On Campus	$43,815	$32,832	$65,538
Living Off Campus Not With Family	$6,611	-$1,831	$23,310
Living Off Campus With Family	$22,868	$14,425	$39,567

Source: Kem C. Gardner Policy Institute Analysis of U.S. Census Bureau and IPEDS data.

The results presented in Table 3.1 show the added value of a college degree in each scenario for all three living options. In all cases except for one (Scenario 2, living off campus without family, and a discount rate of 11.42 percent), a college degree is worth more than the value of the investment. The rate of return varies in all instances, and the value placed on that rate of return is a subjective measure that relies on the student to decide if it is worth it. This approach does not measure ability or willingness to pay. Instead, it measures the estimated increase in earnings for obtaining a college degree.

Framing College Affordability

The issue of college affordability is subjective and based on a myriad of factors that are unique to every prospective student. Framing college affordability using a variety of measurable factors provides clarity to the discussion. College affordability is not simply tied to rising tuition and fees or as a ratio of price to income. Rather, measuring the relationship between a student's assets and the cost of college via methodologies used in the Rule of 10 and the EFC provides a baseline for the price a student might be reasonably able to afford. An ROI calculation also provides a sense of the expected lifetime value of a degree. However, these methodologies do not address an individual's ability to pay for postsecondary education. A holistic approach to address cost, ability to pay, and the expected value of a college degree is a more accurate measure. The complexity of an individual's circumstance makes this task difficult to quantify. An aggregate measure cannot reasonably capture every student's unique situation. As a result, the current methodologies discussed here provide a baseline reference to frame policy discussions around college affordability.

Endnotes

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