TEXAS PUBLIC UNIVERSITY
COST STUDY
FY 2002 - FY 2004

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May 2005

Planning and Accountability Division
Texas Higher Education Coordinating Board

Texas Higher Education Coordinating Board

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Coordinating Board Mission

The Texas Higher Education Coordinating Board’s mission is to work with the Legislature, Governor, governing boards, higher education institutions and other entities to provide the people of Texas the widest access to higher education of the highest quality in the most efficient manner.

THECB Strategic Plan

Coordinating Board Philosophy

The Texas Higher Education Coordinating Board will promote access to quality higher education across the state with the conviction that access without quality is mediocrity and that quality without access is unacceptable. The Board will be open, ethical, responsive, and committed to public service. The Board will approach its work with a sense of purpose and responsibility to the people of Texas and is committed to the best use of public monies. The Coordinating Board will engage in actions that add value to Texas and to higher education; the agency will avoid efforts that do not add value or that are duplicated by other entities.

THECB Strategic Plan

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Executive Summary

For many years, the Texas Higher Education Coordinating Board tried to determine how much public universities spend to provide instruction by discipline and by level of instruction. Previous attempts at developing such a cost study were unsuccessful. In the latter part of the 1990s, then State Senator Bill Ratliff developed and implemented an Instruction and Operations matrix that was intended to represent the statewide average cost of instruction for the various disciplines and levels offered at Texas public universities. However, no documentation has been available to validate the matrix elements.

In 2002, the Coordinating Board directed its University Formula Advisory Committee to renew efforts to conduct a cost study to validate the relative weights contained in the matrix. This report provides a summary of the results of the study. The methodology was developed and presented to the Coordinating Board at its April 2004 quarterly meeting, where it was unanimously adopted. The methodology was then presented to the Governor's Office, the Legislative Budget Board, and various legislative committees in June 2004. Since then, the Coordinating Board staff has collected and analyzed data to provide an "all funds" analysis of Texas public university costs. All costs are based on data in each institution's Annual Financial Report. Naturally, this analysis revalues the relative weights, which in turn reallocates the Instruction and Operations formula funding among the universities.

A majority of the University Formula Advisory Committee and the Coordinating Board members believe that it is imperative that the relative weights contained in the Instruction and Operations matrix reflect an objective analysis of universities' actual costs. This is not intended to mean that the cost-based methodology should be the final word on how funds are distributed. For example, workforce shortage issues in nursing and other fields may require special funding decisions. However, to maintain the objective nature of the cost-based analysis, any special treatment should be separate and apart from this determination. This approach will significantly improve accountability and transparency related to expenditures at universities.

The following report is divided into two sections. The first section provides an overview of the cost study process, formula funding for Instruction and Operations (I&O), the calculation methodology used to determine the relative weights, the results of those calculations, and the phase-in methodology. The second section explains how this methodology is used to develop a comparative analysis, by institution, of the various disciplines.

Texas Public Universities
Formula Funding Cost Study
FY 2002 through FY 2004

Background

In the summer of 2002, a workgroup[1] was appointed by the University Formula Advisory Committee to develop a methodology to verify the relative weights in the university Instruction and Operations (I&O) matrix. This workgroup operated under the auspices of the University Formula Advisory Committee (UFAC), which was responding to requests by the Coordinating Board and the Legislature to develop a cost-based methodology for determining the relative weights. The cost-based methodology would not only provide an objective starting point for distributing I&O formula funds, but it also would be a mechanism capable of informing the Legislature about how the universities spend their funding.

Instruction and Operations Formula Funding

The relative weights are used to distribute approximately 60 percent of total state funding to the universities through the I&O formula, and all institutions receive the same amount of funding per semester credit hour for any given level and discipline. The current weights were developed in 1997 by then State Senator Bill Ratliff, Chairman of the Senate Finance Committee, as a means to simplify the complex system of 12 formulas that had been used to distribute funding to the institutions for Instruction, Operations, and Physical Plant Operations and Maintenance.[2] Unfortunately, neither the relative weights developed by Senator Ratliff, nor the previous 12 formulas, were based on actual costs. One goal of this study was to develop relative weights that truly reflect the universities' cost of operation.

Mathematically, the weights in the matrix are intended to represent the ratio of total educational costs to total semester credit hours, by level (lower-division and upper-division undergraduate, master's, doctoral, and special professional) and discipline (liberal arts, science, etc.). In addition to the five levels, the I&O matrix contains relative weights for 20 disciplines (excluding Developmental Education). The I&O formula distributes funding by multiplying a rate ($51.25 for the 2004-2005 biennium) by the number of semester credit hours for a given level and discipline (e.g. lower-division liberal arts) by the relative weight assigned to that level and discipline. Usually, the relative weight for science or engineering at a given level should be greater than the relative weight for liberal arts because faculty salaries and research expenses are higher in science and engineering than in liberal arts. The remaining elements of cost are distributed to the various levels and disciplines on a relatively even basis.

The workgroup agreed that the most appropriate methodology for calculating the weights

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[1] The workgroup consisted of Mr. Phillip C. Diebel, Vice Chancellor for Finance, University of North Texas; Mr. Mike Ferguson, Vice President for Finance & Operation, Lamar University; Ms. Marsha Kelman, Assistant Vice President & Director, Institutional Studies, The University of Texas at Austin; Mr. James Langabeer, Vice President Business Affairs, The University of Texas-Pan American; Mr. Bill Nance, Vice President for Finance & Support Services, Texas State University-San Marcos; Mr. Thomas H. Taylor, Assistant Vice President of Finance, Texas A&M University; Dr. Sandra Harper, Chief Academic Officer, Texas A&M University-Corpus Christi; and Mr. Jeff Phelps, Finance Director, Division of Finance, Campus Planning, and Research, Texas Higher Education Coordinating Board.

