

**MISSISSIPPI PREPAID AFFORDABLE COLLEGE TUITION  
PROGRAM**

**ACTUARIAL VALUATION  
AND REPORT**

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**JUNE 30, 2007**

**CollegeSavings**  
MISSISSIPPI



Bryan, Pendleton, Swats & McAllister, LLC  
A Wells Fargo Company

September 5, 2007

Board of Directors  
Mississippi Prepaid Affordable College Tuition Program  
State Treasury Department  
501 North West Street, Suite 1101A  
Jackson, MS 39201

To the Board:

The attached report summarizes the actuarial valuation of the Mississippi Prepaid Affordable College Tuition Program ("the Program") as of June 30, 2007. The valuation compares the value of the assets of the prepaid program to the value of expected future tuition payments to beneficiaries. The following pages summarize the actuarial valuation of the trust fund as of June 30, 2007.

A comparison of the assets and liabilities of the trust fund shows that as of June 30, 2007 there remains a deficit of about \$13.5 million, compared to a \$26.2 million deficit as of June 30, 2006.

Our calculations were based on data furnished by InTuition Solutions, Inc. We have not audited the data and we cannot certify as to the accuracy or completeness of the data supplied. Our calculations are based on the actuarial valuation assumptions, chosen by the Board, as presented in this report.

The actuarial valuation summarized in this report has been performed using generally accepted actuarial principles and is based on actuarial assumptions, each of which we consider to be reasonable (taking into account the experience of the plan and reasonable future expectations). It is our opinion that the results fully and fairly disclose the actuarial position of the plan as of the valuation date. The undersigned is an actuary at BPS&M, a member of the American Academy of Actuaries, and has met the Qualification Standards of the American Academy of Actuaries to render actuarial opinions herein.

Sincerely,

Mike Brister  
Fellow, Society of Actuaries  
Principal

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### **Valuation Results**

As of June 30, 2007 the Program has an unfunded liability of about \$13.5 million. In other words, the value of expected liabilities of the trust exceeds the value of assets, including the value of future payments by contract purchasers, by \$13.5 million. The liability amounts are based on actuarial assumptions chosen by the Board. The Program's records administrator, InTuition Solutions, Inc., provided us with information relating to contracts in place as of June 30, 2007. Program staff provided us with information relating to assets and investment returns.

On a funded percentage basis, the plan is 95.2% funded. This compares to a funded percentage of 89.6% as of June 30, 2006. This increase in the funded percentage is due to a higher than assumed return on assets. The return on assets was 15.6% (higher than the assumed 7.8%). The actuarial gain from higher than expected investment returns was offset slightly by higher than expected tuition inflation. The increase in weighted average tuition for four-year universities and colleges was 7.05% (above the assumed 6.5%). The increase in weighted average tuition for junior and community colleges was 0.9% (below the assumed 6.0%).

### **Contract Sales**

As of June 30, 2007 there were 19,593 participants enrolled in the Program. This compares to 18,596 participants in the Program as of June 30, 2006.

The majority of the current contracts are for four-year university (11,072 contracts or 57%). There were also 4,254 two-year junior college plus two-year university contracts (22% of the total) and 1,195 two-year junior college contracts (6% of the total). The other 3,073, or 15% of the contracts, are dispersed across the remaining contract types.

### **Weighted Average Tuition**

The Weighted Average Tuition ("WAT") is the average of tuition and fees for in-state residency at Mississippi colleges and universities weighted in proportion to the number of Mississippi resident students attending each of the schools.

WAT for four-year universities is \$4,758 for the fall of 2007, an increase of 7.1% over the WAT of \$4,445 in the fall of 2006.

WAT for junior colleges is \$1,711 for the fall of 2007, an increase of 0.9% over the WAT of \$1,696 in the fall of 2006.

