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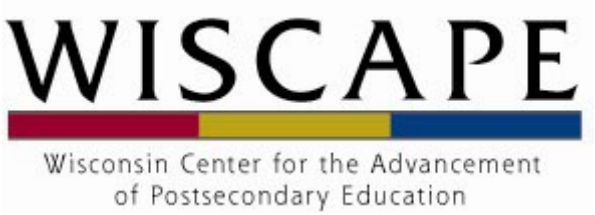

A Simple Unifying Measure of State Support for Higher Education

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Abstract

Conflicting measures of state support for higher education create confusion and misunderstanding that convolute debates about states' postsecondary education funding. The use of multiple measures is largely unnecessary, though. A simple single measure is constructed that adequately quantifies both states' postsecondary need and states' ability to pay. Specifically, this study proposes measuring state support for higher education as state postsecondary funding per high school graduate over the previous four years per dollar of per capita income.

About the Authors

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Introduction

Confusion and misunderstanding about basic facts is perhaps one of the surest ways to undermine useful public discourse. Mutual understanding and compromise are difficult in a debate about apples when one side is thinking in terms of oranges and the other side is thinking in terms of bananas. This is the situation concerning the funding of public higher education.

The level of state and local government support for higher education is hardly a difficult concept, yet there is considerable confusion about it. Numerous studies show that nationwide state funding for higher education has fallen noticeably in recent years (e.g., Yudof, 2002; Selingo, 2003; Kane and Orszag, 2003 and 2004; McPherson and Schapiro, 2003; Zumeta, 2004; Mortenson, 2004; Jenny and Arbak, 2004; Kane et al., 2005; Lyall and Sell, 2006; Blose et al., 2006; and Archibald and Feldman, 2006). Other studies show that state funding for higher education has risen in recent years (e. g., Arnone, 2002; Thelin, 2004; Palmer, 2005; and National Association of State Budget Officers, 2005). Indeed, a section heading in a prominent 2002 report begins "state financial support for higher education has increased..." (National Center for Public Policy and Higher Education, 2002), while a bold caption in a report from the same organization less than a year later begins "as states continue to cut higher education appropriations…" (Trombley, 2003).

Longanecker (2006) put the problem in stark relief. Typical measures are first used to show how states have reduced their support for public higher education in recent years. Similarly typical measures are then used to show how states have increased their support for public higher education in recent years (State Higher Education Executive

Officers, 2004 also stress this inconsistency, although perhaps not as provocatively as in Longanecker). This apparent inconsistency fosters misunderstanding, fuels disagreement, and creates confusion among those trying to understand the causes and consequences of changes in state support for higher education.

The reason for the inconsistency is that there is no widely accepted standard for the concept 'state funding for higher education'. There are multiple seemingly reasonable measures of state support for higher education, and these measures do not behave in the same way. Although it can be informative to examine issues from different angles, the public policy dialogue sorely needs one, simple, and credible measure of state support for higher education that can be used to make valid interstate and intertemporal comparisons. This study attempts to construct and report such a measure.

Context

Measurement of state support for higher education began with the work of Chambers (1961) for the National Association of State Universities and Land Grant Colleges. This work became the ongoing influential *Grapevine* reports from Illinois State University. The initial work, however, only collected and presented the dollar amounts of state appropriations for higher education, and thus did not present measurements of state funding for postsecondary education that were comparable across states and time.

The thorough work of Halstead (1974) was perhaps the most significant advance in the literature on state support for higher education. This led to a series of annual reports beginning in 1978 sponsored by State Higher Education Executive Officers

(hereafter SHEEO). These reports present "a model of seven independent factors plus eight derived measurements which together represent the principal state conditions and financial actions underlying and governing financial support of public higher education" (Halstead, 1987).

Significant refinements in this literature occurred more recently with SHEEO's ongoing *State Higher Education Finance* project (SHEEO, 2004). SHEEO has continued Halstead's effort to create a full-bodied picture of public higher education finance, and thus presents several measures of state support. The Halstead-SHEEO framework was not intended to measure just the metric 'state support for higher education'.

Apples, Oranges, and Bananas: A Digression on Measures and Metrics

A measure is a process by which a number is assigned to some phenomenon. The number that is assigned is a measurement. The interpretation of that measurement is a metric. The problem in the public discourse on the funding of higher education is that more than one measure is being used for the metric 'state support for higher education'. Generally, there is always more than one measure for a metric. But not all measures are equally good. Moreover, the usefulness of a measure largely depends on the extent to which everyone uses it. A measure is like a language; it is useful to the extent that everyone understands it.

For example, the weight (i.e., a metric) of an apple can be judged using a scale yielding a measure in ounces or grams. The weight can also be judged by perception from holding the apple in one's hand. The hand-based measure obviously has a lesser degree of accuracy and precision than one of the scale-based measures. Although grams

may be a more mathematically elegant measure than ounces, it is the less useful measure if everyone understands ounces. Thus, the choice of an ideal measure generally involves several considerations.

Measure for Measure: Measurement Desiderata

In general, a good measure needs to be unbiased, accurate, and as precise and simple as is reasonably feasible. A useful measure has the additional requirement of being readily accepted as valid, which clearly depends on the first four criteria. A measure that best simultaneously meets all five criteria may become a standard. The creation of a standard for the metric 'state support for higher education' is the ultimate goal of this project. The first four criteria above are now put in the specific context of state support for higher education.

Accurate

There are two issues about accuracy: the measure should ensure comparability across states and over time, and the measure should apply as directly as possible to the metric. The first issue creates the obvious need to normalize state appropriations for higher education. Appropriations cannot be meaningfully compared across states and times with vastly different populations and tax bases. Thus, all reasonable measures of state support put postsecondary appropriations relative to a normalizing variable, such as state population, income, number of students, etc. Indeed, the availability of multiple seemingly reasonable normalizing variables is the main reason why there are multiple frequently used measures of state support for higher education.

The second issue about accuracy arises because there are different ways of looking at an issue (this point is stressed in SHEEO, 2004). To minimize confusion and misunderstanding, though, the measure needs to correspond as closely as possible to the metric. Moreover, a measure that does not correspond closely to the metric may vary for reasons unrelated to the metric concept. For example, the percentage of public postsecondary revenues coming from state government is a useful measure to examine within the broad context of state funding for higher education, but it does not most directly coincide with the metric 'state support for higher education'. And, variation in this measure can arise from reasons unrelated to the concept of state support. For instance, if a state institution receives a large private donation, the measure indicates lower state support although this is clearly unrelated to state funding. Similarly, the measure public postsecondary spending as a percentage of total state and local government spending is sometimes used to indicate state support for higher education, but this measure can change for reasons unrelated to state higher education funding.

Precise

Although there are certainly measurement problems in the source data for measures of state support for postsecondary education, these problems are not especially acute. As economic data go, the measurement problems from reporting errors are typical. There is, however, one potential source of measurement error that may be avoidable. Some measures require adjustments for differences in price levels across time and states, while others do not. Moreover, there are problems with using price indices. There are only incomplete data on real interstate cost-of-living differences. Moreover, changes in

price indices yield biased measures of real changes in the cost of living over time (see, e.g., Moulton, 1996; and Boskin et al. 1998).

Thus, all else equal, measures of state support for higher education not requiring the use of a price index are preferable. Such measures are achieved when constructed as a ratio of dollar-unit variables, such as higher education funding relative to income. Differences in price levels are reflected in both the numerator and denominator and hence are offsetting, thus the measure is unaffected by real differences in the cost of living.

Unbiased

There are two potential bias problems in the measurement of state support for higher education; one is technical in nature, and one is ethical in nature. That is, potentially there could be bias in a statistical sense, and/or there could be bias in the sense of not being objective and impartial.

The technical bias can arise because some measures may be subject to endogeneity bias. That is, the normalizing variable may endogenously depend on state higher education funding. Hence, the measure may be a biased indicator of relative state support for postsecondary education. This issue is discussed in more detail shortly.

The ethical bias can arise from having, or the perception of having, vested interests in the level of state appropriations for higher education. Senior administrators in public postsecondary education clearly have vested interests in state appropriations for their institutions (although this is not an accusation that their actions are necessarily based on these vested interests). Similarly, there are various groups that desire higher or lower levels of state postsecondary education funding. Thus, the choice of measure may

be potentially slanted toward demonstrating a preconceived view. Moreover, perceptions of such spinning of the evidence could be more important than the reality.

Given the current relatively frosty relationship between public postsecondary institutions and state governments (see Selingo, 2003; Longanecker, 2004; and Lyall and Sell, 2006), minimizing perceptions of slanted measurement is especially important. Any hint of a self-serving measure may significantly undermine the goal of a standard measure of state support for higher education. To be more specific, the measure should not risk being perceived as centered on public postsecondary education institutions.

Simple

What makes a measure useful is that it is readily understood. Occam's razor is particularly relevant in regard to measures. Take the quotidian metric 'weight' for example. Ounces are determined by the interaction of mass and gravity, but one does not need to recall these two physical phenomena in order to effectively use this metric. Similarly, a useful measure of state support for higher education needs to be sufficiently simple so as to be informative without requiring repeated reference to its components. That is, the measure of state support needs to be readily interpretable.

Occam's razor is especially important in public policy discourse. It is essential that non-experts with limited time for the issue can understand the measure without special effort. Moreover, complexity can interact with perceptions of bias. Complicated measures may create doubts about validity. Thus, simplicity and transparency are crucial for common use of a single measure.

In a related vein, a measure of state support for higher education that is easy to replicate and verify is much preferable to one that requires a sophisticated analysis to produce. To be more specific, a measure derived using an econometric analysis might be more accurate, precise, and/or unbiased than, say, a simple ratio of readily available data, but it would probably have much less chance of widespread use and acceptance.

Bases for Comparison

As mentioned above, state funding for higher education cannot be put into meaningful context without some basis for comparison. One cannot judge state appropriations for higher education unless one has something with which to compare. For example, $5 million is a lot of money if it is spread over a thousand students, but it is almost trivial if spread over a million students. The main underlying reason for the common use of different measures of state support for higher education is that there are multiple seemingly reasonable bases for comparison. Most of these bases, however, are based on one of two principles guiding government expenditures. That is, there are generally two principles of government spending that dictate the choice of the normalizing variable to put postsecondary education appropriations into perspective: 'ability to pay' and 'need'. This study, unlike previous work on measuring state support for higher education, proposes a simple measure that incorporates both principles of government expenditure policy.

Ability to Pay

Spending on most broad categories of goods and services increases as income increases, and this includes government services. Thus, it makes sense to use income, i.e., 'ability to pay', as a basis for comparison. Indeed, this is one of the most commonly used bases for interstate and intertemporal comparison for government expenditures. Letting F_{kt} denote annual public postsecondary education funding in state k in year t and I_{kt} denote state personal income, a common measure of the metric 'state support for higher education', abbreviated as S_{kt}, is

$$S_{kt} = \frac{F_{kt}}{I_{kt}}. \qquad (1)$$

The implicit assumption in this frequently used measure is that ability to pay for public higher education is proportional to income. We are not aware of any deviation from this assumption of a simple linear relationship between ability to pay and income.

There are other ability-to-pay measures, though (they are also sometimes referred to as 'effort' measures). Higher education funding as a percentage of total state and local government revenues (or spending) could be interpreted as an ability-to-pay measure. Postsecondary education funding per capita could also be considered an ability-to-pay measure. Income, however, is the most frequently used basis. State personal income is presumably the best measure of ability to pay. This is consistent with practically every tax system in the developed world. Taxes are generally based on income (and/or consumption which depends on income).

Need

Perhaps a more important driver of government spending is 'need'. Indeed, this presumption underlies the literature on 'fiscal need' (some examples are Rafuse, 1990; Tannenwald, 2002; and Tannenwald and Turner, 2004). The most obvious creator of need for state higher education funding is the number of students in public postsecondary education. Actually, this need is typically assumed to depend on the number of full-time-equivalent (FTE) students, abbreviated E_{kt}. Thus, another common measure of the metric 'state support for higher education' is

$$S_{kt} = \frac{F_{kt}}{E_{kt}}. \qquad (2)$$

In this case, F_{kt} requires a price index to adjust for intertemporal and interstate differences in the real cost of living.

The implicit assumption in this frequently used measure is that need for public higher education is proportional to FTE enrollment. Although public higher education need is also derived from public service and research activities, the primary role of public higher education is educating students. Moreover, needs derived from service and research are likely to be roughly proportional to the need derived from students, particularly at the state level (as opposed to the institution level). Thus, the assumption that public higher education need is proportional to FTE enrollment seems reasonable.