[2] Physical Plant O&M is now funded through a separate Infrastructure formula.

is an “all funds” approach in which the costs used to calculate the weights must equal those provided in each institution’s Annual Financial Report (AFR). An earlier workgroup had taken on a similar task to calculate the weights, but limited its analysis only to faculty costs. That study proved to be methodologically flawed as a result of this limitation.

In addition to faculty costs, the workgroup agreed that five additional elements of cost should be included because the I&O formula funds these activities as well:

- Academic Support
- Institutional Support
- Student Services
- Other Instruction (Department Operating Expense), and
- Research

Academic Support, Institutional Support, and Student Services are specific entries in each institution’s AFR. The sum of Faculty Salaries, Other Instruction (i.e. teaching assistants who actually teach a class) and Departmental Operating Costs is equal to the sum of Instruction and Research. Instruction and Research are functional elements of costs that are specific entries in the AFRs. Together, these five cost centers, plus capital outlay, comprise all of the funding sources dedicated to higher education for I&O, as it is defined in the General Appropriations Act.

The workgroup then determined the most appropriate way to allocate these cost centers to the various levels and disciplines. The group agreed on the following allocation methodologies:

- The salaries of faculty who were teaching courses during the years under investigation would be provided to each institution, and each institution would provide a faculty-specific teaching load credit (TLC). The data provided to the institution would already be linked to a level of instruction and academic discipline, and the TLC would allow for the portion of faculty salary dedicated to teaching to be distributed. Because teaching loads vary among the institutions, this value varies among institutions. This calculation also recognized that faculty do not spend all of their time teaching, but often devote part of their time to other activities such as research. Added to faculty salaries are teaching assistant salaries, which each institution also allocates to specific levels and disciplines.
- Academic Support is allocated by level and discipline according to the faculty salary distribution because academic support costs are closely aligned with faculty salary expenditures.
- Institutional Support and Student Services are initially allocated to one of the five levels using the distribution of institution-specific student headcounts, and then to the disciplines according to the distribution of semester credit hours.
- Department Operating Expense (DOE) was deliberated far more than the other issues. Several DOE calculations were examined to determine the most appropriate allocation methodology. The group finally decided that each institution would charge DOE to the appropriate academic discipline, based on the institution’s internal budget designations. For example, the DOE for the English department was charged to “Liberal Arts.” After an institution allocated its costs to the appropriate academic discipline, the institution’s DOE was then allocated by the level of instruction (undergraduate, master’s, etc.) using semester credit hours, the faculty salary distribution, or some combination of the two, whichever the institution believed best represented the proper distribution of costs to the level of instruction.

Data on the five elements of cost have been collected and allocated for FY 2002, FY 2003, and FY 2004. The recommendation by the Coordinating Board also included a phase-in over three biennia, with full implementation occurring in the 2010-2011 biennium. To satisfy the phase-in requirement, only one-half of the change in weights would be applied for use in the 2006-2007 biennium. The Coordinating Board further recommended that no institution suffer more than a 3 percent loss in I&O formula funding in the 2006-2007 biennium. This constraint was accomplished by adjustments to two relative weights, which is discussed in greater detail below.

The current and cost-based Instruction & Operations matrices are given below:

Table 1: Current Instruction & Operations Matrix

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS*	1.00	1.96	3.94	12.04	
SCIENCE	1.53	3.00	7.17	19.29	
FINE ARTS	1.85	3.11	6.51	17.47	
TEACHER ED	1.28	1.96	3.23	9.95	
AGRICULTURE	2.05	2.54	6.64	16.37	
ENGINEERING	3.01	3.46	8.20	21.40	
HOME ECONOMICS	1.58	2.12	4.34	10.79	
LAW					3.22
SOCIAL SERVICE	1.64	1.84	5.80	11.92	
LIBRARY SCIENCE	1.45	1.52	4.22	12.26	
VOCATIONAL TRAIN	1.45	2.59			
PHYSICAL TRAINING	1.36	1.36			
HEALTH SERVICES	2.87	3.46	6.47	15.98	
PHARMACY	4.00	4.64	9.00	19.11	9.00
BUSINESS ADMIN	1.41	1.59	4.59	13.91	
OPTOMETRY			5.46	19.12	7.00
TEACHER ED-PRACT	2.43	2.57			
TECHNOLOGY	1.99	2.56	6.61		
NURSING	4.91	5.32	6.49	16.32	
VET MED					16.72

*Lower division undergraduate Liberal Arts is the rate applied to Developmental Education semester credit hour.

Table 2: Cost-Based Instruction & Operations Matrix, No Phase-In

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS	1.00	1.77	4.20	9.74	
SCIENCE	1.79	3.01	8.08	20.15	
FINE ARTS	1.41	2.37	5.30	7.16	
TEACHER ED	1.40	1.86	2.55	6.88	
AGRICULTURE	2.06	2.70	7.63	10.49	
ENGINEERING	1.85	3.10	6.21	15.30	
HOME ECONOMICS	1.06	1.82	3.05	6.15	
LAW					3.56
SOCIAL SERVICE	2.39	2.76	3.37	12.28	
LIBRARY SCIENCE	1.12	1.14	2.97	5.44	
VOCATIONAL TRAIN	2.83	2.45			
PHYSICAL TRAINING	1.34	1.25			
HEALTH SERVICES	1.32	2.14	3.70	9.52	
PHARMACY	0.91	3.32	18.51	26.34	3.74
BUSINESS ADMIN	1.07	1.63	3.30	19.26	
OPTOMETRY			5.46	19.12	7.00
TEACHER ED-PRACT	1.08	1.82			
TECHNOLOGY	1.87	2.37	4.57		
NURSING	2.24	2.66	5.28	10.66	
VET MED					14.16