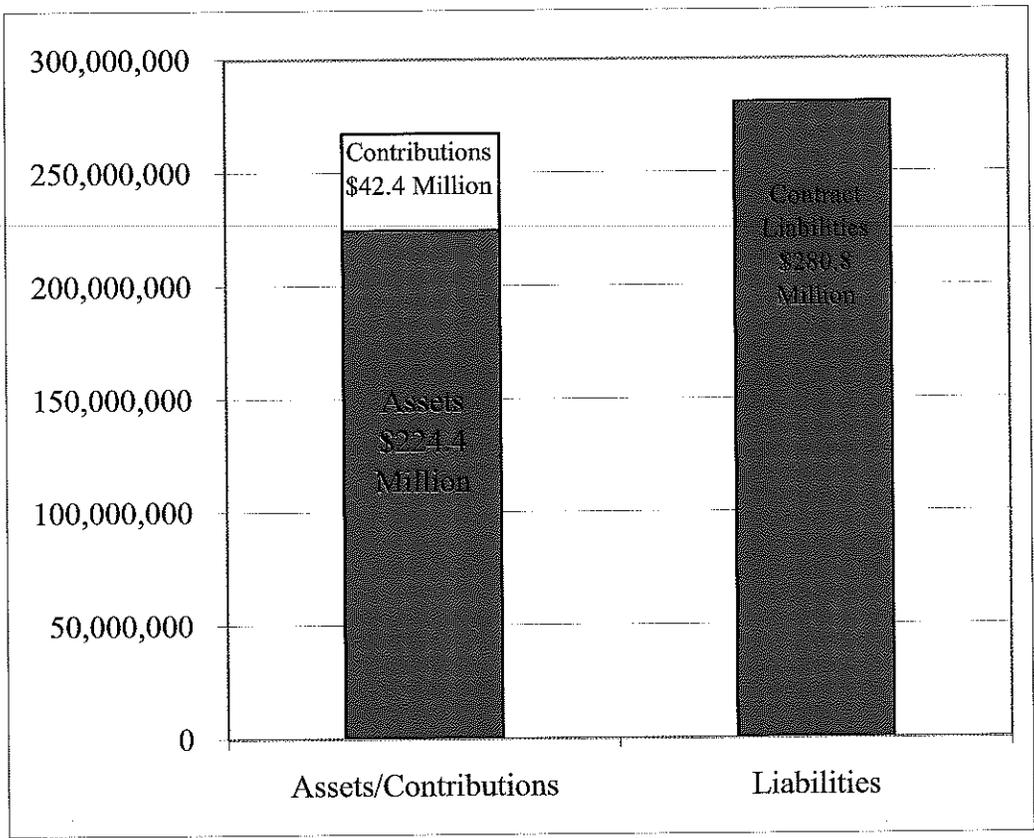
### **Actuarial Assumptions**

Tuition increases are assumed to be 6.5% per year for all future years at universities, and 6.0% per year for all future years at junior colleges. Investments are assumed to return 7.8% per year for all future years. These assumptions, the other assumptions and the methodology are described more fully in the body of this report.