Equation (2) also imposes the implicit assumption that all higher education enrollment creates the same need for state support. That is, the need for public funding is the same for community college students and graduate students. This assumption is

problematic because there is clear evidence that per-student cost rises with the education level. One can try to account for this, but it adds considerable complexity to the measure and may risk the perception of bias.[1]

Endogeneity of Need

Unlike in primary and secondary education, the number of FTE students in public higher education in a state may be significantly affected by the state's public support for higher education. State postsecondary education support is likely to affect the number of students that enroll in college, the proportion that persist in college, the proportion that attend college full time, the proportion that attend public institutions, and the proportion that go to college in the state. Hence, there are compelling reasons to suspect that FTE enrollment in public postsecondary education in a state endogenously depends on the state's support for postsecondary education. Thus, E_{kt} endogenously depends on S_{kt}, and equation (2) is a biased measure. In other words, using public FTE college students as the basis for comparison creates a statistically biased measure of state support for higher education because the indicator of need is not independent of support.

[1] Halstead (1987) and State Higher Education Executive Officers (2004) attempt to account for disproportionate interstate (but not intertemporal) differences in public FTE enrollment levels (i.e., proportions that are in two-year, four-year, and graduate institutions) and in public higher education research needs by controlling for the differences in cost per FTE student at different Carnegie Classification institutions. This clearly adds a significant layer of complexity to the measure. It also to some extent centers the measure on education institutions instead of students. Moreover, it is not clear that disproportionate interstate differences in enrollment levels and research are due to differences in 'need' as opposed to different outcomes and/or choices. To illustrate, consider a state that has a disproportionately high number of graduate students and relatively high spending on university research per FTE student. Does this indicate that the state's higher education institutions are relatively geared toward research and graduate enrollment (i.e., outcomes)? Does this indicate that the people in the state have relatively high preferences for research and graduate studies (i.e., choices)? Or does it demonstrate that the state has a higher 'need' for state support for higher education? The latter possibility seems the hardest to defend.

To be more specific, E_{kt} is a positive function of S_{kt}, thus equation (2) is actually

$$S_{kt} = \frac{F_{kt}}{E_{kt}(S_{kt})}. \qquad (3)$$

Differentiating equation (3) with respect to F_{kt} and rearranging yields

$$\%\Delta S_{kt} \cong (1 + \%\Delta E_{kt} / \%\Delta S_{kt})^{-1} \times \%\Delta F_{kt}. \qquad (4)$$

If the measure of state support for higher education were unbiased, the coefficient on $\%\Delta F_{kt}$ would be one (i.e., $\%\Delta S_{kt} \cong \%\Delta F_{kt}$). That is, an unbiased measure of state support for higher education is proportionate to state appropriations for higher education. Equation (4), however, demonstrates that the coefficient is less than one by the extent that E_{kt} depends on S_{kt}. For example, if a 10 percent increase in funding induces a 2 percent increase in FTE enrollment, then the measure of state support rises by only 8 percent. The need-based measure of state support for higher education is less than proportionate to state appropriations for higher education. It is biased downward by the extent that the public FTE enrollment is affected by state support.

Indeed, it is conceivable, although perhaps highly improbable, that state funding for higher education could increase while leaving the typical need-based measure of state support unchanged. Equation (4) shows that this would occur if $\%\Delta E_{kt} / \%\Delta S_{kt} = 1$: that is, if FTE enrollment changed proportionately with state funding. This result is conceivable if an increase in state postsecondary appropriations were particularly well targeted toward students on the margin of college attendance. A 2 percent increase in

funding leading to a 2 percent increase in FTE enrollment is not out of the realm of possibility for a well-targeted policy.

More generally, the better that a state uses public support for higher education to get students into college, ceteris paribus, the lower the value of the typical need-based measure of state support for higher education. Thus, paradoxically, it is possible that relatively low support according to the FTE-enrollment measure may be more of an indication of relatively high effectiveness in getting students into college than relatively low real state support for higher education.

Moreover, the endogeneity bias creates a policy problem in the ability to forecast funding need. The need for state funding for higher education cannot accurately be forecast without taking into account how state funding will affect enrollment. In other words, the higher education funding need depends on the higher education funding!

Another problem arising from the use of public FTE enrollment as the basis for comparison is that it encourages one to use state appropriations to public postsecondary institutions, as opposed to all state appropriations for postsecondary education, for F_{kt} in the measure S_{kt}. It makes sense to compare FTE students in public institutions to funding for public institutions. But not all state support for higher education goes through public institutions (see Zumeta, 2001). For example, states generally provide some financial aid to students attending private colleges. Thus, some state appropriations for higher education are omitted from the measure of state support. This practice risks the perception of bias. This type of measure may be perceived as being centered on public colleges, whereas the real need is derived from college students.

A Simple Unifying Measure

A single measure can be constructed that accounts for both principles guiding government expenditures, while also avoiding the problem of endogeneity bias. That is, an unbiased need index can be combined with an ability-to-pay index to form a single, simple, accurate, precise, and unbiased measure of state support for higher education.

A reasonable way to account for a higher education need without endogeneity bias is to use 'potential' college students as the basis for comparison instead of actual college students. The proxy that we use for a state's potential college students is the state's number of high school graduates in the preceding four years. The number of high school graduates in state k in year s is denoted G_{ks}. Thus, the need measure of state support for higher education becomes

$$S_{kt} = \frac{F_{kt}}{\sum_{s=t-4}^{t-1} G_{ks}}. \qquad (5)$$

The assumption imbedded in this measure is that higher education need is driven by 'traditional' college students, that is, those progressing straight from high school to college. Obviously there is also a higher education need from older students. But most college students still follow the traditional route. Recent data from the National Center for Education Statistics (NCES) indicate that about two thirds of college freshmen enroll directly out of high school. Moreover, if the need derived from potential non-traditional enrollment is proportional to the need derived from potential traditional enrollment, then equation (5) is still an unbiased measure of the total need for state support.

Similarly, equation (5) implicitly assumes that higher education need is driven by baccalaureate-seeking undergraduates. But there is also an important need from graduate and professional education. The vast majority of college students are undergraduates, however. Recent NCES data indicate that about six out of every seven college students are undergraduates. The measure also emphasizes four-year programs as opposed to two-year programs. But if the post-baccalaureate and pre-baccalaureate education needs are proportional to the baccalaureate education need, then, again, equation (5) is an unbiased measure of the need for state support. However, to the extent that post-baccalaureate need has been growing over time, and to the extent that it costs more than baccalaureate education, the measure understates changes in higher education need over time.

In addition, equation (5) implicitly assumes that potential college students are regular high school graduates, as opposed to recipients of general equivalency diplomas (GEDs). Again, as long as college students from the GED route are not disproportionate across states and time, then the need-based measure is not biased. There is also the perhaps less obvious implicit assumption in the measure that a state's high school graduates at a point in time are not disproportionately prepared to enter and stay in college in the state.

The need-based measure also assumes that a state's postsecondary education need depends on potential in-state college students. This is certainly consistent with the long history of states' tuition policies that favor in-state residents.

Finally, equation (5) implicitly imposes a constant relationship between states' potential college students and their need to publicly support higher education. In other words, according to the measure, states need to have a steady proportion of their young

people acquire college educations. One could reasonably argue that the need for higher education has been increasing over time. That is, states should need to have increasing college attainment. Moreover, one could try to quantify this increasing need and adjust equation (5) accordingly. But such an adjustment would not be simple, and it could be perceived as being slanted toward the view in favor of greater state funding for public higher education. Thus, the temptation to adjust for states' increasing need for college education is resisted. It should be emphasized, however, that equation (5) understates the growth of the real higher education need. To the extent that states' higher education need per potential college student has been growing, over time equation (5) is an increasingly conservative (i.e., upwardly biased) indicator of state support for higher education.

Thus, in summary, states' number of potential traditional, four-year, in-state college students is conservatively assumed to be proportional to their total need for public support for higher education (i.e., the sum of the needs from research, public service, non-traditional students, graduate education, etc.).

The standard cross-state indicator of ability to pay is state per capita income, denoted i_{kt}. Dividing the need-based indicator in equation (5) by this ability-to-pay indicator yields our measure of the metric 'state support for higher education':[2]

$$S_{kt} = \frac{F_{kt}}{i_{kt} \sum_{s=t-4}^{t-1} G_{ks}}. \qquad (6)$$

[2] Per capita income is used to account for ability to pay rather than total income as in equation (1) because equation (5) is already normalized to be comparable across states. Thus, the ability-to-pay indicator must also be comparable across states. Lieberman (1998) also uses this adjustment in measuring state support for elementary and secondary education.

State support for higher education is measured by state funding for higher education per high school graduate in the previous four years (i.e., potential college students) adjusted for relative income per capita. Alternatively, one could interpret the measure as state funding for higher education as a percentage of state income adjusted for potential college students as a proportion of the population. That is, letting N_{kt} denote state population, equation (6) can be rewritten as

$$S_{kt} = \frac{F_{kt}}{I_{kt}} \times \frac{N_{kt}}{\sum_{s=t-4}^{t-1} G_{ks}}. \qquad (7)$$

In other words, the index of state support for higher education can be thought of as an unbiased need measure relative to ability to pay, or as an ability-to-pay measure relative to an unbiased indicator of need.

Although equation (6) [or (7)] is a unit-free index (dollars and numbers of people are in both the numerator and denominator and hence cancel out), the index values are comparable. That is, the proposed index of state support for higher education is a cardinal measure. Thus, a value of 0.55, for example, can legitimately be interpreted as 10 percent greater than an index value of 0.50.

Equation (6) is not the simplest possible measure of state support, but it is hardly complex. Moreover, the measure is easy to replicate and verify because it is simply a ratio of three pieces of readily available data. The measure is accurate; that is, it is only affected by state funding for higher education, states' higher education need (potential college students), and states' relative ability to pay (per capita income). It is not affected by extraneous factors such as other types of state and local spending, or other sources of

public postsecondary revenues. This measure also has the advantage of automatically controlling for intertemporal and interstate cost-of-living differences without having to apply to an imprecise and biased price index. In addition, the proposed unifying measure is statistically unbiased. And finally, the proposed measure should not risk being perceived as slanted toward a particular outcome. The measure is based on the two standard principles guiding government spending. There is certainly scope to argue with the standard assumptions that 'ability to pay' is linear with income and 'need' is linear with potential enrollment (moreover, one could use a regression analysis to try to estimate possible nonlinear relationships between funding and income and between funding and potential enrollment), but deviations from these standard assumptions would not leave a simple, readily interpretable, and transparent measure. There is also scope to argue with the assumption that total higher education need is proportional to potential traditional, four-year, in-state college students. But deviations from this assumption would not yield an unbiased, accurate, and simple measure.

It should be kept in mind, though, that the proposed single measure of state support for higher education does not identify interstate differences and intertemporal changes in need per potential college student (high school graduates in the previous four years). The measure imposes a constant need per potential college student. It does not allow for greater need for state support in states with relatively high college-attendance rates and/or relatively high proportions of graduate students. The measure also does not identify any growth in higher education need over time. However, this does not imply any value judgment that state support per potential student should be constant over time and across states. Interstate differences and changes over time in need per potential

student are simply not included in the measure of state support for higher education. Variation in need per potential student is a policy decision. The measure of state support for higher education appropriately should not impose any policy prescriptions.[3]

Another way of summarizing this issue is that the proposed index is consistent with constant college attainment per young person in each state in each year. To the extent that a state desires greater college attainment per person, the state (arguably) needs to increase its public support for higher education.

Source Data

Equation (6) indicates that the proposed single measure of state support for higher equation requires three pieces of information in each state in each year: public funding for higher education, per capita income, and the number of high school graduates in the preceding four years.

State funding for higher education is from SHEEO's *State Higher Education Finance* project.[4] Their data date back to FY 1980. In an effort to try to avoid potential perceptions of bias, their broadest measure of state appropriations for higher education (their 'Gross State Support' plus 'Local Tax Appropriations') is used. This measure

[3] As a practical matter, to adequately incorporate intertemporal changes in need per potential student would probably require an elaborate econometric analysis. Simplicity, transparency, and replicate-ability would be sacrificed. In addition, quantifying growth in need per potential student would require continual modification of the measurements as new information becomes available.