Table 3: Cost-Based Instruction & Operations Matrix, with Phase-In and Losses Limited to 3 Percent

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS	1.00	1.86	4.07	10.89	
SCIENCE	1.66	3.00	7.63	19.72	
FINE ARTS	1.63	2.74	5.91	12.31	
TEACHER ED	1.34	1.91	2.89	8.41	
AGRICULTURE	2.06	2.62	7.14	13.43	
ENGINEERING	2.43	3.28	7.21	18.35	
HOME ECONOMICS	1.32	1.97	3.70	8.47	
LAW					3.39
SOCIAL SERVICE	2.01	2.30	4.59	12.10	
LIBRARY SCIENCE	1.28	1.33	3.59	8.85	
VOCATIONAL TRAIN	2.14	2.52			
PHYSICAL TRAINING	1.35	1.30			
HEALTH SERVICES	2.10	2.80	6.10	12.75	
PHARMACY	2.45	3.98	13.75	22.72	6.37
BUSINESS ADMIN	1.24	1.61	3.95	16.59	
OPTOMETRY			5.46	19.12	7.00
TEACHER ED-PRACT	1.75	2.19			
TECHNOLOGY	1.93	2.46	5.59		
NURSING	3.58	4.96	5.89	13.49	
VET MED					15.44

Results of the Cost-Based Methodology

Not surprisingly, the cost study indicated that all of the relative weights in the current matrix needed to be adjusted to reflect the costs of each level and discipline. In the No Phase-In calculation (Table 2), the cost differential between undergraduate and graduate education is significantly less in many academic disciplines than reflected in the current "estimated" matrix. Total costs and total semester credit hours for the cost-based matrix are provided in Appendix A.

Following is a description of the changes between the current matrix and the cost-based, No Phase-In matrix. Because of the phase-in, the changes described below will be moderated, partially due to the limited change in the relative weights, but also because the rate will increase to satisfy the budget neutrality constraint.

- The Liberal Arts relative weights declined for upper-division and doctoral-level, but increased for master's level. The relative weight for lower-division remained at a value of 1.00 and is the weight that all others are measured against.
- The Science relative weights increased for all levels, although the increase at the upper-division level was very small (.01).
- The Fine Arts relative weights declined for all levels, especially at the doctoral level (17.47 to 7.16).
- The Teacher Education relative weights increased for the lower-division level, declined at the upper-division level, and declined more substantially for the master's and doctoral levels.
- The Agriculture relative weight for the lower-division level increased by a very small amount (.01), increased at the upper-division and master's level and declined at the doctoral level.
- The Engineering relative weights declined for all levels.
- The Home Economic relative weights declined for all levels.
- The Law relative weight increased for the special professional level.
- The Social Services relative weights increased for the lower- and upper-division levels, declined for master's level, and increased for doctoral level.
- The Library Science relative weights declined at all levels, especially at the doctoral level (12.26 to 5.44).
- The Vocational Training relative weights almost doubled at the lower-division level (1.45 to 2.83) and declined at the upper-division level.
- The Physical Training relative weight declined at the lower- and upper-division levels.
- The Health Services relative weights declined for all levels.
- The Pharmacy relative weights declined at the lower- and upper-division levels, increased at the master's and doctoral level. The decline in Special Professional, where the majority of the semester credit hours are generated, was significant (9.00 to 3.74).
- The Business Administration relative weights declined for two of the four levels, but the slight increase at the upper-division undergraduate level is where most of the semester credit hours (SCHs) are generated.
- The Optometry relative weights remained unchanged pending further study.
- The Teacher Education Practice relative weights declined for lower- and upper-division levels.
- The Technology relative weights declined at all levels.
- The Nursing relative weights declined at all levels.
- The Veterinary Medicine relative weight declined for the Special Professional level.

Because the analysis is budget neutral, an overall decline in the relative weights means

that the rate in the formula must be increased. Using FY 2002 through FY 2004 data to calculate the relative weights, the rate increased from $51.25 to $54.33, a 6.0 percent increase. Therefore, any reduction in a relative weight of 6.0 percent or less will be offset by the increase in the rate, so that formula funding for that particular level and discipline will increase. The percentage changes are shown in Appendix B and the method for producing the relative weights is provided in Appendix C.

Applying a higher relative weight for each successively higher level of instruction is intuitively appealing because higher-cost faculty could be expected at higher levels of instruction, and the current matrix is based on this premise. The exceptions to this in the current matrix are the weights for special professional for pharmacy and optometry disciplines, both of which are less than the doctoral level weights for each discipline. The cost-based matrix shows a similar relationship. However, the actual weights in the cost-based matrix are significantly different in many cases from the current "estimated" matrix. In the no phase-in, cost-based matrix, there are two instances where the weights for lower-level instruction are higher than for upper-level instruction:

- Vocational Training, where lower-division undergraduate (2.83) exceeds upper-division undergraduate (2.45)
- Physical Training, where lower-division undergraduate (1.34) exceeds upper-division undergraduate (1.25)

For Vocational Training, the SCHs for lower- and upper-division for the three-year period are 5,531 and 4,503, respectively. However, the total cost for these two levels varies to a much greater degree: $2,669,189 for lower-division and $1,886,526 for upper-division, meaning the relative cost of lower-division is higher, which is reflected in the cost-based weights. For Physical Training, both cost ($61,629,288 versus $2,243,825) and SCH (269,055 versus 10,518) are primarily contained at the lower-division level. When the absolute[3] and relative weights are calculated, the lower-division weight is higher than upper-division.