**Funded Status**

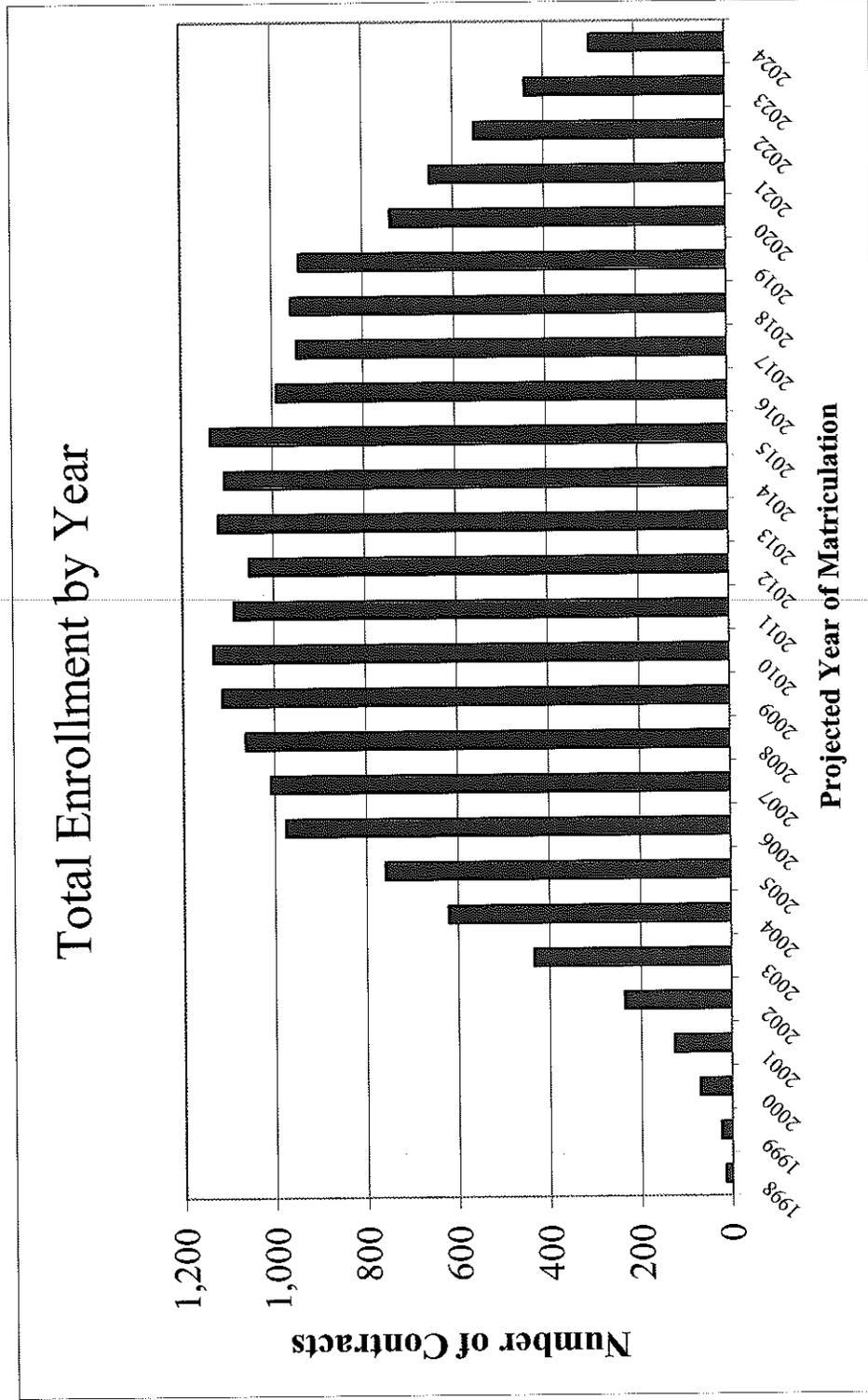
As of June 30, 2007 the expected liabilities of the Program exceeds the value of the assets of the Program (including the value of future payments by contract purchasers) by \$13.5 million. The funded ratio, assets divided by liabilities, is 95.2%, compared to 89.6% a year ago. The assumptions used to perform the actuarial valuation of the fund are described later in this report. The primary assumptions are:

Tuition increases	6.5% per year for four-year universities 6.0% per year for junior colleges
Investment return	7.8% per year