[4] The Census Bureau Governments Division has information on public higher education, but their data are expenditures, not revenues. Charges (i.e., tuition, fees, and revenues from auxiliary activities) can be removed from these expenditures, but this still leaves some expenditures funded through gifts and endowment revenues. Thus, it is not appropriate to use the Census Bureau data to measure state support. The National Association of State Budget Officers collects data on public funding for higher education, but their data are not collected consistently across states (e.g., some states include tuition and fees in their reporting of state funding). Data on public funding for higher education is also collected in Illinois State University's *Grapevine* project, but their data are not as comprehensive as SHEEO's (e.g., local government funding, among others, is not included).

includes all state and local government appropriations for higher education except for capital construction and debt retirement (these figures are not available). No deductions are made here for specific research, agricultural, and medical appropriations, financial aid to students attending private and/or out-of-state institutions, etc.

Data on personal income per capita are available from the Bureau of Economic Analysis (although they use population numbers from the Census Bureau). To align their calendar-year data with the fiscal-year data on appropriations and academic-year data on high school graduates, average income over the two relevant calendar years is used.

Data on states' high school graduates are available from various years of the NCES's *Digest of Education Statistics*. Unfortunately, data on graduates from private high schools are incomplete. There is an 11-year gap in the estimates of private high school graduates from 1981 through 1991, followed by a two-year gap in 1993 and 1994, and single instances of missing information in even years since 1996. Thus, missing observations are imputed using interpolation. Given that slightly less than 10 percent of total high school graduates have been from private high schools since academic year 1976, and that this proportion has been steady, the measurement error from this interpolation is very unlikely to be important. Moreover, summing four years of high school graduates smoothes some of the measurement error.

Measurements of State Support for Higher Education

Table 1 presents the measurements resulting from application of the index of state support for higher education shown in equation (6). Table 1 shows the measurements for

each state in fiscal years 1980, 1985, 1990, 1995, 2000, and 2005.[5] Results for the intervening years are given in Appendix Tables A1 – A5. The averages over the 26-year period are presented in Table 2 along with the coefficients of variation (a standardized measure of volatility). The index numbers lie between zero and one, although the only theoretical restriction is that the measurements are greater than zero. The numbers being less than one is simply a coincidence and has no special significance. State support for higher education is measured by state postsecondary funding per high school graduate over the previous four years per dollar of per capita income, and this ratio is simply less than one. The mean national value in FY 2005 of 0.185 occurs because state funding per potential college student ($6,241) was just under one fifth of per capita income ($33,793).

The national time trend of state support for higher education is illustrated in Figure 1. National state support for higher education was essentially constant between 1980 and 1984 (the average annual growth rate was 0.25 percent). It grew rapidly between 1984 and 1987 (5.71 percent per year). State support for higher education grew slowly between 1987 and 1995 (1.24 percent annually), although there was a noticeable dip in FY 1992 and 1993. The national index was then essentially constant from 1995 through 2002 (-0.19 percent per year). From 2002 through 2005 there was a strong contraction in national state support for higher education (-4.19 percent annually). This century thus far has not been kind for potential college students; the national index of state support for higher education fell by 13.87 percent from its high-water mark in FY 2000 to FY 2005.

[5] The values for FY 2005 are preliminary estimates because data on high school graduates are currently available only through 2003. Numbers of graduates in 2004 was forecast using a ten-year linear regression.

Figure 2 shows the national time trends in the three components of the index of state support for higher education: state and local government funding for higher education, per capita income, and high school graduates in the previous four years. To make the numbers comparable, the variables are normalized to their 1980 values. Funding and income are adjusted for inflation. From FY 1980 to 2005 growth in state funding for higher education more than matched growth in ability to pay (per capita income), although funding growth was considerably more volatile than per capita income growth. The number of potential college students shrank steadily from 1980 until mid 1990s, but increased steadily since 1995 (keeping in mind that public support need per high school graduate is kept constant).

Most of the growth in the national measure of state support for higher education from the mid 1980s through the mid 1990s was due to the decrease in the number of high school graduates. Indeed, the modest national growth in state support between 1987 and 1995 (1.24 percent annually) did not keep up with the growth in FTE enrollment (1.66 percent annually). From 1980 to 2005 FTE enrollment as a fraction of high school graduates in the previous four years grew from 55.75 percent to 87.53 percent. This trend suggests the extent that public higher education need per potential college student is growing, and hence the extent that the proposed index of state support for higher education is increasingly conservative over time.

Figure 3 illustrates the average interstate differences in state support for higher education. Figure 3 shows that the most western and southern states had relatively high state support for higher education, while most northeastern states (particularly New England states) had relatively low support. The top states in state support for

postsecondary education from 1980 through 2005 were New Mexico, Wyoming, Alaska, North Carolina, Arizona, Mississippi, and Alabama. The bottom states were New Hampshire, Vermont, Massachusetts, Connecticut, Pennsylvania, New Jersey, and Maine. Figure 3 also illustrates the surprisingly large magnitude of the differences in public support for higher education across states. New Mexico's average level of state support for higher education was 5.53 times as large as New Hampshire's.

Figure 4 reveals quite mixed groups of states with increasing or decreasing state support for higher education over the 1980-2005 period. About the only discernable pattern is that many of the states with noticeable growth in state support were southern states. There generally appears to be a weak negative relationship between states' index values in 1980 and subsequent rates of change in their index values (the correlation coefficient is -0.129, but it is not statistically different from zero). That is, states starting with relatively high and low levels of state support for higher education generally moved slightly toward the national average.

Table 3 compares the proposed measure to some of the frequently used measures of the metric 'state support for higher education'. This table shows the national averages of these measures in 1980 and 2005. It also shows how the states rank in these various measures in these years. The comparison measures are: the typical ability-to-pay measure shown in equation (1), funding as a percentage of income (which is often expressed as funding per $1,000 of income); the typical (biased) need measure shown in equation (2), funding per FTE student (data on FTE enrollment are from various years of the National Center for Education Statistics' *Digest of Education Statistics*); and funding

per capita, which is a typical measure but does not correspond particularly well to either principle of government spending.

Table 3 shows that the use of several seemingly reasonable measures of state support for higher education can lead to conflicting conclusions. The proposed unified measure indicates that state support rose by 12.20 percent between 1980 and 2005. Two of the three typically used measures also indicate that state support increased over this period. Real funding per FTE student rose by 20.18 percent, and real funding per capita increased by 32.63 percent. The third typical measure, however, indicates that state support fell. Funding relative to income decreased by 19.22 percent. This occurs despite using completely consistent numbers for state postsecondary education funding. Moreover, although the interstate rankings using the different typical measures are roughly consistent for many of the states, for numerous states the rankings are dramatically different depending on the choice of measure. The most striking example is probably Connecticut. In 1980 and 2005, Connecticut was respectively second and sixth from the bottom in state support according to the ability-to-pay measure, but third and fourth from the top four according to the usual need-based measure. Thus, one could reach completely different conclusions depending on which measure is emphasized. Notable measurement contradictions are also observed in Arizona, Maine, Massachusetts, Mississippi, Nevada, New Jersey, New York, North Dakota, Utah, and West Virginia.

Quantifying the Effects of State Support for Higher Education

There is surprisingly little research quantifying the effects of state support for higher education. This is starting to change, however, presumably as a result of recent

increasing emphasis on greater accountability in public higher education [examples in this new research area are Ryan (2004), Kelly and Jones (2005), Blose et al. (2006), Bound and Turner (2006), and Zhang (2006)]. One important problem facing this emerging line of research is the lack of a standard measure of state support for higher education. Moreover, the typically used measures have the flaws discussed earlier such as bias and/or inaccuracy, as well as not accounting for both principles of government expenditure. Thus, the proposed unified index of state support should have significant value in higher education research in addition to its direct value in informing dialogue on state policy toward higher education.

An initial examination of the relationship between higher education outcomes and the proposed measure suggests that state support for higher education does indeed matter. That is, higher education outcomes are strongly correlated with state support.

Arguably the most important higher education outcome is college enrollment. In recent years, however, as there has been an increasing emphasis on improving accountability in higher education, the focus has increasingly been on degree attainment rather than enrollment. There is considerable evidence, though, that it is time spent in education, as opposed to necessarily earning degrees, that drives labor-market outcomes such as higher earnings, lower unemployment, etc.[6] Thus, it is appropriate to emphasize students being in college. Figure 5 plots the relationship between states' college enrollment rates and their levels of public support for higher education. The 'enrollment rate' in this figure is FTE enrollment in public higher education institutions relative to

[6] This is the issue of whether education produces human capital or is a signaling/screening mechanism. Although there is some evidence that obtaining degrees has labor-market effects independent of years in college, the evidence that it is time spent in education that matters is more compelling. On this issue see Groot and Oosterbeek (1994), and Chevalier et al. (2004).

potential college students (high school graduates in the preceding four years), $E_{kt} / \sum_{s=t-4}^{t-1} G_{ks}$. That is, to be comparable across states and time, actual enrollment levels are relative to their potential enrollment levels. This ratio can be greater than 100% because graduate students are included in the FTE enrollment figure, and because some states are net attracters of college students from other states and abroad.

Figure 5 reveals a strong positive correlation between college attendance in a state and the level of state support for higher education. The correlation coefficient between these two variables is 0.707. Moreover, the simple univariate regression line shown in the figure has a R^2 value of 0.499 – evidently half of the interstate variation in college enrollment rates is explained by the single variable state support for higher education. This strong correlation suggests that state support for higher education has a dramatic impact on college attendance in the state. This correlation also suggests the potential importance of the endogeneity bias discussed earlier (i.e., the typical need-based measure of state support is biased because enrollment endogenously depends on state support).

The correlation shown in Figure 5 should not be oversold, though. Correlation is not causation. It may be the case that the level of state funding for higher education depends on the level of enrollment (and/or the level of potential college students). Indeed, this notion underlies the 'need' principle of government spending. That is, the implicit normative assumption in a need-based measure is that government expenditure should depend on the need. Thus, it is not clear what is causing what in Figure 5.[7] On

[7] Moreover, errors in the measurements of the numbers of states' high school graduates in the previous fours years can upwardly bias the observed correlation. The number of high school graduates in the previous four years is in the denominator of both variables in Figure 5. Thus, measurement error in the number of high school graduates can create some of the observed positive correlation.

the other hand, presumably the reason that state funding depends on the need is that the funding does something to meet the need. Otherwise, public funding for higher education is just a redistribution program to benefit college students and their families (although perhaps unintentionally). In any event, the strength of the correlation between the state support measure and college enrollment is certainly suggestive that state support for higher education matters. Testing this conjecture and estimating the size of the causal effect is a subject for future research.

Figure 6 shows the relationship between states' college degree rates and their average levels of public support for higher education during the preceding four years. The 'degree rate' in this chart is the states' level-weighted degrees from public institutions relative to their potential college graduates (i.e., states' high school graduates four years earlier). All public college degrees are counted in this measure, but they are level weighted (interstate data on degrees back to 1985 are derived from the Integrated Postsecondary Education Data System). Level weighting is necessary because different degrees require different numbers of years to complete and have different labor-market payoffs from those years. A simple weighting scheme is used: Associate's and Master's degrees are counted as half of Bachelor's, Professional, and Doctoral degrees (i.e., two [(additional] years of college for Associate's and Master's, and four [additional] years for Bachelor's, Professional, and Doctoral).[8] Figure 6 reveals a strong positive correlation between degrees earned from public institutions and state support for higher education.

[8] Weights for the different degrees could also be derived from data on average earnings differentials (i.e., the average earnings differential between Associate's degrees and high school diplomas is 46.5% as large as the average earnings differential between Bachelor's degrees and high school diplomas, the earnings differential between Master's degrees and Bachelor's degrees is 39.5% as large as the average earnings differential between Bachelor's degrees and high school diplomas, etc.). The results, however, were essentially the same when using this more complicated weighting scheme.

The correlation coefficient between these two variables is 0.376. This suggests that state support for higher education has an important influence on college attainment. However, the caveat about Figure 5 also applies to Figure 6. The correlation between state support for higher education and earned degrees is not necessarily a causal effect. Quantifying the causal effect of state support on degree attainment is left for future research.

Finally, the measure of state support for higher education can be used to evaluate relative state performance in public higher education. In particular, states' outcomes discussed above can be compared to their levels of state support for higher education. States with relatively effective (ineffective) use of state funding can achieve higher (lower) 'enrollment rates' and 'degree rates' than can be explained by their levels of state support for higher education. That is, states with points above (below) the regression lines in Figures 5 and 6 appear to have relatively cost-effective (cost-ineffective) public institutions of higher education. One can think of the distance from the regression line as a bottom-line indicator of efficient use of state support for higher education. In an era of increasing concern about improving accountability in public higher education, perhaps this could end up being the most important use of the proposed new index of state support for higher education.