Phase-In Methodology

The phase-in entailed adopting one-half of the rate of change between the current matrix weights and the no phase-in, cost-based weights. After this calculation was made, there was one school, Texas Woman's University, which lost more than 3 percent in I&O formula funding. To satisfy the 3 percent loss funding constraint, two relative weights were adjusted, both of which affected the nursing discipline:

- Master's-level Health Services
- Upper-division undergraduate Nursing

Because the adjustments were made to the relative weights, formula funding increased for all institutions with semester credit hours at those levels and disciplines. The current matrix distribution is shown in Appendix D and the phase-in distribution is shown in Appendix E. Assuming that no additional I&O formula funding is available, alternative relative weights will further redistribute I&O formula funding among the institutions. With the calculated redistribution, of the approximate $1.5 billion in total I&O formula funding, the annual cost of hold harmless (i.e. ensuring that no institution loses funding) is $8.2 million, or .55 percent of total I&O formula funding.

[3] 61,629,288 / 269,055 = 229, and 2,243,825 / 10,518 = 213

Analysis by Discipline

In addition to developing a methodology to calculate the relative weights from costs that are based on the institutions' Annual Financial Reports, this approach also provides a way to compare the institutions on a discipline and level basis. The Legislature continues to be interested in knowing how much it costs institutions to produce nurses or engineers, for example, and this methodology provides considerable insight. Because the sum of all of an institution's costs and semester credit hours has been allocated to the various levels and disciplines to calculate the relative weights, it is a fairly simple matter to recast these costs to show how the institutions compare to each other. This can be done on a total, per full-time student equivalent basis; on a discipline basis; on a level basis; or a combination of the three.

Total, Full-Time Student Equivalent Comparison

As expected, the research-oriented institutions tend to be relatively costly institutions on a total, full-time student equivalent (FTSE) basis. However, institutions with fairly small student populations also tend to be relatively costly on a total FTSE basis because of the minimum requirements needed to provide higher education services. A fairly substantial investment must be made prior to serving a single student, and cost per FTSE decline as the student body population increases.

Table 4 provides a comparison of Total FTSEs, Total Costs, and the Average Cost per FTSE. The University of Texas at Austin is the costliest public university in the state, largely due to the amount of research conducted there. It has the largest student body in the state (47,676 FTSEs), the highest total cost ($933,266,280), the highest average cost per FTSE ($19,575, which is 85 percent higher than the state average of $10,552). The second costliest university, however, is The University of Texas at Brownsville, which has 5 percent of the University of Texas at-Austin's FTSEs (2,274), 3 percent of its total cost ($30,334,286), but has an average cost per FTSE of $13,341.

Table 4: FY 2004 Average Total Cost Per Full-Time Student Equivalent (FTSE)

Institution	Total FTSE		Total Cost		Avg Cost per FTSE
The University of Texas at Austin	47,676	$	933,266,280	$	19,575
The University of Texas at Brownsville	2,274	$	30,334,286	$	13,341
Texas A&M University*	40,803	$	527,357,388	$	12,925
University of Houston	29,728	$	363,143,837	$	12,216
Texas A&M University at Galveston	1,529	$	17,915,740	$	11,721
The University of Texas at Dallas	11,165	$	129,328,032	$	11,583
University of Houston-Victoria	1,635	$	18,475,721	$	11,300
Texas A&M University-Texarkana	1,059	$	11,545,230	$	10,898
Texas A&M International University	3,246	$	34,132,611	$	10,514
Texas Tech University	26,871	$	281,723,142	$	10,484
Sul Ross State University**	2,484	$	25,792,237	$	10,384
Prairie View A&M University	7,343	$	76,047,206	$	10,356
Texas A&M University-Kingsville	6,003	$	61,382,085	$	10,226
Texas Southern University	9,993	$	94,759,568	$	9,482
University of Houton-Clear Lake	5,472	$	50,585,296	$	9,244
The University of Texas at Tyler	3,749	$	34,356,317	$	9,164
Texas Woman's University	8,326	$	75,314,764	$	9,046
The University of Texas at El Paso	14,632	$	132,244,581	$	9,038
Texas A&M University-Corpus Christi	6,925	$	61,386,388	$	8,864
University of North Texas	26,379	$	230,684,562	$	8,745
The University of Texas of the Permian Basin	2,390	$	19,682,595	$	8,235
The University of Texas at Arlington	20,844	$	170,908,691	$	8,199
Texas State University-San Marcos	23,058	$	188,652,735	$	8,182
Angelo State University	5,373	$	42,167,025	$	7,849
The University of Texas at San Antonio	20,166	$	153,013,473	$	7,588
Lamar University	8,662	$	64,068,749	$	7,397
West Texas A&M University	5,964	$	42,890,029	$	7,191
Texas A&M University-Commerce	7,071	$	50,502,930	$	7,142
Stephen F. Austin State University	10,543	$	74,408,733	$	7,057
Tarleton State University	7,711	$	54,297,344	$	7,042
The University of Texas- Pan American	13,923	$	97,247,357	$	6,985
Sam Houston State University	12,242	$	81,387,117	$	6,648
Midwestern State University	5,393	$	34,681,604	$	6,431
University of Houston-Downtown	8,091	$	49,119,534	$	6,071
Totals	**408,721**	**$**	**4,312,803,188**		
Average Statewide Cost				**$**	**10,552**

*Texas A&M University includes 504 headcount as FTSE and $28,364,585 for Texas A&M College of Veterinary Medicine

**Includes both Sul Ross and Sul Ross-Rio Grande College

Discipline Analysis, on an Average Cost per Semester Credit Hour Basis, by Institution

Both the Coordinating Board and the Legislature continue to be interested in how universities compare in costs per academic discipline. Table 5 on the following page provides this comparison. The numbers in the table show the results of dividing total costs by total semester credit hours (SCHs), on a per discipline basis. SCHs for all levels are included. The result is an average cost per SCH per discipline.