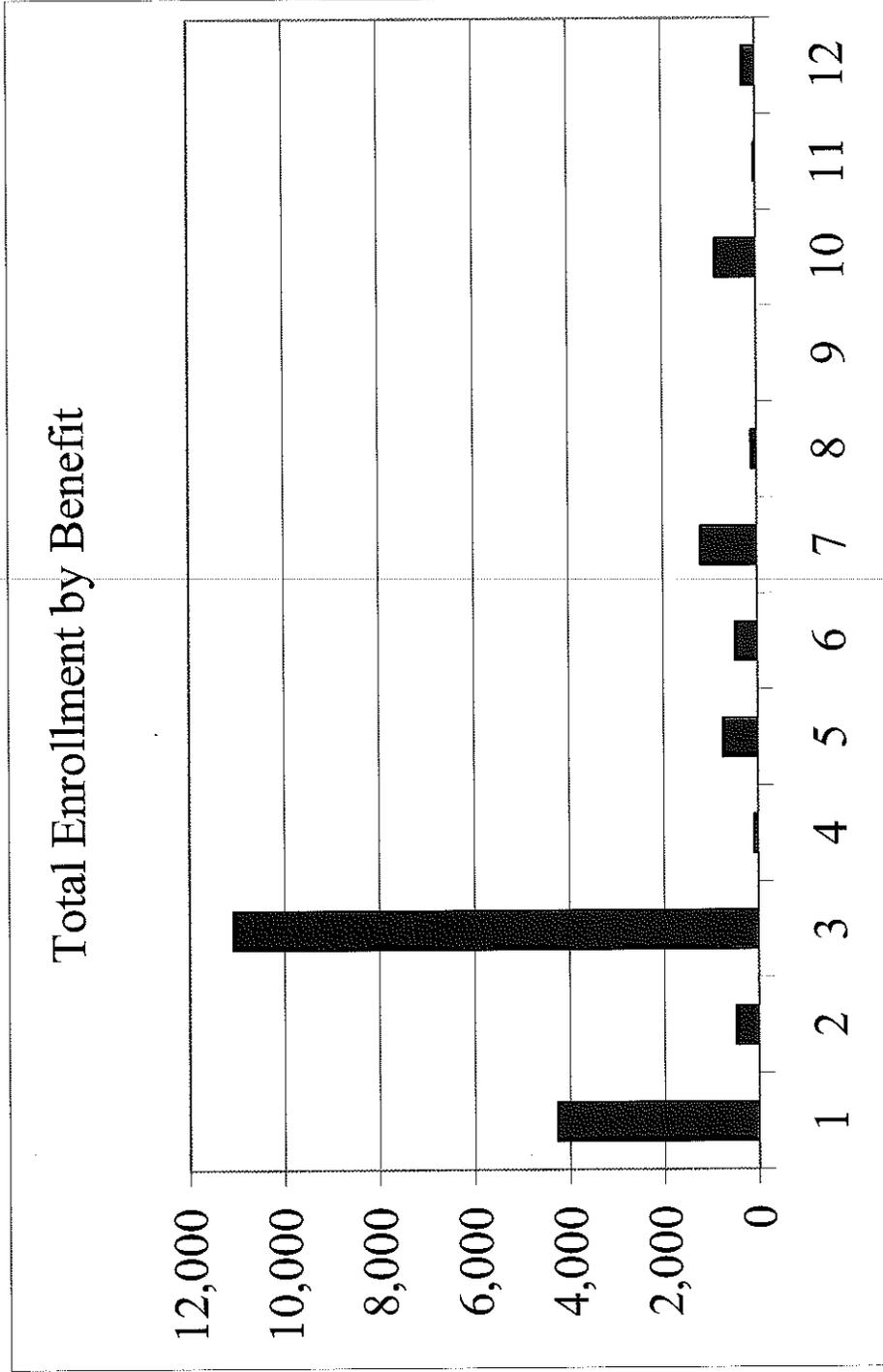


### Contract Sales

Contracts can be purchased for a wide range of ages from newborn through high school senior. The chart below illustrates, based on current participation, the total number of active contracts by expected year of college or university matriculation.



Contracts can be purchased for a variety of plans, from one year to five years of tuition and for junior college, four-year university, or various combinations thereof. The chart below illustrates the total number of current enrollees by type of contract.



Type of Contract	1	2	3	4	5	6	7	8	9	10	11	12
Years Junior College	2	1	0	0	0	0	2	1	1	0	1	2
Years Four-Year College	2	3	4	3	2	1	0	0	1	5	4	3

## Historic Tuition/Fee Increases

The average tuition for four-year universities is assumed to increase 6.5% per year. The average tuition for junior and community colleges is 6.0% per year. The chart below illustrates the actual increases over the last twenty years compared to that assumption.

Fiscal Year Ending	Four Year Colleges and Universities			Junior and Community Colleges		
	Average Tuition/ Fees	Annual Increase	Weighted Average Tuition	Average Tuition/ Fees	Annual Increase	Weighted Average Tuition
1988	1,667	4.94%		614	17.60%	
1989	1,672	0.35%		622	1.30%	
1990	1,837	9.83%		646	3.86%	
1991	1,908	3.86%		686	6.19%	
1992	2,083	9.21%		728	6.12%	
1993	2,314	11.05%		818	12.36%	
1994	2,317	0.15%		942	15.16%	
1995	2,371	2.34%		938	-0.42%	
1996	2,399	1.17%		938	0.00%	
1997	2,426	1.12%		953	1.60%	
1998	2,513	3.59%	2,501	960	0.73%	
1999	2,764	10.00%	2,570	971	1.15%	
2000	2,764	0.00%	2,862	1,015	4.53%	
2001	2,864	3.62%	2,962	1,083	6.70%	
2002	3,294	15.01%	3,408	1,283	18.47%	
2003	3,578	8.62%	3,716	1,395	8.73%	1,392
2004	3,599	0.59%	3,747	1,411	1.15%	1,417
2005	3,850	6.97%	3,988	1,561	10.63%	1,571
2006	4,037	4.86%	4,179	1,692	8.39%	1,677
2007	4,295	6.39%	4,445	1,712	1.18%	1,696
2008	4,563	6.24%	4,758	1,726	0.82%	1,711
Compound Annual Increase						
20 Years		5.17%			5.30%	
15 Years		4.63%			5.10%	
10 Years		6.15%		6.64%	6.04%	
5 Years		4.98%		5.07%	4.35%	4.21%

**Sensitivity of Results to Variations in Experience**

The table below was prepared to illustrate how variations in future experience will affect the current surplus/ (deficit) of the Program. The Program surplus/ (deficit) as of June 30, 2007 is (\$13.5) million under the base set of assumptions as stated in this report.