The state differences from the regression lines illustrated in Figures 5 and 6 are shown in percentage terms in Table 4. The most effective states in using state support to get and keep their potential students in college (i.e., in the enrollment rate) from 1980 through 2005 are California, Colorado, Arizona, Florida, Delaware, Virginia, Washington, and Oregon. The most effective states in using public support to produce college graduates (i.e., in the degree rate) from 1985 through 2005 are Colorado, North

Dakota, Delaware, Kansas, South Dakota, Arizona, Washington, and Virginia. The least effective states in terms of enrollment rates are Connecticut, Alaska, Hawaii, Maine, New Jersey, Massachusetts, Arkansas, and Idaho. The least cost-effective states in terms of degree rates are Alaska, Maine, Connecticut, Massachusetts, New Jersey, Arkansas, Idaho, and Pennsylvania.

Of course, this is only an initial superficial examination of the relationship between higher education outcomes and state support for higher education. Clearly further investigation that identifies causal effects and accounts for different levels of education (i.e., community college versus graduate programs, etc.) and education quality is needed before making judgments about effectiveness of states' postsecondary education systems. The above analysis is simply meant to suggest an important new avenue of research that is feasible using the proposed unbiased and accurate measure of state support for higher education.

Conclusion

Given its obvious importance for academia, it is astonishing that there is so much confusion and misunderstanding about states' support for higher education. Several seemingly reasonable measures of state support for higher education are currently being used, and these measures are often conflicting. Moreover, no previous study has suggested a way out of this mess. No previous research has explored in depth the idea of proposing one best measure of the metric 'state support for higher education'. The relevant literature in the area typically examines various issues about state support for higher education, rather than a single measure.

This study proposes measuring state support for higher education as state higher education funding per high school graduate over the previous four years per dollar of per capita income. This measure captures both principles of government expenditure policy. That is, the proposed measure reflects both states' ability to pay for higher education and states' need for support of higher education. Moreover, it does so in ways that are consistent with previous applications of these principles.

The proposed measure, unlike the typical need-based measure, is unbiased. State higher education funding need can be forecast without having to calculate the effects of state funding for higher education. The measure also avoids being centered on public higher education institutions, which should help alleviate possible perceptions of being slanted toward a particular policy outcome. The proposed measure, unlike several frequently used measures, is also accurate. The measure of state support for higher education is unaffected by events unrelated to either state funding for postsecondary education, state need for higher education, and state ability to pay for higher education. In addition, the proposed measure, unlike several frequently used measures, does not require the use of an imprecise and biased price index to account for interstate and intertemporal differences in the cost of living. Finally, the proposed index is simple and transparent. It is just the ratio of three pieces of information, thus making it easy to calculate, replicate, and evaluate. Although there is always room to quibble about nuances and special exceptions to any measure, we believe that we have constructed a simple measure that can be generally accepted as an accurate and unbiased indicator of state support for higher education.

Perhaps it is overly optimistic to hope that any one measure will be universally accepted as *the* measure of state support for higher education. Indeed, it is unlikely that any measure can be completely immune to accusations of being slanted toward a particular view. Furthermore, there are legitimately different perspectives on state postsecondary education funding that can only be highlighted with different measures. Public support for higher education is not a trivially simple issue, thus it is often worthwhile to use different measures to examine the issue from different angles. For example, one might want to uncover explanations for relatively high or low levels of state support. The lack of a bottom-line measure, though, severely hinders public policy discussion about state support for higher education. Policy disagreements due solely to apples being compared to oranges is an avoidable, and therefore unacceptable, problem. Reducing this unnecessary confusion is the goal of the proposed measure. It is hoped that the measure will help reduce disagreement, misunderstanding, and mistrust in the public discourse on state support for higher education.

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Table 1 - State Support for Higher Education, Selected Fiscal Years

	1980		1985		1990		1995		2000		2005*	
United States	0.161		0.175		0.199		0.209		0.209		0.180	
Alabama	0.210	*12*	0.258	*7*	0.272	*8*	0.334	*2*	0.290	*6*	0.255	*7*
Alaska	0.320	*1*	0.377	*1*	0.310	*4*	0.300	*8*	0.232	*16*	0.231	*10*
Arizona	0.267	*3*	0.282	*4*	0.319	*3*	0.319	*6*	0.318	*4*	0.239	*9*
Arkansas	0.187	*23*	0.190	*25*	0.199	*26*	0.226	*21*	0.258	*8*	0.222	*13*
California	0.222	*8*	0.246	*12*	0.271	*9*	0.241	*18*	0.244	*12*	0.200	*19*
Colorado	0.142	*35*	0.168	*29*	0.174	*36*	0.168	*38*	0.148	*39*	0.099	*47*
Connecticut	0.081	*49*	0.091	*49*	0.122	*46*	0.122	*47*	0.130	*45*	0.110	*45*
Delaware	0.132	*40*	0.162	*33*	0.183	*33*	0.191	*30*	0.198	*27*	0.162	*29*
Florida	0.171	*26*	0.175	*28*	0.222	*19*	0.208	*26*	0.217	*21*	0.157	*32*
Georgia	0.204	*19*	0.202	*20*	0.218	*20*	0.247	*16*	0.269	*7*	0.278	*5*
Hawaii	0.227	*6*	0.257	*8*	0.282	*6*	0.322	*5*	0.257	*9*	0.211	*17*
Idaho	0.208	*14*	0.214	*18*	0.223	*18*	0.248	*15*	0.204	*23*	0.190	*22*
Illinois	0.131	*41*	0.140	*37*	0.173	*37*	0.186	*34*	0.181	*31*	0.165	*27*
Indiana	0.132	*38*	0.138	*40*	0.175	*35*	0.175	*37*	0.179	*33*	0.178	*25*
Iowa	0.144	*33*	0.167	*30*	0.202	*25*	0.239	*19*	0.217	*20*	0.158	*30*
Kansas	0.208	*15*	0.228	*15*	0.259	*11*	0.278	*9*	0.249	*11*	0.212	*16*
Kentucky	0.207	*16*	0.196	*21*	0.216	*21*	0.223	*23*	0.239	*14*	0.229	*11*
Louisiana	0.179	*25*	0.237	*13*	0.192	*29*	0.190	*31*	0.238	*15*	0.265	*6*
Maine	0.100	*45*	0.110	*45*	0.160	*40*	0.149	*43*	0.147	*40*	0.131	*39*
Maryland	0.138	*37*	0.139	*39*	0.192	*28*	0.189	*33*	0.176	*36*	0.141	*35*
Massachusetts	0.090	*48*	0.092	*48*	0.106	*49*	0.110	*48*	0.119	*48*	0.097	*48*
Michigan	0.145	*32*	0.151	*35*	0.184	*32*	0.202	*29*	0.202	*25*	0.169	*26*
Minnesota	0.164	*28*	0.163	*32*	0.203	*24*	0.207	*27*	0.184	*29*	0.130	*41*
Mississippi	0.268	*2*	0.276	*5*	0.268	*10*	0.327	*4*	0.390	*1*	0.301	*3*
Missouri	0.124	*42*	0.115	*43*	0.158	*41*	0.161	*39*	0.170	*37*	0.133	*38*
Montana	0.141	*36*	0.204	*19*	0.176	*34*	0.181	*35*	0.145	*41*	0.121	*43*
Nebraska	0.194	*21*	0.194	*22*	0.231	*16*	0.259	*13*	0.213	*22*	0.201	*18*
Nevada	0.156	*30*	0.139	*38*	0.188	*31*	0.206	*28*	0.199	*26*	0.219	*15*
New Hampshire	0.057	*50*	0.052	*50*	0.065	*50*	0.074	*50*	0.063	*49*	0.050	*50*
New Jersey	0.103	*43*	0.111	*44*	0.138	*45*	0.154	*42*	0.138	*44*	0.126	*42*
New Mexico	0.239	*5*	0.315	*3*	0.341	*1*	0.411	*1*	0.386	*2*	0.359	*1*
New York	0.143	*34*	0.154	*34*	0.165	*39*	0.176	*36*	0.140	*43*	0.149	*33*
North Carolina	0.220	*9*	0.274	*6*	0.298	*5*	0.327	*3*	0.347	*3*	0.297	*4*
North Dakota	0.206	*17*	0.234	*14*	0.255	*12*	0.251	*14*	0.222	*18*	0.193	*20*
Ohio	0.102	*44*	0.116	*42*	0.142	*44*	0.148	*44*	0.161	*38*	0.133	*37*
Oklahoma	0.195	*20*	0.220	*17*	0.236	*15*	0.266	*11*	0.242	*13*	0.179	*24*
Oregon	0.212	*10*	0.224	*16*	0.242	*14*	0.233	*20*	0.180	*32*	0.144	*34*
Pennsylvania	0.092	*47*	0.099	*47*	0.112	*48*	0.129	*46*	0.121	*47*	0.102	*46*
Rhode Island	0.156	*31*	0.142	*36*	0.152	*42*	0.140	*45*	0.144	*42*	0.116	*44*
South Carolina	0.262	*4*	0.249	*10*	0.242	*13*	0.260	*12*	0.256	*10*	0.243	*8*
South Dakota	0.132	*39*	0.124	*41*	0.148	*43*	0.159	*41*	0.126	*46*	0.134	*36*
Tennessee	0.187	*22*	0.190	*24*	0.209	*22*	0.219	*24*	0.203	*24*	0.227	*12*
Texas	0.211	*11*	0.247	*11*	0.279	*7*	0.267	*10*	0.232	*17*	0.190	*21*
Utah	0.209	*13*	0.250	*9*	0.230	*17*	0.225	*22*	0.183	*30*	0.187	*23*
Vermont	0.095	*46*	0.104	*46*	0.113	*47*	0.100	*49*	0.061	*50*	0.063	*49*
Virginia	0.160	*29*	0.164	*31*	0.190	*30*	0.160	*40*	0.178	*34*	0.130	*40*
Washington	0.205	*18*	0.191	*23*	0.198	*27*	0.208	*25*	0.177	*35*	0.158	*31*
West Virginia	0.187	*24*	0.187	*26*	0.172	*38*	0.189	*32*	0.217	*19*	0.219	*14*
Wisconsin	0.167	*27*	0.180	*27*	0.206	*23*	0.243	*17*	0.193	*28*	0.163	*28*
Wyoming	0.227	*7*	0.373	*2*	0.337	*2*	0.308	*7*	0.292	*5*	0.338	*2*

*Preliminary estimate. State rank in italics.

Table 2 - State Support for Higher Education, FY 1980-2005 Summary

	Mean		Coefficient of Variation	
United States	0.191		0.073	
Alabama	0.269	*7*	0.120	*23*
Alaska	0.299	*3*	0.164	*3*
Arizona	0.297	*5*	0.091	*43*
Arkansas	0.212	*21*	0.129	*19*
California	0.248	*10*	0.104	*35*
Colorado	0.156	*38*	0.149	*9*
Connecticut	0.110	*47*	0.151	*8*
Delaware	0.178	*32*	0.117	*27*
Florida	0.195	*25*	0.109	*34*
Georgia	0.234	*15*	0.126	*20*
Hawaii	0.261	*8*	0.111	*32*
Idaho	0.216	*18*	0.082	*48*
Illinois	0.165	*36*	0.118	*25*
Indiana	0.166	*34*	0.110	*33*
Iowa	0.194	*27*	0.162	*5*
Kansas	0.239	*11*	0.090	*44*
Kentucky	0.221	*16*	0.086	*46*
Louisiana	0.212	*22*	0.117	*26*
Maine	0.135	*44*	0.154	*7*
Maryland	0.164	*37*	0.123	*21*
Massachusetts	0.102	*48*	0.130	*18*
Michigan	0.180	*31*	0.138	*12*
Minnesota	0.181	*30*	0.132	*17*
Mississippi	0.293	*6*	0.132	*16*
Missouri	0.145	*40*	0.134	*15*
Montana	0.166	*33*	0.157	*6*
Nebraska	0.219	*17*	0.114	*30*
Nevada	0.189	*29*	0.164	*2*
New Hampshire	0.062	*50*	0.115	*29*
New Jersey	0.131	*45*	0.134	*14*
New Mexico	0.341	*1*	0.140	*11*
New York	0.153	*39*	0.083	*47*
North Carolina	0.298	*4*	0.137	*13*
North Dakota	0.236	*14*	0.102	*36*
Ohio	0.136	*43*	0.144	*10*
Oklahoma	0.236	*12*	0.116	*28*
Oregon	0.213	*20*	0.162	*4*
Pennsylvania	0.111	*46*	0.111	*31*
Rhode Island	0.140	*41*	0.065	*49*
South Carolina	0.249	*9*	0.054	*50*
South Dakota	0.138	*42*	0.099	*40*
Tennessee	0.201	*23*	0.093	*42*
Texas	0.236	*13*	0.100	*38*
Utah	0.215	*19*	0.102	*37*
Vermont	0.091	*49*	0.218	*1*
Virginia	0.165	*35*	0.100	*39*
Washington	0.191	*28*	0.095	*41*
West Virginia	0.194	*26*	0.089	*45*
Wisconsin	0.197	*24*	0.119	*24*
Wyoming	0.328	*2*	0.120	*22*

State rank in italics.