This comparison allows policy makers to see how the institutions spend their formula funds. While the Instruction and Operations formula provides funds on a level and discipline basis, the formula was never intended to be a budgeting mechanism. Institutions have long had the latitude to spend these formula funds in a manner that satisfies their individual missions. Funds received because of engineering or nursing enrollment may be shifted to teacher education if a university desires. Unfortunately, this exacerbates attempts to address workforce shortage issues through the I&O formula because there is no guarantee that the institutions will spend funding in the way the Legislature prefers.

It is important to keep in mind when looking at the results in this table that particularly high average cost per SCH does not necessarily imply that a university has a particularly expensive program. A university may have very few students in a particular discipline, which would spread costs among very few SCH, resulting in a high average cost per SCH. This is the case for Prairie View A&M University in agriculture, which has 76 FTSEs in this discipline and total costs of $5.3 million. Similarly, UT-Brownsville's engineering discipline has an average cost of $1,008 per SCH; on closer inspection, this is a result of $258,105 being spread over 9 FTSEs.

Table 5: FY 2004 Average Total Cost per Semester Credit Hour per Discipline

Institution	Liberal Arts	Science	Fine Arts	Teacher Ed	Ag	Eng	Home Econ	Law	Social Srvcs	Library Science	Vocatn'l Trng	Physical Trng	Health Srvcs	Pharm	Bus Admin	Optometry	Tchr Ed Pract	Tech	Nursng
The University of Texas at Arlington	195	282	276	303	303	540	127		367			329	225		237		241	171	393
The University of Texas at Austin	369	1,209	529	895		1,430	360	727	947	545			669	1,142	457		708	256	990
The University of Texas at Dallas	280	428	194	160		626						102	712		507		275		
The University of Texas at El Paso	249	355	298	357		431	368		360	74		505	514		363		85	3,771	406
The University of Texas- Pan American	183	221	216	321		440	283		398			179	390		313		268	495	389
The University of Texas at Brownsville	439	510	714	430		1,008	947					1,231	506		405		399	805	812
The University of Texas of the Permian Basin	245	301	257	298		511	260		191	526		269	222		393		516		
The University of Texas at San Antonio	165	333	305	373		498						142	158		302		215	220	
The University of Texas at Tyler	224	343	344	391		573	161		228				362		275		366	594	471
Texas A&M University	326	547	227	522	458	671	153					145	275		390		219	303	
Texas A&M University at Galveston	249	509			568	738				328	417	459	241		310			665	
Prairie View A&M University	220	252	204	289	2,460	696	232		1,167	912		277	223		952		502	329	610
Tarleton State University	156	329	203	290	492	268	158		256		175	207	355		196		417	257	414
Texas A&M University-Commerce	227	228	303	259	274	328	267		345	204	170	285	237		272		250	332	
Texas A&M University-Corpus Christi	247	309	333	414	615	448	200		344		509	207	400		305		367	638	551
Texas A&M University-Kingsville	252	351	340	345	1,143	528	513		373		1,072	297	342		315		408	382	
Texas A&M International University	312	342	431	411		558	286		433			219	274		443		293	253	535
Texas A&M University-Texarkana	366	528	399	390		455	315								358		535	782	859
West Texas A&M University	162	229	424	247	542	269	251		214			218	439		226		252	322	703
University of Houston	278	664	376	522		959	188	520	534		279	335	420	699	295	1,216	433	321	
University of Houton-Clear Lake	295	330	318	300		475	442		569	344			430		347		269	661	
University of Houston-Downtown	177	265	179	240		339	147		155						207		273	421	
University of Houston-Victoria	368	429	360	302		367									482		371	470	
Midwestern State University	162	192	338	250		338	113		175		1,350	322	381		222		428	720	330
University of North Texas	254	381	342	405		671	204		207	391	276	264	315		292		424	448	
Stephen F. Austin State University	180	229	281	328	630	266	154		681		286	151	524		246		221	229	358
Texas Southern University	236	257	248	690		383	216	597	516		324	263	479	566	398		437	973	
Texas Tech University	250	415	361	406	745	640	306	495	406	1,125	145	199	418		374		396	390	
Texas Woman's University	230	277	416	347		337	293		319	267		442	459		264		402	388	464
Angelo State University	211	267	372	182	334	437	137					617	301		317		810	138	471
Lamar University	180	267	242	341		536	249		267	89	358	215	317		244		213	528	425
Sam Houston State University	213	209	254	285	228	435	192			354	243	149	218		229		267	226	
Texas State University-San Marcos	244	270	305	316	371	340	271		476		1,292	216	439		303		357	376	
Sul Ross State University	280	584	368	367	490	394					331	330	282		421		497	492	440
Averages for All Institutions	252	476	330	389	545	758	258	608	515	415	376	232	401	829	332	1,216	310	377	512

Conclusion

Preliminary results, based on 2002-2003 biennium data, were submitted to the Legislature in November 2004. This subsequent analysis that includes FY 2004 data was forwarded to the Legislature in March 2005 as part of the Coordinating Board's formula funding request.[4] Because formula funding will be redistributed, a number of institutions that will lose formula funding have opposed its implementation.[5] However, the cost-based methodology represents the only objective starting point for discussing the distribution of I&O formula funding. The current method and the multi-formula method that previously existed were based on negotiated amounts and best guesses. The Coordinating Board recommends basing the matrix on costs and tying those costs to Annual Financial Reports. Special item funding or another type of incentive funding – such as a separate payment for each nursing degree awarded – should be used to provide funding for state needs, such as workforce shortage areas. By taking this approach, the Legislature may then require that non-formula funding be spent on the discipline for which it was intended.