**Variations in Tuition**

Baseline Assumptions	Surplus/(Deficit):	(\$13.5) million
University tuition inflation higher all years by 25 basis points	Surplus/(Deficit):	(\$19.5) million
University tuition lower in all years by 25 basis points	Surplus/(Deficit):	(\$ 7.6) million
Bias Load is 4% rather than 3%	Surplus/(Deficit):	(\$16.2) million
Bias Load is 2% rather than 3%	Surplus/(Deficit):	(\$10.8) million

**Variations in Investment Income**

Investment income rate lower in all years by 25 basis points	Surplus/(Deficit):	(\$18.8) million
Investment income rate higher in all years by 25 basis points	Surplus/(Deficit):	(\$ 8.4) million

**Break Even Interest Rate**

An investment earnings rate of 8.47% is required for the Program to satisfy all future benefits and expenses in the projection period if other experience is consistent with the actuarial assumptions. This rate is less than last year's result of 9.74%.

**Break Even Inflation Rates**

Maintaining the current relationship that the university inflation rate is 50 basis points greater than the junior college inflation rate, a 5.9% university inflation rate and a 5.4% junior college inflation rate are required for the Program to satisfy all future benefits and expenses in the projection period if other experience is consistent with the actuarial assumptions. These equivalent rates are slightly less than last year's results.

**VALUATION ASSUMPTIONS AND METHODS**

**Actuarial Assumptions**

The assumptions used in the actuarial valuation of the Program are described below. These assumptions were developed by the Board.

**Tuition Increases:** The Weighted Average Tuition for four-year universities is assumed to increase at 6.5% per year. The Weighted Average Tuition for junior colleges is assumed to increase at 6.0% per year.

**Investment Return:** Invested assets are assumed to earn 7.8% per year. The Program is exempt from Federal Income Tax.

**Enrollment of MPACT Beneficiaries:** Beneficiaries are assumed to attend college or university full time commencing with the expected matriculation date (the Fall following high school graduation). Further, it is assumed that the contract beneficiaries will not attend the available colleges and universities in the same proportion as the headcount information that was used to determine the 2006/07 Weighted Average Tuition, but rather attend on average more expensive schools than those included in the aforementioned information. Accordingly, a 3% “bias load” was added to the university Weighted Average Tuition to allow for anti-selection toward matriculation at schools with higher tuition.

**Contract Cancellations:** It was assumed that there would be no contract cancellations.

**Deaths and Disability:** Mortality and disability decrements were not used.

**Actuarial Methods**

The actuarial valuation of the Program is based on projections of tuition and required fees expected to be paid on behalf of Program beneficiaries, and on amounts paid into the Program from contract installment payments. This actuarial valuation is based on the data described and corresponding sources of data described below.

<u>Data</u>	<u>Source</u>
Tuition & required fees at four-year universities	Mississippi Institutions of Higher Learning
Headcount at four-year universities	Mississippi Institutions of Higher Learning
MPACT active contract inventory	InTuition Solutions, Inc.
Tuition & required fees at junior colleges	State Board of Community & Junior Colleges
Headcount at junior colleges	State Board of Community & Junior Colleges

**MPACT Beneficiaries (Appendix B):** The future payments expected to be made to and from the trust fund have been determined based on the number of contracts shown in Appendix C. This information is based on actual enrollment in the program as provided by the above sources.

**Weighted Average Tuition: Four-Year Universities (Appendix C):** The Weighted Average Tuition for public four-year universities in Mississippi is the average of tuition and required fees at each of the four-year universities, weighted by full-time equivalent resident enrollment headcount at each university.

Resident enrollment headcount is the number of undergraduate students eligible to pay in-state tuition at Mississippi four-year universities. The full-time headcounts as of Fall 2006 were used to determine the Weighted Average Tuition.