Table 3 - Interstate Rankings using Various Measures of 'State Support for Higher Education', FY 1980 and 2005

	1980				2005*			
	$F/(i \cdot \sum G)$	F/i	F/E	F/N	$F/(i \cdot \sum G)$	F/i	F/E	F/N
United States	0.161	0.893%	$5,933	$184	0.180	0.722%	$7,130	$244
Alabama	*12*	*16*	*33*	*12*	*7*	*12*	*24*	*13*
Alaska	*1*	*1*	*2*	*2*	*10*	*7*	*2*	*3*
Arizona	*3*	*9*	*36*	*14*	*9*	*18*	*27*	*21*
Arkansas	*23*	*27*	*27*	*37*	*13*	*13*	*25*	*23*
California	*8*	*17*	*23*	*6*	*19*	*19*	*30*	*9*
Colorado	*35*	*38*	*48*	*34*	*47*	*48*	*48*	*48*
Connecticut	*49*	*49*	*3*	*30*	*45*	*44*	*4*	*31*
Delaware	*40*	*33*	*40*	*23*	*29*	*29*	*26*	*22*
Florida	*26*	*41*	*39*	*43*	*32*	*43*	*45*	*45*
Georgia	*19*	*23*	*9*	*28*	*5*	*14*	*9*	*12*
Hawaii	*6*	*6*	*1*	*3*	*17*	*11*	*3*	*5*
Idaho	*14*	*12*	*13*	*15*	*22*	*15*	*16*	*18*
Illinois	*41*	*39*	*25*	*25*	*27*	*28*	*11*	*24*
Indiana	*38*	*37*	*28*	*32*	*25*	*27*	*35*	*35*
Iowa	*33*	*26*	*12*	*11*	*30*	*22*	*33*	*17*
Kansas	*15*	*8*	*26*	*8*	*16*	*8*	*14*	*6*
Kentucky	*16*	*20*	*21*	*27*	*11*	*16*	*18*	*19*
Louisiana	*25*	*25*	*37*	*38*	*6*	*4*	*19*	*10*
Maine	*45*	*45*	*14*	*41*	*39*	*37*	*23*	*40*
Maryland	*37*	*35*	*17*	*18*	*35*	*34*	*20*	*20*
Massachusetts	*48*	*48*	*29*	*48*	*48*	*47*	*13*	*43*
Michigan	*32*	*29*	*34*	*24*	*26*	*25*	*31*	*26*
Minnesota	*28*	*13*	*20*	*10*	*41*	*31*	*29*	*25*
Mississippi	*2*	*5*	*44*	*31*	*3*	*3*	*22*	*11*
Missouri	*42*	*40*	*43*	*44*	*38*	*38*	*36*	*41*
Montana	*36*	*30*	*42*	*35*	*43*	*36*	*47*	*44*
Nebraska	*21*	*7*	*15*	*5*	*18*	*6*	*10*	*4*
Nevada	*30*	*42*	*18*	*42*	*15*	*33*	*7*	*32*
New Hampshire	*50*	*50*	*50*	*50*	*50*	*50*	*50*	*50*
New Jersey	*43*	*44*	*4*	*29*	*42*	*40*	*5*	*28*
New Mexico	*5*	*3*	*10*	*4*	*1*	*2*	*6*	*2*
New York	*34*	*36*	*7*	*33*	*33*	*41*	*12*	*37*
North Carolina	*9*	*15*	*6*	*7*	*4*	*9*	*8*	*8*
North Dakota	*17*	*2*	*32*	*9*	*20*	*5*	*43*	*7*
Ohio	*44*	*43*	*41*	*40*	*37*	*35*	*42*	*39*
Oklahoma	*20*	*21*	*11*	*16*	*24*	*23*	*37*	*27*
Oregon	*10*	*19*	*19*	*17*	*34*	*39*	*46*	*42*
Pennsylvania	*47*	*47*	*38*	*47*	*46*	*46*	*40*	*47*
Rhode Island	*31*	*34*	*47*	*46*	*44*	*45*	*34*	*46*
South Carolina	*4*	*4*	*8*	*20*	*8*	*24*	*32*	*33*
South Dakota	*39*	*28*	*45*	*45*	*36*	*30*	*41*	*36*
Tennessee	*22*	*31*	*31*	*36*	*12*	*26*	*15*	*34*
Texas	*11*	*22*	*22*	*19*	*21*	*20*	*17*	*16*
Utah	*13*	*11*	*35*	*21*	*23*	*10*	*38*	*15*
Vermont	*46*	*46*	*49*	*49*	*49*	*49*	*49*	*49*
Virginia	*29*	*32*	*30*	*26*	*40*	*42*	*44*	*38*
Washington	*18*	*18*	*16*	*22*	*31*	*32*	*28*	*30*
West Virginia	*24*	*24*	*46*	*39*	*14*	*17*	*39*	*29*
Wisconsin	*27*	*14*	*24*	*13*	*28*	*21*	*21*	*14*
Wyoming	*7*	*10*	*5*	*1*	*2*	*1*	*1*	*1*

*Preliminary estimate. $F/(i \cdot \sum G)$ is the measure proposed in this study, F/I is funding relative to income, F/E is funding per FTE student, and F/N is funding per capita. Values of F/E and F/N in 1980 are adjusted for inflation.

Table 4 - First-Pass Estimates of Cost-Effectiveness in Using State Support for Higher Education

	Enrollment Rate		Degree Rate	
Alabama	10.3%	*11*	14.3%	*10*
Alaska	-26.0%	*49*	-41.4%	*50*
Arizona	25.1%	*3*	21.0%	*6*
Arkansas	-14.8%	*44*	-19.9%	*45*
California	41.0%	*1*	-4.7%	*28*
Colorado	37.3%	*2*	40.9%	*1*
Connecticut	-28.0%	*50*	-24.5%	*48*
Delaware	20.5%	*5*	36.2%	*3*
Florida	23.9%	*4*	15.1%	*9*
Georgia	-9.6%	*39*	-11.2%	*38*
Hawaii	-26.0%	*48*	-17.3%	*42*
Idaho	-13.4%	*43*	-19.0%	*44*
Illinois	0.3%	*21*	-12.2%	*41*
Indiana	-0.6%	*24*	4.7%	*18*
Iowa	-8.8%	*38*	-0.4%	*24*
Kansas	7.6%	*13*	28.5%	*4*
Kentucky	-12.6%	*40*	-12.0%	*40*
Louisiana	-0.8%	*25*	-3.8%	*27*
Maine	-23.1%	*47*	-26.7%	*49*
Maryland	10.7%	*10*	6.0%	*16*
Massachusetts	-18.9%	*45*	-24.0%	*47*
Michigan	7.5%	*14*	14.1%	*11*
Minnesota	2.6%	*18*	-9.0%	*37*
Mississippi	-5.1%	*33*	-4.9%	*29*
Missouri	-2.3%	*29*	-8.5%	*36*
Montana	5.2%	*15*	13.6%	*12*
Nebraska	-0.6%	*23*	3.7%	*20*
Nevada	9.4%	*12*	-7.1%	*33*
New Hampshire	1.6%	*19*	2.1%	*21*
New Jersey	-20.7%	*46*	-21.1%	*46*
New Mexico	-6.8%	*36*	-7.0%	*32*
New York	-7.0%	*37*	-6.8%	*31*
North Carolina	-5.3%	*34*	-1.9%	*26*
North Dakota	10.9%	*9*	37.1%	*2*
Ohio	0.6%	*20*	-8.1%	*34*
Oklahoma	-4.0%	*32*	8.3%	*15*
Oregon	14.5%	*8*	10.8%	*14*
Pennsylvania	-12.6%	*41*	-18.5%	*43*
Rhode Island	-1.2%	*27*	1.4%	*22*
South Carolina	-1.1%	*26*	-0.7%	*25*
South Dakota	-6.0%	*35*	21.1%	*5*
Tennessee	-0.2%	*22*	-11.8%	*39*
Texas	3.0%	*17*	-6.7%	*30*
Utah	-3.1%	*30*	6.0%	*17*
Vermont	-1.6%	*28*	10.8%	*13*
Virginia	18.0%	*6*	16.4%	*8*
Washington	17.7%	*7*	20.2%	*7*
West Virginia	-3.8%	*31*	-0.3%	*23*
Wisconsin	3.3%	*16*	4.4%	*19*
Wyoming	-13.3%	*42*	-8.3%	*35*

State rank in italics.