[4] Some additional cost information was provided by a few of the institutions after the March 2005 submission, which would have resulted in an adjustment to the total formula recommendation by an additional $640,000. The largest institutional total change would have been an increase of approximately $81,000, and there would have been a very minor redistribution of funds with only two institutions experiencing losses. These losses would have totaled less than $2,000. These data will be included in the next version of the cost study for the FY 2004 data.

[5] The University Formula Advisory Committee voted 10-8 to adopt the methodology. For the most part, institutions voted according to how they fared in the redistribution of funds. The one exception was an institution that was not in favor of the phase-in, but wanted the cost-based matrix implemented in its entirety.

Appendix A

FY 2002-FY 2003-FY 2004
Sum of All Costs at Public Universities*

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional	Totals**
LIBERAL ARTS	1,656,518,880	972,313,176	465,970,812	323,951,680	-	3,418,754,548
SCIENCE	933,671,439	655,158,117	288,417,205	458,142,010	416	2,335,389,187
FINE ARTS	319,908,418	225,341,058	81,528,876	39,134,542	-	665,912,893
TEACHER ED	61,678,456	279,557,111	394,792,650	161,093,738	-	897,121,955
AGRICULTURE	63,947,434	102,812,104	59,149,055	32,796,353	-	258,704,946
ENGINEERING	293,585,348	566,858,099	559,211,509	439,336,583	-	1,858,991,539
HOME ECONOMICS	55,595,095	66,893,528	21,144,333	11,446,271	-	155,079,227
LAW	-	-	-	-	201,946,796	201,946,796
SOCIAL SERVICE	12,633,911	39,325,125	56,743,245	13,002,162	-	121,704,443
LIBRARY SCIENCE	1,386,388	3,092,557	32,769,937	4,030,821	-	41,279,703
VOCATIONAL TRAIN	2,669,189	1,886,526	-	-	-	4,555,715
PHYSICAL TRAINING	61,629,288	2,243,825	32	-	-	63,873,145
HEALTH SERVICES	52,420,893	101,593,861	100,968,084	15,034,659	-	270,017,497
PHARMACY	373,362	3,897,435	14,264,302	21,802,185	86,327,571	126,664,855
BUSINESS ADMIN	198,858,025	757,604,688	413,077,134	98,828,659	-	1,468,368,505
OPTOMETRY	-	-	6,306,813	11,843,296	32,179,359	50,329,468
TEACHER ED-PRACT	2,130,758	113,962,938	21	-	-	116,093,717
TECHNOLOGY	45,384,364	71,476,333	13,915,729	-	-	130,776,426
NURSING	18,562,336	124,480,409	52,009,305	11,368,047	-	206,420,097
TOTALS	3,780,953,584	4,088,496,890	2,560,269,042	1,641,811,006	320,454,142	12,391,984,662

FY 2002-FY 2003-FY 2004
Sum of All SCHs at Public Universities*

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional	Totals
LIBERAL ARTS	9,701,613	3,223,525	649,604	194,795	-	13,769,537
SCIENCE	3,052,861	1,275,680	209,041	133,185	-	4,670,767
FINE ARTS	1,324,240	557,188	90,054	32,031	-	2,003,513
TEACHER ED	258,870	879,412	908,100	137,230	-	2,183,612
AGRICULTURE	181,764	223,077	45,384	18,313	-	468,538
ENGINEERING	929,850	1,070,305	527,049	168,190	-	2,695,394
HOME ECONOMICS	307,641	215,200	40,543	10,893	-	574,277
LAW	-	-	-	-	332,558	332,558
SOCIAL SERVICE	30,966	83,366	98,604	6,199	-	219,135
LIBRARY SCIENCE	7,261	15,936	64,627	4,343	-	92,167
VOCATIONAL TRAIN	5,531	4,503	-	-	-	10,034
PHYSICAL TRAINING	269,055	10,518	-	-	-	279,573
HEALTH SERVICES	232,491	277,907	159,895	9,249	-	679,542
PHARMACY	2,416	6,865	4,514	4,848	135,222	153,865
BUSINESS ADMIN	1,093,397	2,714,820	733,035	30,049	-	4,571,301
OPTOMETRY	-	-	696	1,061	44,315	46,072
TEACHER ED-PRACT	11,589	367,379	-	-	-	378,968
TECHNOLOGY	142,492	176,745	17,823	-	-	337,060
NURSING	48,528	274,442	57,658	6,248	-	386,876
TOTALS	17,600,565	11,376,868	3,606,627	756,634	512,095	33,852,789

*Excludes costs and SCH for Texas A&M University College of Veterinary Medicine-weights calculated separately
**Rows may not add due to rounding.