## VALUATION ASSUMPTIONS AND METHODS

**Weighted Average Tuition: Junior and Community Colleges (Appendix D):** The Weighted Average Tuition for junior and community colleges was determined using the same methodology as for four-year universities, except the weighting was based on the average full-time headcounts at each college for the Fall 2005 and Fall 2006 semesters.

**Annual Increases in Weighted Average Tuition (Appendix E):** The one-year increase in Weighted Average Tuition is shown along with the actual required tuition and fees for all applicable schools. The Weighted Average Tuition rates are used to calculate the prices charged to new contracts for the upcoming year.

Appendix A

Funded Status

Market Value of Assets	224,421,205
Actuarial Present Value of future contract installment payments	<u>42,849,740</u>
Subtotal	267,270,945
Actuarial present value of future payments of tuition and fees	280,786,786
Surplus/(Deficit)	(13,515,841)

Mississippi Prepaid Affordable College Tuition Program

APPENDICES

Appendix BMP ACT Beneficiaries

Projected Enrollment Year	Type of Contract											Total Enrollment by Yr	Percent of Total			
	2+2	1+3	4 Yr Univ	3 Yr Univ	2 Yr Univ	1 Yr Univ	1 Yr Univ	2 Yr Jr Coll	1 Yr Jr Coll	1+1	5 Yr Univ			1+4	2+3	
1998	4	1	8	-	-	-	-	1	-	-	-	-	-	-	14	0.07%
1999	2	1	19	-	-	-	-	-	2	-	-	-	-	-	24	0.12%
2000	21	4	40	-	-	1	1	2	1	1	1	-	-	-	70	0.36%
2001	32	4	75	1	5	7	7	6	2	1	1	-	-	-	127	0.65%
2002	50	11	143	-	7	7	3	17	3	1	1	-	-	-	235	1.20%
2003	100	9	269	2	11	11	7	22	7	2	9	1	2	2	434	2.22%
2004	106	13	413	5	25	25	14	31	14	1	9	-	4	4	621	3.17%
2005	154	22	445	4	37	37	19	52	19	2	15	3	6	759	3.87%	
2006	195	35	570	6	38	38	29	69	29	5	22	-	7	976	4.98%	
2007	207	21	565	5	38	37	29	78	37	12	32	4	10	1,009	5.15%	
2008	231	22	629	4	33	20	20	88	20	6	22	2	6	1,063	5.43%	
2009	238	33	617	4	47	45	45	80	45	11	27	1	11	1,114	5.69%	
2010	259	31	629	5	47	28	28	87	28	2	31	4	10	1,133	5.78%	
2011	237	27	615	3	49	33	33	66	33	7	36	-	14	1,087	5.55%	
2012	256	23	582	5	49	26	26	51	26	10	35	1	15	1,053	5.37%	
2013	269	36	597	4	62	19	19	74	19	7	38	1	13	1,120	5.72%	
2014	245	31	614	5	35	30	30	81	30	6	41	-	18	1,106	5.64%	
2015	263	36	666	1	33	25	25	63	25	3	35	1	10	1,136	5.80%	
2016	219	20	568	6	37	20	20	60	20	9	34	2	15	990	5.05%	
2017	217	21	497	5	34	20	20	58	20	6	57	4	26	945	4.82%	
2018	191	21	533	6	31	20	20	45	20	5	85	5	15	957	4.88%	
2019	181	26	522	5	33	17	17	43	17	6	82	3	21	939	4.79%	
2020	167	8	406	3	21	17	17	31	17	6	53	3	24	739	3.77%	
2021	167	7	313	2	23	16	16	33	16	4	66	2	18	651	3.32%	
2022	106	5	319	1	19	11	11	26	11	1	45	1	18	552	2.82%	
2023	81	5	252	2	17	6	6	21	6	-	49	-	8	441	2.25%	
2024	55	1	166	1	6	5	5	10	5	4	39	-	11	298	1.52%	
	4,253	474	11,072	85	738	472	472	1,195	472	117	865	38	282	19,593		
	21.71%	2.42%	56.51%	0.43%	3.77%	2.41%	2.41%	6.10%	2.41%	0.60%	4.41%	0.19%	1.44%	100.00%		