Figure 1 - National State Support for Higher Education, FY 1980-2005

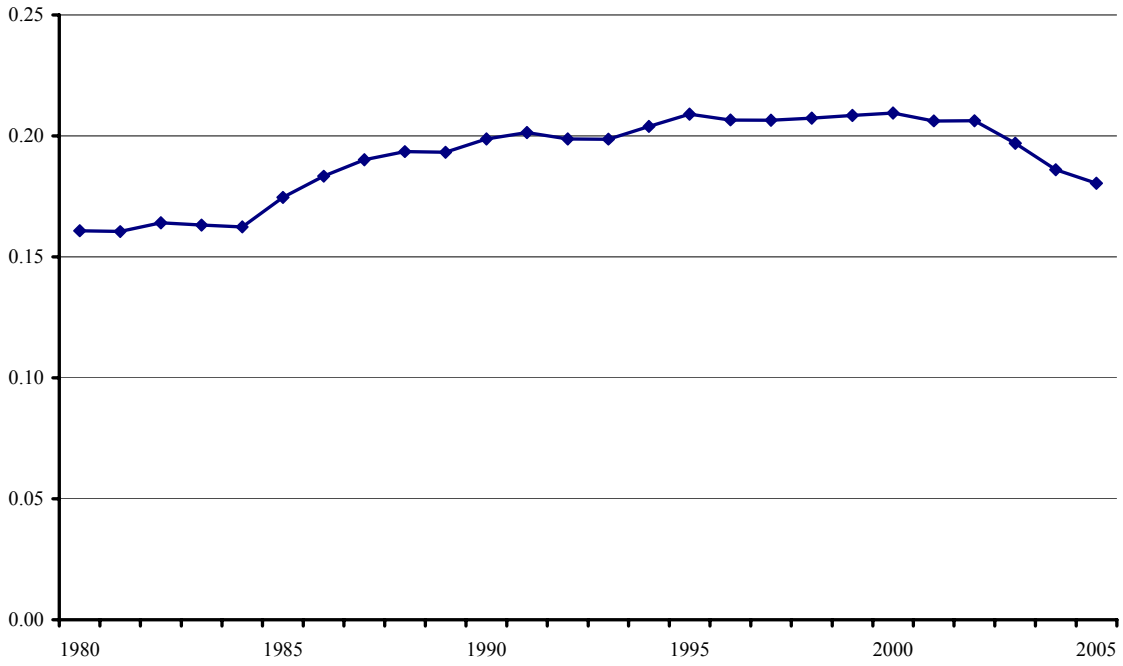

Figure 2 - Trends in Index Components, FY 1980-2005

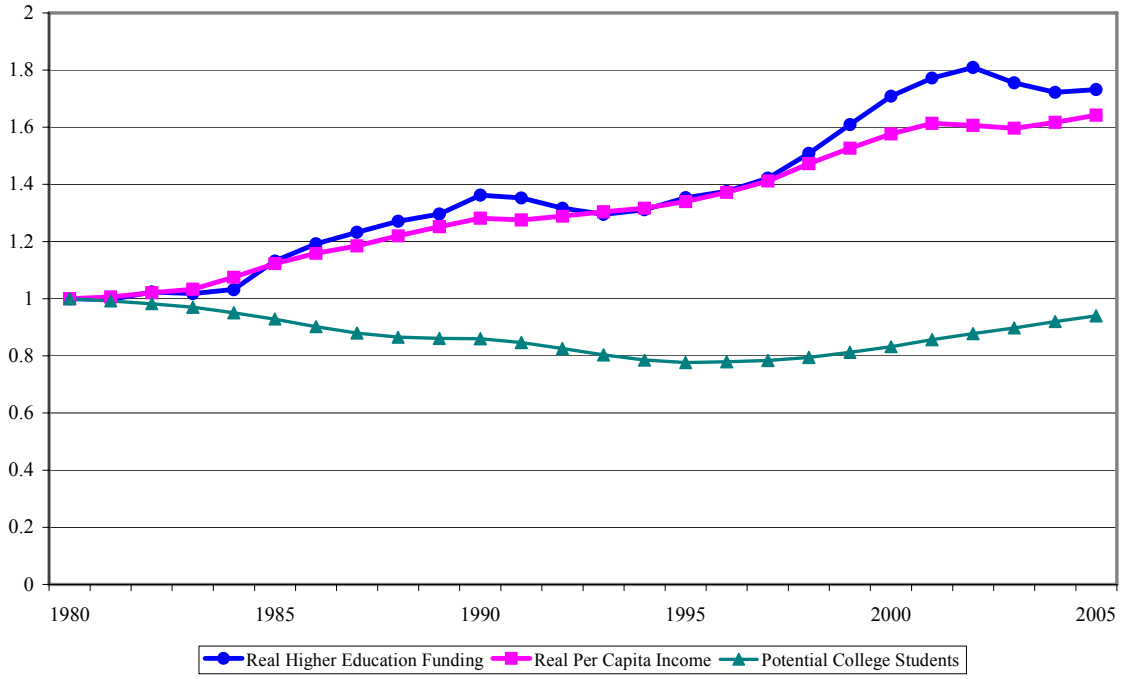

Figure 3 - State Support for Higher Education, FY 1980-2005 Average

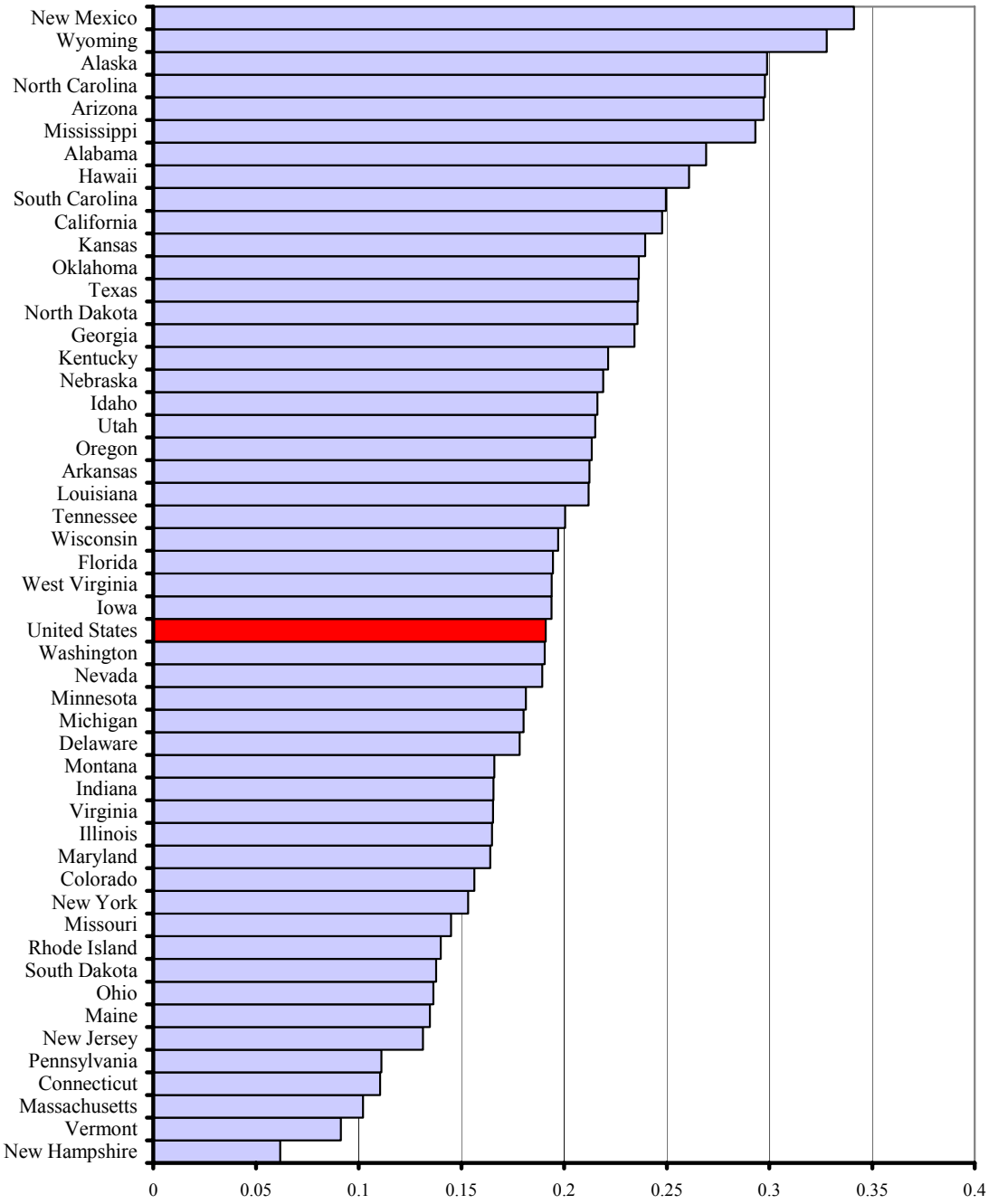

Figure 4 - Percent Change in State Support for Higher Education from FY 1980 to FY 2005

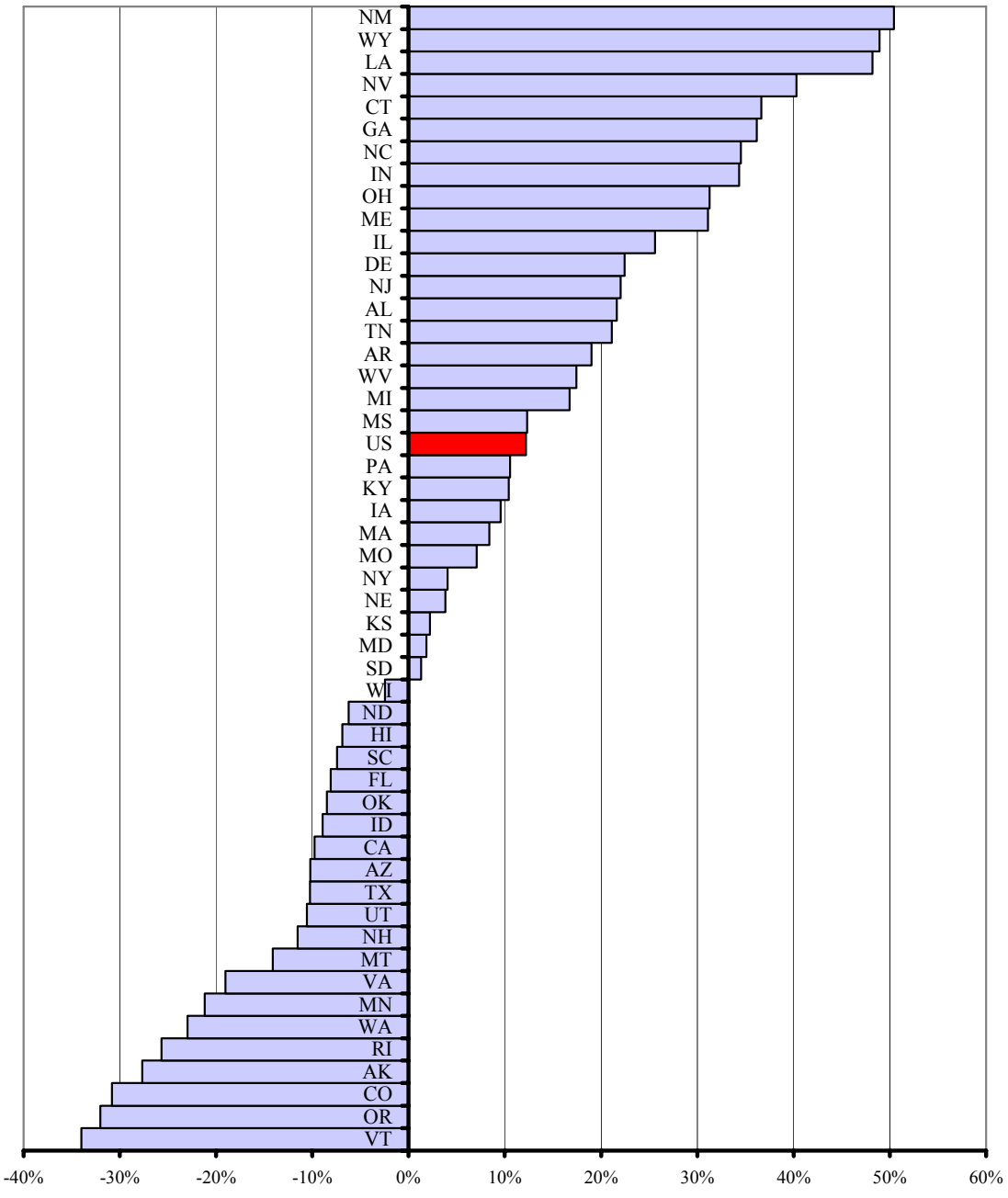

Figure 5 - College Enrollment Rate and State Support for Higher Education, FY 1980-2005 Average

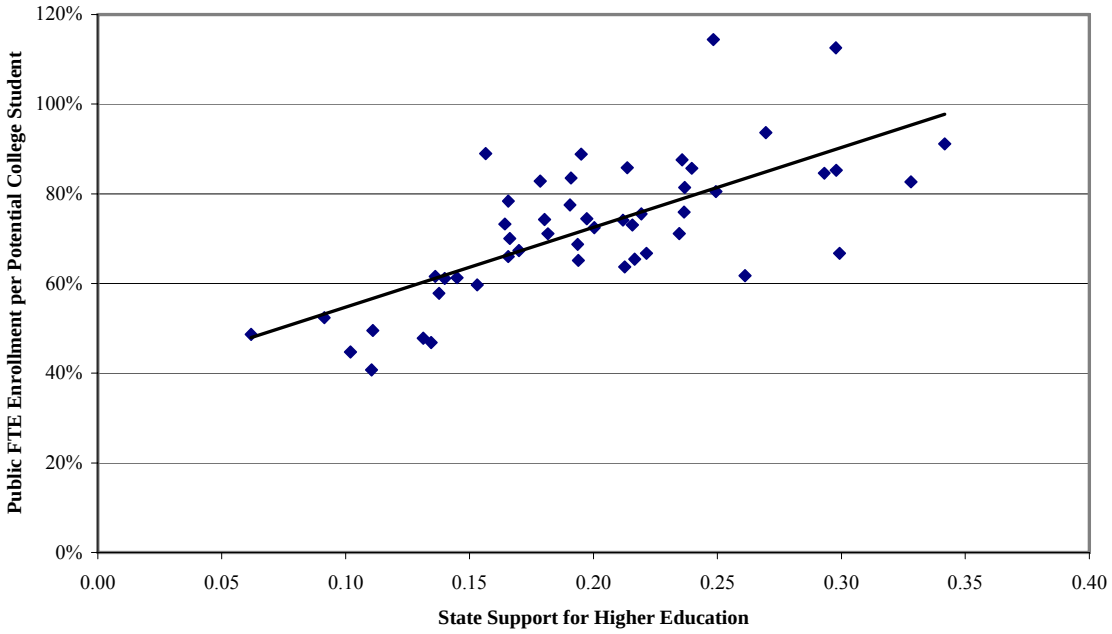

Figure 6 - Degree Rate and State Support for Higher Education, FY 1985-2005 Average