Appendix B

Percentage Change Between the Current Matrix and the Phase-In Matrix

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS		-4.9%	3.3%	-9.6%	
SCIENCE	8.5%	0.1%	6.3%	2.2%	
FINE ARTS	-11.8%	-11.9%	-9.3%	-29.5%	
TEACHER ED	4.5%	-2.5%	-10.6%	-15.5%	
AGRICULTURE	0.3%	3.1%	7.5%	-18.0%	
ENGINEERING	-19.3%	-5.2%	-12.1%	-14.3%	
HOME ECONOMICS	-16.5%	-7.1%	-14.8%	-21.5%	
LAW					5.2%
SOCIAL SERVICE	22.8%	25.1%	-20.9%	1.5%	
LIBRARY SCIENCE	-11.4%	-12.6%	-14.8%	-27.8%	
VOCATIONAL TRAIN	47.5%	-2.6%			
PHYSICAL TRAINING	-0.7%	-4.1%			
HEALTH SERVICES	-27.0%	-19.1%	-5.7%	-20.2%	
PHARMACY	-38.7%	-14.2%	52.8%	18.9%	-29.2%
BUSINESS ADMIN	-12.2%	1.4%	-14.0%	19.2%	
OPTOMETRY					
TEACHER ED-PRACT	-27.8%	-14.7%			
TECHNOLOGY	-3.1%	-3.7%	-15.4%		
NURSING	-27.2%	-6.7%	-9.3%	-17.4%	
VET MED					-7.7%

Appendix C

Calculated Weights and Calculated Relative Weights

To calculate the relative weight, divide the sum of total costs by the sum of semester credit hours, per level and discipline. This is shown below. The relative weight of Veterinary Medicine was calculated separately because all data collected on this discipline are based on headcounts and not semester credit hours.

Calculated Weights

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS	171	302	717	1663	
SCIENCE	306	514	1380	3440	
FINE ARTS	242	404	905	1222	
TEACHER ED	238	318	435	1174	
AGRICULTURE	352	461	1303	1791	
ENGINEERING	316	530	1061	2612	
HOME ECONOMICS	181	311	522	1051	
LAW					607
SOCIAL SERVICE	408	472	575	2097	
LIBRARY SCIENCE	191	194	507	928	
VOCATIONAL TRAIN	483	419			
PHYSICAL TRAINING	229	213			
HEALTH SERVICES	225	366	631	1626	
PHARMACY	155	568	3160	4497	638
BUSINESS ADMIN	182	279	564	3289	
OPTOMETRY*					726
TEACHER ED-PRACT	184	310			
TECHNOLOGY	319	404	781		
NURSING	383	454	902	1819	

To create relative weights, divide each weight by the value of lower-division undergraduate liberal arts, so that the weights are portrayed in a “relative” fashion.

Calculated Relative Weights

	Lower-Division	Upper-Division	Master's	Doctoral	Special Professional
LIBERAL ARTS	1.00	1.77	4.20	9.74	
SCIENCE	1.79	3.01	8.08	20.15	
FINE ARTS	1.41	2.37	5.30	7.16	
TEACHER ED	1.40	1.86	2.55	6.88	
AGRICULTURE	2.06	2.70	7.63	10.49	
ENGINEERING	1.85	3.10	6.21	15.30	
HOME ECONOMICS	1.06	1.82	3.05	6.15	
LAW					3.56
SOCIAL SERVICE	2.39	2.76	3.37	12.28	
LIBRARY SCIENCE	1.12	1.14	2.97	5.44	
VOCATIONAL TRAIN	2.83	2.45			
PHYSICAL TRAINING	1.34	1.25			
HEALTH SERVICES	1.32	2.14	3.70	9.52	
PHARMACY	0.91	3.32	18.51	26.34	3.74
BUSINESS ADMIN	1.07	1.63	3.30	19.26	
OPTOMETRY*					7.00
TEACHER ED-PRACT	1.08	1.82			
TECHNOLOGY	1.87	2.37	4.57		
NURSING	2.24	2.66	5.28	10.66	

*Optometry weights are not calculated. Current Optometry matrix weights are used.
Texas A&M University College of Veterinary Medicine weights are calculated separately.

Appendix D

FY 2002-FY 2003-FY 2004[1]
No Phase-In Distribution of Formula Funding

Institution	Annual I&O Matrix Rate @ $51.25	Annual $58.50 Budget Neutral Rate	Annual Difference	Average Annual %age Chng		
The University of Texas at Arlington	87,174,231	84,013,319	-3,160,912	-3.6%		
The University of Texas at Austin	219,209,983	213,991,842	-5,218,142	-2.4%		
The University of Texas at Dallas	55,576,613	53,996,141	-1,580,473	-2.8%		
The University of Texas at El Paso	47,275,423	47,386,827	111,404	0.2%		
The University of Texas- Pan American	40,255,474	40,833,612	578,138	1.4%		
The University of Texas at Brownsville	7,655,895	7,829,428	173,533	2.3%		
The University of Texas of the Permian Basin	6,913,851	7,458,167	544,316	7.9%		
The University of Texas at San Antonio	60,120,634	63,331,213	3,210,579	5.3%		
The University of Texas at Tyler	13,217,418	12,482,890	-734,528	-5.6%		
Texas A&M University	174,529,939	176,958,644	2,428,705	1.4%	-6,076,084	University of Texas System Impact
Texas A&M University at Galveston	4,068,418	4,535,794	467,376	11.5%	4,657,371	Texas A&M University System Impact
Prairie View A&M University	23,456,717	23,389,061	-67,655	-0.3%		
Tarleton State University	23,006,451	24,119,330	1,112,879	4.8%		
Texas A&M University-Commerce	25,802,300	25,320,699	-481,600	-1.9%		
Texas A&M University-Corpus Christi	21,867,722	22,533,464	665,742	3.0%		
Texas A&M University-Kingsville	20,847,640	21,077,014	229,374	1.1%		
Texas A&M International University	9,717,704	9,820,415	102,712	1.1%		
Texas A&M University-Texarkana	3,920,231	3,942,759	22,528	0.6%		
West Texas A&M University	18,592,311	18,769,623	177,312	1.0%		
University of Houston	116,689,460	116,134,367	-555,093	-0.5%	1,208,627	University of Houston System Impact
University of Houton-Clear Lake	24,426,890	24,751,094	324,204	1.3%		
University of Houston-Downtown	19,372,354	20,919,420	1,547,066	8.0%		
University of Houston-Victoria	6,643,229	6,535,679	-107,550	-1.6%		
Midwestern State University	15,220,782	15,378,901	158,119	1.0%		
University of North Texas	89,138,249	90,074,469	936,221	1.1%	936,221	North Texas System Impact
Stephen F. Austin State University	30,388,198	31,192,725	804,527	2.6%		
Texas Southern University	30,961,512	30,069,053	-892,459	-2.9%		
Texas Tech University	96,634,011	99,400,815	2,766,804	2.9%	2,766,804	Texas Tech System Impact
Texas Woman's University	41,878,791	34,507,274	-7,371,517	-17.6%		
Angelo State University	14,532,238	15,150,020	617,781	4.3%	3,808,390	Texas State System Impact
Lamar University	27,118,077	26,567,092	-550,985	-2.0%		
Sam Houston State University	34,781,148	36,461,023	1,679,875	4.8%		
Texas State University-San Marcos	67,847,039	69,490,856	1,643,817	2.4%		
Sul Ross State University	7,416,011	7,833,913	417,902	5.6%		
Totals	1,486,256,942	1,486,256,942	0		-19,784,692	Sum of All Reductions
					-39,569,385	Biennial Cost of Hold Harmless