## Appendix C

## Weighted Average Tuition Calculation – Four Year Universities

<b>Institution</b>	<b>Full Time Equivalent Enrollment Fall 2006</b>	<b>Percentage of Total</b>	<b>Tuition and Required Fees 2008 Fiscal Yr</b>
Alcorn State University	2,905	5.73%	4,323
Delta State University	3,016	5.95%	4,248
Jackson State University	6,000	11.83%	4,477
Mississippi State University	11,408	22.49%	4,978
Mississippi University for Woman	1,909	3.76%	4,209
Mississippi Valley State University	2,426	4.78%	4,417
University of Mississippi	12,170	24.00%	4,934
University of Southern Mississippi	10,880	21.45%	4,915
<b>Total</b>	<b>50,714</b>		
		<b>Weighted Average</b>	<b>4,758.00</b>
		<b>Semester Hour</b>	<b>148.69</b>
		<b>Quarter Hour</b>	<b>99.13</b>

## Appendix D

## Weighted Average Tuition Calculation – Junior and Community Colleges

	Resident Enrollment Fall 2005	Resident Enrollment Fall 2006	Average Resident Enrollment	Tuition and Required Fees 2008 Fiscal Yr.
Coahoma Community College	1,898	1,772	1,835	1,800
Copiah-Lincoln Community College	3,011	3,112	3,062	1,800
East Central Community College	2,350	2,189	2,270	1,550
East Mississippi Community College	4,173	4,279	4,226	1,820
Hinds Community College	10,142	9,646	9,894	1,740
Homes Community College	4,894	4,876	4,885	1,424
Itawamba Community College	4,980	5,213	5,097	1,660
Jones Community College	4,841	4,467	4,654	1,760
Meridian Community College	3,435	3,506	3,471	1,630
Mississippi Delta Community College	3,082	2,822	2,952	1,920
Mississippi Gulf Community College	7,804	8,822	8,313	1,662
Northeast Mississippi Community College	3,133	3,189	3,161	1,894
Northwest Mississippi Community College	6,289	6,294	6,292	1,700
Pearl River Community College	3,586	3,791	3,689	1,726
Southwest Mississippi Community College	1,769	1,752	1,761	1,800
<b>Total</b>	<b>65,387</b>	<b>65,730</b>	<b>65,559</b>	
			Weighted Average	1,711.52
			Semester Hour	53.48
			Quarter Hour	35.66

## Appendix E

Weighted Average Tuition	Annual Increase in Weighted Average Tuition		Increase	% Change
	2005-2006	2006-2007		
<b>Universities</b>				
1 Year	4,444.52	4,758.00	313.48	7.05%
4 Year	17,778.08	19,032.00	1,253.92	7.05%
Per Semester Hour	138.89	148.69	9.80	7.05%
Per Quarter Hour	92.59	99.13	6.53	7.05%
Lump Sum Payment One Year	4,700.00	5,067.00	367.00	7.81%
<b>Community Colleges</b>				
1 Year	1,696.46	1,711.52	15.06	0.89%
4 Year	3,392.92	3,423.04	30.12	0.89%
Per Semester Hour	53.01	53.49	0.48	0.90%
Per Quarter Hour	35.34	35.66	0.32	0.90%
Lump Sum Payment One Year	1,790.00	1,814.21	24.21	1.35%

## Tuition and Required Fees Fiscal 2007

	1 Year	4 Year
Alcorn State University	4,323	17,292
Delta State University	4,248	16,992
Jackson State University	4,477	17,908
Mississippi State University	4,978	19,912
Mississippi University for Women	4,209	16,836
Mississippi Valley State University	4,417	17,668
University of Mississippi	4,934	19,736
University of Southern Mississippi	4,915	19,660
	1 Year	2 Year
Coahoma Community College	1,800	3,600
Copiah-Lincoln Community College	1,800	3,600
East Central Community College	1,550	3,100
East Mississippi Community College	1,820	3,640
Hinds Community College	1,740	3,480
Homes Community College	1,424	2,848
Itawamba Community College	1,660	3,320
Jones Community College	1,760	3,520
Meridian Community College	1,630	3,260
Mississippi Delta Community College	1,920	3,840
Mississippi Gulf Community College	1,662	3,324
Northeast Mississippi Community College	1,894	3,788
Northwest Mississippi Community College	1,700	3,400
Pearl River Community College	1,726	3,452
Southwest Mississippi Community College	1,800	3,600