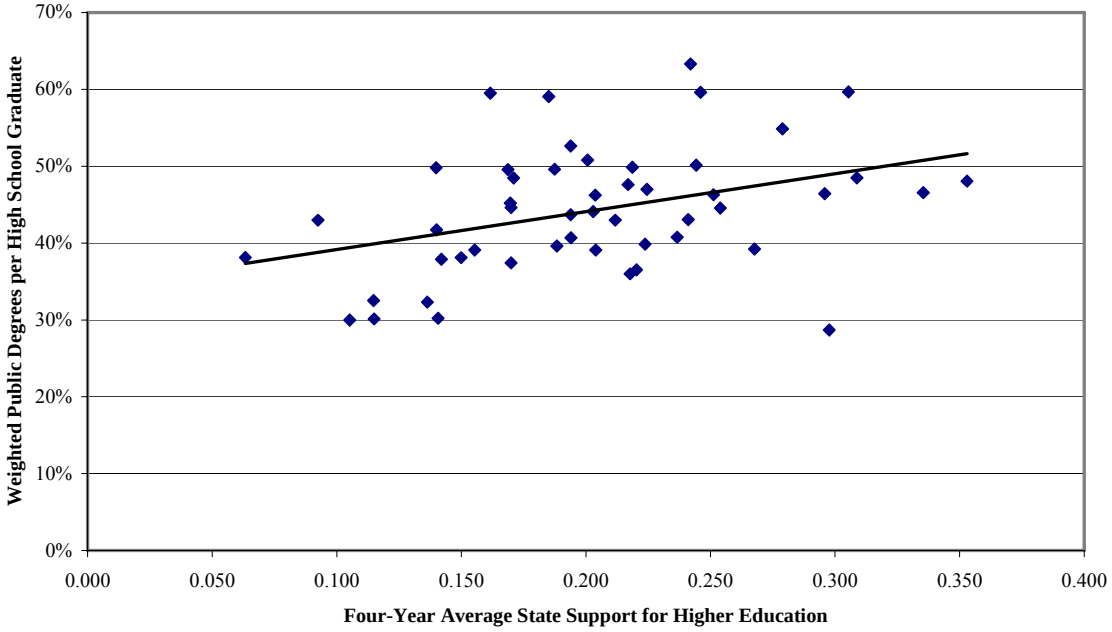

Table A1 - State Support for Higher Education, FY 1981-1984

	1981		1982		1983		1984	
United States	0.160		0.164		0.163		0.162	
Alabama	0.222	*10*	0.211	*16*	0.216	*14*	0.227	*9*
Alaska	0.329	*1*	0.341	*1*	0.359	*1*	0.365	*1*
Arizona	0.266	*4*	0.280	*3*	0.262	*6*	0.280	*5*
Arkansas	0.175	*24*	0.167	*27*	0.167	*27*	0.160	*30*
California	0.236	*7*	0.230	*10*	0.215	*15*	0.188	*23*
Colorado	0.135	*39*	0.151	*33*	0.164	*29*	0.166	*27*
Connecticut	0.081	*49*	0.082	*49*	0.085	*48*	0.086	*48*
Delaware	0.138	*36*	0.155	*31*	0.159	*32*	0.153	*33*
Florida	0.173	*25*	0.176	*23*	0.174	*24*	0.176	*25*
Georgia	0.205	*15*	0.215	*14*	0.211	*17*	0.199	*18*
Hawaii	0.227	*8*	0.242	*6*	0.266	*5*	0.254	*6*
Idaho	0.208	*13*	0.195	*19*	0.195	*20*	0.199	*19*
Illinois	0.136	*38*	0.133	*40*	0.132	*39*	0.141	*36*
Indiana	0.138	*35*	0.136	*38*	0.132	*40*	0.135	*39*
Iowa	0.148	*32*	0.151	*34*	0.170	*25*	0.160	*29*
Kansas	0.212	*12*	0.209	*17*	0.217	*13*	0.214	*15*
Kentucky	0.193	*20*	0.195	*20*	0.201	*19*	0.205	*17*
Louisiana	0.190	*21*	0.201	*18*	0.212	*16*	0.213	*16*
Maine	0.098	*45*	0.097	*45*	0.101	*45*	0.099	*46*
Maryland	0.141	*33*	0.134	*39*	0.141	*37*	0.133	*40*
Massachusetts	0.085	*48*	0.082	*48*	0.082	*49*	0.082	*49*
Michigan	0.129	*40*	0.151	*32*	0.138	*38*	0.137	*38*
Minnesota	0.153	*29*	0.164	*29*	0.156	*33*	0.160	*28*
Mississippi	0.272	*2*	0.270	*4*	0.272	*4*	0.289	*3*
Missouri	0.125	*41*	0.112	*42*	0.113	*42*	0.110	*43*
Montana	0.138	*37*	0.164	*28*	0.183	*22*	0.196	*20*
Nebraska	0.194	*19*	0.193	*21*	0.192	*21*	0.195	*21*
Nevada	0.153	*30*	0.149	*35*	0.147	*34*	0.144	*35*
New Hampshire	0.056	*50*	0.061	*50*	0.050	*50*	0.054	*50*
New Jersey	0.100	*44*	0.103	*43*	0.103	*43*	0.105	*44*
New Mexico	0.256	*5*	0.269	*5*	0.284	*3*	0.289	*4*
New York	0.139	*34*	0.144	*36*	0.144	*35*	0.144	*34*
North Carolina	0.225	*9*	0.233	*9*	0.233	*9*	0.225	*11*
North Dakota	0.206	*14*	0.226	*11*	0.223	*12*	0.226	*10*
Ohio	0.102	*43*	0.101	*44*	0.100	*46*	0.111	*42*
Oklahoma	0.200	*17*	0.215	*15*	0.248	*7*	0.224	*13*
Oregon	0.196	*18*	0.218	*13*	0.203	*18*	0.224	*14*
Pennsylvania	0.087	*47*	0.092	*47*	0.095	*47*	0.096	*47*
Rhode Island	0.148	*31*	0.142	*37*	0.144	*36*	0.140	*37*
South Carolina	0.255	*6*	0.239	*7*	0.229	*11*	0.229	*8*
South Dakota	0.121	*42*	0.127	*41*	0.123	*41*	0.119	*41*
Tennessee	0.172	*26*	0.170	*24*	0.165	*28*	0.159	*31*
Texas	0.205	*16*	0.238	*8*	0.242	*8*	0.251	*7*
Utah	0.212	*11*	0.219	*12*	0.231	*10*	0.225	*12*
Vermont	0.092	*46*	0.097	*46*	0.101	*44*	0.105	*45*
Virginia	0.164	*28*	0.158	*30*	0.160	*31*	0.155	*32*
Washington	0.185	*22*	0.170	*25*	0.162	*30*	0.191	*22*
West Virginia	0.182	*23*	0.190	*22*	0.176	*23*	0.175	*26*
Wisconsin	0.168	*27*	0.167	*26*	0.169	*26*	0.180	*24*
Wyoming	0.271	*3*	0.293	*2*	0.351	*2*	0.362	*2*

State rank in italics.

Table A2 - State Support for Higher Education, FY 1986-1989

	1986		1987		1988		1989	
United States	0.183		0.190		0.193		0.193	
Alabama	0.313	*4*	0.268	*7*	0.279	*7*	0.297	*6*
Alaska	0.373	*2*	0.329	*2*	0.332	*3*	0.324	*4*
Arizona	0.307	*5*	0.307	*4*	0.315	*4*	0.328	*3*
Arkansas	0.198	*23*	0.197	*24*	0.202	*24*	0.207	*23*
California	0.259	*10*	0.289	*6*	0.286	*6*	0.274	*8*
Colorado	0.172	*30*	0.182	*31*	0.183	*33*	0.181	*33*
Connecticut	0.096	*49*	0.103	*49*	0.112	*48*	0.117	*46*
Delaware	0.170	*31*	0.181	*32*	0.183	*32*	0.181	*34*
Florida	0.183	*28*	0.199	*23*	0.210	*21*	0.214	*21*
Georgia	0.206	*19*	0.212	*19*	0.215	*20*	0.215	*20*
Hawaii	0.274	*8*	0.236	*14*	0.260	*9*	0.258	*10*
Idaho	0.221	*18*	0.227	*15*	0.235	*16*	0.223	*16*
Illinois	0.152	*37*	0.160	*38*	0.152	*39*	0.154	*40*
Indiana	0.150	*38*	0.163	*37*	0.171	*37*	0.172	*36*
Iowa	0.165	*34*	0.172	*35*	0.187	*30*	0.194	*27*
Kansas	0.237	*15*	0.220	*17*	0.241	*13*	0.248	*12*
Kentucky	0.203	*22*	0.213	*18*	0.222	*18*	0.218	*18*
Louisiana	0.231	*17*	0.209	*21*	0.203	*22*	0.186	*30*
Maine	0.116	*45*	0.138	*44*	0.146	*42*	0.156	*39*
Maryland	0.145	*40*	0.153	*39*	0.159	*38*	0.172	*37*
Massachusetts	0.100	*48*	0.113	*47*	0.119	*46*	0.110	*49*
Michigan	0.166	*33*	0.177	*33*	0.180	*34*	0.181	*32*
Minnesota	0.176	*29*	0.195	*26*	0.197	*27*	0.201	*24*
Mississippi	0.286	*7*	0.258	*10*	0.257	*10*	0.279	*7*
Missouri	0.138	*42*	0.140	*42*	0.149	*41*	0.154	*41*
Montana	0.203	*21*	0.192	*28*	0.196	*28*	0.185	*31*
Nebraska	0.191	*26*	0.196	*25*	0.202	*25*	0.213	*22*
Nevada	0.161	*35*	0.169	*36*	0.172	*36*	0.170	*38*
New Hampshire	0.057	*50*	0.060	*50*	0.068	*50*	0.070	*50*
New Jersey	0.121	*44*	0.128	*45*	0.135	*45*	0.139	*44*
New Mexico	0.319	*3*	0.325	*3*	0.336	*2*	0.332	*2*
New York	0.160	*36*	0.174	*34*	0.175	*35*	0.174	*35*
North Carolina	0.289	*6*	0.299	*5*	0.304	*5*	0.298	*5*
North Dakota	0.253	*11*	0.264	*8*	0.271	*8*	0.255	*11*
Ohio	0.129	*43*	0.139	*43*	0.140	*44*	0.139	*45*
Oklahoma	0.261	*9*	0.242	*12*	0.238	*15*	0.233	*14*
Oregon	0.239	*14*	0.249	*11*	0.252	*12*	0.243	*13*
Pennsylvania	0.104	*47*	0.107	*48*	0.109	*49*	0.110	*48*
Rhode Island	0.146	*39*	0.144	*41*	0.150	*40*	0.153	*42*
South Carolina	0.250	*12*	0.259	*9*	0.254	*11*	0.259	*9*
South Dakota	0.140	*41*	0.147	*40*	0.145	*43*	0.148	*43*
Tennessee	0.205	*20*	0.225	*16*	0.221	*19*	0.220	*17*
Texas	0.231	*16*	0.211	*20*	0.231	*17*	0.217	*19*
Utah	0.249	*13*	0.241	*13*	0.241	*14*	0.228	*15*
Vermont	0.114	*46*	0.116	*46*	0.114	*47*	0.114	*47*
Virginia	0.170	*32*	0.193	*27*	0.184	*31*	0.191	*28*
Washington	0.196	*24*	0.203	*22*	0.203	*23*	0.196	*26*
West Virginia	0.196	*25*	0.191	*30*	0.191	*29*	0.189	*29*
Wisconsin	0.190	*27*	0.192	*29*	0.198	*26*	0.198	*25*
Wyoming	0.389	*1*	0.391	*1*	0.377	*1*	0.365	*1*

State rank in italics.