Notes:

[1] Semester Credit Hours and All Funds are averaged for FY 2002, FY 2003, and FY 2004 to calculate the relative weights. The formula funding estimates above are calculated by multiplying the relative weights by the FY 2004 Semester Credit Hours, which are the latest data currently available.

Appendix E

FY 2002-FY 2003-FY 2004[1]
Phase-In Distribution of Formula Funding
One-Half the Difference with Losses Limited to 3 Percent

Institution	Annual I&O Matrix Rate @ $51.25	Annual $54.33 Budget Neutral Rate	Annual Difference	Average Annual %age Chng		
The University of Texas at Arlington	87,174,231	86,131,767	-1,042,463	-1.2%		
The University of Texas at Austin	219,209,983	216,036,578	-3,173,406	-1.4%		
The University of Texas at Dallas	55,576,613	54,842,363	-734,250	-1.3%		
The University of Texas at El Paso	47,275,423	47,711,999	436,576	0.9%		
The University of Texas-Pan American	40,255,474	40,733,223	477,749	1.2%		
The University of Texas at Brownsville	7,655,895	7,726,732	70,837	0.9%		
The University of Texas of the Permian Basin	6,913,851	7,127,900	214,049	3.1%		
The University of Texas at San Antonio	60,120,634	61,305,570	1,184,935	2.0%		
The University of Texas at Tyler	13,217,418	13,221,991	4,573	0.0%		
Texas A&M University	174,529,939	174,702,213	172,274	0.1%	-2,561,398	UT System Impact
Texas A&M University at Galveston	4,068,418	4,262,668	194,250	4.8%	1,360,222	TAMU System Impact
Prairie View A&M University	23,456,717	23,648,167	191,450	0.8%		
Tarleton State University	23,006,451	23,459,695	453,244	2.0%		
Texas A&M University-Commerce	25,802,300	25,434,250	-368,050	-1.4%		
Texas A&M University-Corpus Christi	21,867,722	22,310,366	442,645	2.0%		
Texas A&M University-Kingsville	20,847,640	20,871,250	23,610	0.1%		
Texas A&M International University	9,717,704	9,831,933	114,229	1.2%		
Texas A&M University-Texarkana	3,920,231	3,925,039	4,808	0.1%		
West Texas A&M University	18,592,311	18,724,074	131,763	0.7%		
University of Houston	116,689,460	115,916,549	-772,911	-0.7%	-152,632	U of Houston System Impact
University of Houston-Clear Lake	24,426,890	24,524,360	97,471	0.4%		
Uuniversity of Houston-Downtown	19,372,354	19,982,287	609,933	3.1%		
University of Houston-Victoria	6,643,229	6,556,105	-87,124	-1.3%		
Midwestern State University	15,220,782	15,494,609	273,828	1.8%		
University of North Texas	89,138,249	89,239,692	101,443	0.1%	101,443	North Texas System Impact
Stephen F. Austin State University	30,388,198	30,854,534	466,336	1.5%		
Texas Southern University	30,961,512	30,384,297	-577,215	-1.9%		
Texas Tech University	96,634,011	97,410,219	776,208	0.8%	776,208	Texas Tech System Impact
Texas Woman's University	41,878,791	40,641,806	-1,236,985	-3.0%		
Angelo State University	14,532,238	14,840,888	308,650	2.1%	1,550,192	Texas State System Impact
Lamar University	27,118,077	26,909,210	-208,867	-0.8%		
Sam Houston State University	34,781,148	35,370,975	589,827	1.7%		
Texas State University-San Marcos	67,847,039	68,555,082	708,043	1.0%		
Sul Ross State University	7,416,011	7,568,550	152,539	2.1%		
Totals	1,486,256,942	1,486,256,942	0		-8,201,271	Sum of All Reductions
					-16,402,542	Biennial Cost of Hold Harmless
					0.55%	Percentage of Annual I&O Funding

Notes:

[1] Semester Credit Hours and All Funds are averaged for FY 2002, FY 2003, and FY 2004 to calculate the relative weights. The formula funding estimates above are calculated by multiplying the relative weights by the FY 2004 Semester Credit Hours, which are the latest data currently available.

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