Table A3 - State Support for Higher Education, FY 1991-1994

	1991		1992		1993		1994	
United States	0.201		0.199		0.199		0.204	
Alabama	0.269	*8*	0.263	*10*	0.261	*11*	0.292	*7*
Alaska	0.318	*4*	0.319	*3*	0.311	*3*	0.315	*2*
Arizona	0.319	*2*	0.314	*4*	0.309	*4*	0.311	*5*
Arkansas	0.195	*29*	0.217	*22*	0.225	*23*	0.227	*22*
California	0.284	*6*	0.265	*9*	0.241	*16*	0.229	*20*
Colorado	0.170	*38*	0.163	*38*	0.171	*37*	0.171	*37*
Connecticut	0.128	*46*	0.122	*46*	0.105	*47*	0.122	*47*
Delaware	0.181	*34*	0.186	*31*	0.189	*31*	0.189	*31*
Florida	0.219	*22*	0.202	*28*	0.192	*30*	0.198	*29*
Georgia	0.220	*21*	0.202	*26*	0.211	*25*	0.231	*19*
Hawaii	0.276	*7*	0.279	*5*	0.302	*5*	0.311	*4*
Idaho	0.246	*16*	0.246	*16*	0.236	*17*	0.235	*18*
Illinois	0.174	*37*	0.172	*36*	0.176	*35*	0.182	*33*
Indiana	0.182	*33*	0.181	*32*	0.176	*34*	0.177	*35*
Iowa	0.221	*20*	0.213	*23*	0.235	*18*	0.243	*15*
Kansas	0.258	*11*	0.255	*13*	0.264	*10*	0.271	*9*
Kentucky	0.228	*18*	0.230	*18*	0.218	*24*	0.222	*23*
Louisiana	0.204	*25*	0.202	*27*	0.197	*28*	0.190	*30*
Maine	0.150	*41*	0.149	*41*	0.145	*42*	0.147	*43*
Maryland	0.191	*30*	0.172	*35*	0.180	*33*	0.182	*34*
Massachusetts	0.094	*49*	0.082	*49*	0.094	*49*	0.104	*48*
Michigan	0.186	*31*	0.195	*30*	0.198	*27*	0.200	*28*
Minnesota	0.210	*24*	0.207	*24*	0.211	*26*	0.207	*26*
Mississippi	0.250	*13*	0.235	*17*	0.248	*15*	0.250	*14*
Missouri	0.158	*39*	0.145	*42*	0.150	*40*	0.153	*42*
Montana	0.178	*36*	0.196	*29*	0.184	*32*	0.176	*36*
Nebraska	0.245	*17*	0.251	*14*	0.260	*12*	0.261	*12*
Nevada	0.199	*27*	0.224	*20*	0.234	*19*	0.213	*25*
New Hampshire	0.067	*50*	0.068	*50*	0.067	*50*	0.072	*50*
New Jersey	0.132	*45*	0.141	*43*	0.148	*41*	0.156	*41*
New Mexico	0.364	*1*	0.367	*1*	0.375	*1*	0.388	*1*
New York	0.156	*40*	0.156	*40*	0.159	*38*	0.170	*38*
North Carolina	0.299	*5*	0.278	*6*	0.299	*6*	0.312	*3*
North Dakota	0.251	*12*	0.276	*7*	0.271	*7*	0.262	*11*
Ohio	0.144	*43*	0.138	*44*	0.135	*43*	0.143	*44*
Oklahoma	0.247	*15*	0.266	*8*	0.270	*8*	0.269	*10*
Oregon	0.260	*9*	0.258	*12*	0.267	*9*	0.240	*16*
Pennsylvania	0.118	*47*	0.121	*47*	0.121	*46*	0.126	*46*
Rhode Island	0.139	*44*	0.129	*45*	0.130	*44*	0.135	*45*
South Carolina	0.260	*10*	0.247	*15*	0.252	*14*	0.257	*13*
South Dakota	0.150	*42*	0.158	*39*	0.130	*45*	0.169	*39*
Tennessee	0.198	*28*	0.179	*33*	0.193	*29*	0.206	*27*
Texas	0.249	*14*	0.262	*11*	0.254	*13*	0.274	*8*
Utah	0.224	*19*	0.228	*19*	0.232	*21*	0.229	*21*
Vermont	0.108	*48*	0.106	*48*	0.102	*48*	0.099	*49*
Virginia	0.183	*32*	0.164	*37*	0.158	*39*	0.160	*40*
Washington	0.202	*26*	0.205	*25*	0.226	*22*	0.222	*24*
West Virginia	0.179	*35*	0.176	*34*	0.173	*36*	0.185	*32*
Wisconsin	0.217	*23*	0.222	*21*	0.232	*20*	0.237	*17*
Wyoming	0.319	*3*	0.324	*2*	0.321	*2*	0.311	*6*

State rank in italics.

Table A4 - State Support for Higher Education, FY 1996-1999

	1996		1997		1998		1999	
United States	0.207		0.206		0.207		0.208	
Alabama	0.304	*6*	0.310	*6*	0.292	*6*	0.291	*6*
Alaska	0.290	*7*	0.277	*9*	0.255	*12*	0.244	*14*
Arizona	0.327	*3*	0.332	*3*	0.322	*5*	0.319	*4*
Arkansas	0.238	*17*	0.241	*16*	0.244	*15*	0.247	*13*
California	0.245	*16*	0.251	*13*	0.276	*9*	0.261	*9*
Colorado	0.170	*36*	0.170	*36*	0.165	*37*	0.156	*39*
Connecticut	0.125	*47*	0.124	*46*	0.125	*46*	0.126	*46*
Delaware	0.201	*29*	0.223	*19*	0.195	*30*	0.206	*25*
Florida	0.208	*27*	0.221	*20*	0.222	*19*	0.214	*21*
Georgia	0.260	*11*	0.284	*8*	0.287	*8*	0.269	*7*
Hawaii	0.274	*8*	0.297	*7*	0.288	*7*	0.254	*11*
Idaho	0.233	*19*	0.217	*22*	0.205	*24*	0.210	*23*
Illinois	0.184	*33*	0.184	*33*	0.182	*33*	0.181	*32*
Indiana	0.178	*35*	0.180	*35*	0.180	*34*	0.178	*34*
Iowa	0.234	*18*	0.225	*18*	0.222	*20*	0.219	*20*
Kansas	0.271	*9*	0.256	*12*	0.251	*13*	0.248	*12*
Kentucky	0.211	*24*	0.212	*26*	0.217	*21*	0.242	*15*
Louisiana	0.182	*34*	0.186	*32*	0.196	*29*	0.241	*16*
Maine	0.150	*44*	0.150	*42*	0.146	*41*	0.146	*40*
Maryland	0.186	*32*	0.181	*34*	0.177	*35*	0.174	*35*
Massachusetts	0.113	*48*	0.118	*48*	0.120	*48*	0.120	*48*
Michigan	0.208	*26*	0.212	*27*	0.206	*23*	0.198	*28*
Minnesota	0.197	*30*	0.196	*30*	0.199	*26*	0.198	*27*
Mississippi	0.334	*2*	0.326	*5*	0.338	*4*	0.348	*3*
Missouri	0.166	*38*	0.166	*37*	0.168	*36*	0.172	*36*
Montana	0.169	*37*	0.162	*39*	0.152	*40*	0.146	*41*
Nebraska	0.250	*14*	0.247	*15*	0.240	*18*	0.232	*17*
Nevada	0.224	*21*	0.220	*21*	0.241	*17*	0.212	*22*
New Hampshire	0.068	*50*	0.070	*50*	0.066	*49*	0.063	*49*
New Jersey	0.157	*39*	0.151	*41*	0.137	*44*	0.139	*42*
New Mexico	0.423	*1*	0.370	*2*	0.351	*1*	0.400	*1*
New York	0.152	*42*	0.146	*43*	0.139	*42*	0.132	*44*
North Carolina	0.321	*4*	0.331	*4*	0.345	*2*	0.349	*2*
North Dakota	0.249	*15*	0.230	*17*	0.242	*16*	0.226	*18*
Ohio	0.151	*43*	0.160	*40*	0.160	*39*	0.158	*38*
Oklahoma	0.258	*13*	0.277	*10*	0.262	*11*	0.255	*10*
Oregon	0.208	*25*	0.203	*29*	0.197	*27*	0.193	*30*
Pennsylvania	0.128	*46*	0.122	*47*	0.121	*47*	0.122	*47*
Rhode Island	0.137	*45*	0.139	*45*	0.137	*43*	0.138	*43*
South Carolina	0.259	*12*	0.263	*11*	0.264	*10*	0.261	*8*
South Dakota	0.154	*41*	0.144	*44*	0.132	*45*	0.129	*45*
Tennessee	0.215	*22*	0.212	*25*	0.204	*25*	0.207	*24*
Texas	0.269	*10*	0.248	*14*	0.246	*14*	0.222	*19*
Utah	0.215	*23*	0.216	*24*	0.196	*28*	0.186	*31*
Vermont	0.095	*49*	0.089	*49*	0.066	*50*	0.062	*50*
Virginia	0.156	*40*	0.163	*38*	0.163	*38*	0.169	*37*
Washington	0.204	*28*	0.203	*28*	0.190	*32*	0.178	*33*
West Virginia	0.194	*31*	0.193	*31*	0.194	*31*	0.194	*29*
Wisconsin	0.231	*20*	0.217	*23*	0.209	*22*	0.198	*26*
Wyoming	0.308	*5*	0.383	*1*	0.338	*3*	0.306	*5*

State rank in italics.

Table A5 - State Support for Higher Education, FY 2001-2004

	2001		2002		2003		2004	
United States	0.206		0.206		0.197		0.186	
Alabama	0.270	*6*	0.266	*6*	0.271	*5*	0.260	*5*
Alaska	0.231	*14*	0.229	*16*	0.232	*11*	0.229	*11*
Arizona	0.301	*4*	0.277	*5*	0.257	*6*	0.251	*7*
Arkansas	0.239	*13*	0.233	*14*	0.229	*12*	0.236	*10*
California	0.255	*9*	0.259	*9*	0.251	*9*	0.222	*14*
Colorado	0.141	*42*	0.137	*43*	0.113	*46*	0.103	*47*
Connecticut	0.120	*47*	0.124	*46*	0.121	*45*	0.112	*45*
Delaware	0.196	*26*	0.185	*29*	0.172	*30*	0.167	*30*
Florida	0.210	*20*	0.192	*25*	0.169	*32*	0.155	*33*
Georgia	0.265	*7*	0.262	*8*	0.254	*8*	0.249	*9*
Hawaii	0.240	*12*	0.234	*13*	0.229	*13*	0.225	*13*
Idaho	0.201	*25*	0.212	*21*	0.200	*22*	0.194	*22*
Illinois	0.181	*29*	0.189	*28*	0.177	*29*	0.171	*28*
Indiana	0.180	*31*	0.165	*36*	0.178	*28*	0.178	*25*
Iowa	0.213	*19*	0.191	*27*	0.184	*26*	0.168	*29*
Kansas	0.243	*11*	0.241	*12*	0.219	*16*	0.216	*16*
Kentucky	0.247	*10*	0.262	*7*	0.254	*7*	0.253	*6*
Louisiana	0.226	*16*	0.242	*11*	0.249	*10*	0.251	*8*
Maine	0.148	*39*	0.148	*39*	0.141	*38*	0.132	*40*
Maryland	0.179	*32*	0.182	*31*	0.163	*33*	0.147	*34*
Massachusetts	0.116	*48*	0.106	*48*	0.103	*48*	0.095	*48*
Michigan	0.202	*24*	0.205	*23*	0.193	*23*	0.175	*26*
Minnesota	0.175	*36*	0.175	*34*	0.151	*35*	0.139	*36*
Mississippi	0.346	*1*	0.313	*2*	0.310	*4*	0.315	*4*
Missouri	0.168	*37*	0.143	*42*	0.140	*41*	0.137	*38*
Montana	0.137	*44*	0.137	*44*	0.129	*44*	0.126	*42*
Nebraska	0.206	*23*	0.218	*18*	0.217	*17*	0.203	*19*
Nevada	0.185	*28*	0.193	*24*	0.184	*27*	0.227	*12*
New Hampshire	0.061	*50*	0.056	*50*	0.055	*50*	0.054	*50*
New Jersey	0.140	*43*	0.146	*40*	0.138	*42*	0.125	*43*
New Mexico	0.315	*3*	0.312	*3*	0.373	*1*	0.369	*1*
New York	0.142	*40*	0.154	*37*	0.150	*36*	0.145	*35*
North Carolina	0.345	*2*	0.340	*1*	0.335	*2*	0.315	*3*
North Dakota	0.208	*22*	0.218	*19*	0.210	*21*	0.200	*20*
Ohio	0.161	*38*	0.150	*38*	0.141	*39*	0.137	*37*
Oklahoma	0.230	*15*	0.213	*20*	0.214	*18*	0.187	*24*
Oregon	0.176	*35*	0.168	*35*	0.161	*34*	0.159	*32*
Pennsylvania	0.121	*46*	0.117	*47*	0.112	*47*	0.104	*46*
Rhode Island	0.142	*41*	0.143	*41*	0.130	*43*	0.122	*44*
South Carolina	0.257	*8*	0.244	*10*	0.227	*14*	0.211	*17*
South Dakota	0.122	*45*	0.126	*45*	0.141	*40*	0.133	*39*
Tennessee	0.209	*21*	0.209	*22*	0.212	*19*	0.197	*21*
Texas	0.214	*18*	0.231	*15*	0.212	*20*	0.205	*18*
Utah	0.176	*34*	0.184	*30*	0.191	*25*	0.189	*23*
Vermont	0.065	*49*	0.064	*49*	0.065	*49*	0.065	*49*
Virginia	0.181	*30*	0.177	*32*	0.145	*37*	0.127	*41*
Washington	0.177	*33*	0.177	*33*	0.172	*31*	0.160	*31*
West Virginia	0.221	*17*	0.228	*17*	0.227	*15*	0.220	*15*
Wisconsin	0.193	*27*	0.192	*26*	0.191	*24*	0.172	*27*
Wyoming	0.292	*5*	0.293	*4*	0.333	*3*	0.327	*2*

State rank in italics.