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August 29, 2008

The Honorable Converse A. Chellis, III  
Treasurer, State of South Carolina  
118 Wade Hampton Building  
Columbia, SC 29201

Dear Treasurer Chellis:

We have completed our actuarial analysis of the Fund ("the Fund") for the South Carolina Tuition Prepayment Program ("SCTPP" or "the Program") as of June 30, 2008. This report presents our findings with respect to the Fund's expected cash flows and adequacy of the Fund. The analyses have been prepared in accordance with generally accepted actuarial principles and practices commonly applicable to similar types of arrangements.

Currently the expected value of liabilities is \$189,417,427 and the value of assets is \$151,779,823, for a difference of \$37,637,604. The funded ratio is 80.1% of liabilities. For comparison purposes, in 2007 the deficit was \$37,926,148 and the funded ratio was 81.4%.

In making our projections, we have included the effects of the statutory limitation on benefits to Program participants to a maximum of seven percent annual increase. You should also note that we have not assumed any further sales of prepaid tuition contracts.

The results above are based on assumptions approved by SCTPP personnel after consultation with us.

\* \* \* \* \*

We appreciate the opportunity to serve the State of South Carolina. Any questions about the report should be directed to me at (770) 752-5656.

Very truly yours,

Robert B. Crompton, FSA, MAAA  
Vice President  
Actuarial Resources Corporation

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## I. EXECUTIVE SUMMARY

The following are the key findings of our analysis.

### *Adequacy of the Fund*

The Fund's liabilities exceed its assets by \$37,637,604. The key results are shown below.

<b>Value as of June 30, 2008</b>	<b>Assets and Liabilities</b>
Assets	
Investments	\$138,399,114
Future Contract Payments	<u>13,380,709</u>
Total Assets	<u>\$151,779,823</u>
Liabilities and Surplus	
Future Contract Benefits	\$188,983,485
Other Liabilities	<u>433,942</u>
Total Liabilities	<u>\$188,663,405</u>
Surplus	<u>(\$37,637,604)</u>
Total Liabilities and Surplus	<u>\$151,779,823</u>
Funded Ratio	80.1%

### *Adequacy Methodology*

In making our projections of the surplus in the table immediately above, we assume that the Program will not sell any additional prepaid tuition contracts. This is a conservative limitation that provides a static "snapshot view" of the Program as of June 30, 2008.

### *Investment Strategy*

Based on discussions with Program personnel, the investment strategy of SCTPP is anticipated to be 45% domestic equities and 15% International equity index fund (total 60% equities) and 40% domestic fixed income. The State Treasurer's Office has adopted this strategy based on their discussion with their investment advisors at Jamison, Eaton, & Wood, Inc.

The objective of the increase in overall equities and the investment in international equities is to provide diversification and higher portfolio returns than would be

available from a portfolio consisting mainly of fixed income investments. The assumption for investment returns is based on the recommendation of South Carolina Treasury personnel and the advice of Jamison, Eaton, & Wood, Inc. We have not reviewed the strategy nor are we expressing an opinion on the strategy.

Key economic assumptions are listed below.

<b>Key Assumptions</b>	
<b>Yield on Investments</b>	
All future years	7.25%
<b>Asset Allocation</b>	
Cash & fixed income	40%
Equities	60%
<b>Tuition Inflation</b>	
For those attending SC public universities	7.0%
All others	8.0%
<b>Bias Load</b>	
All Years	3.0%

The assumption for investment returns is based on the recommendation of South Carolina Treasury investment personnel, who considered the likely returns of a 40% fixed income, 60% equity portfolio.

### III. RELIANCES & ACTUARIAL STANDARDS

In making the projections on which this report is based, we relied on the following information supplied to us as indicated below.

- Tuition and fee amounts at South Carolina public institutions of post-secondary education, supplied by the Office of the State Treasurer,
- Headcount at South Carolina public institutions of post-secondary education, supplied by the Office of the State Treasurer,
- Market value of assets of the Program's trust fund, supplied by the Office of the State Treasurer,
- Inventory of Program contracts, supplied by InTuition Solutions, Inc., the Program's records administrator,
- Assumptions regarding future investment returns on the Program's trust fund, supplied by the Office of the State Treasurer, after consultation with me regarding reasonableness and comparability to assumptions at other programs with similar investment profiles.

There are no actuarial standards of practice that apply specifically to prepaid tuition plans. However, there are two general standards that we believe apply:

- Actuarial Standard of Practice #23 "Data Quality". This standard sets guidelines on review of data supplied by a third-party. We have performed reasonableness and consistency checks on the data supplied to us by personnel of the Program and by the records administrator, and are in compliance with this standard. Our review of the data was not an audit of the data.
- Actuarial Standard of Practice #41 "Actuarial Communications". This standard sets general guidelines for actuarial communications. This report is in compliance with this standard.

## IV. DESCRIPTION OF THE PROGRAM

The Program was created in 1997 by the South Carolina Legislature to “...assist the citizens of South Carolina with the expense of college by providing an advanced payment program for tuition at a fixed and guaranteed level for public colleges and universities.” The Office of the South Carolina State Treasurer administers the Program. The Program is summarized below. This summary is provided for explanation purposes only, and the Program will be governed by the provisions of the enabling legislation and Treasury procedures.

### *Types of Contracts*

Existing contracts are comprised of two types. Both types provide for tuition and mandatory fees imposed by public higher education institutions in the State of South Carolina.

The four-year college/university contract provides for up to eight semesters of tuition and fees at any accredited senior higher education institution. The benefits provided for under this contract may also be used to provide for junior college tuition and fees or a combination of junior and senior college tuition and fees.

The two-year college/university contract provides for up to four semesters of tuition and fees at any accredited senior higher education institution. The benefits provided for under this contract may also be used to provide for junior college tuition and fees or a combination of junior and senior college tuition and fees.

### *Types of Contract Payment Options*

There are three payment options for existing contracts:

- Lump-sum payments,
- 48 monthly installment payments and
- Extended payments, which are monthly installment payments which run until the year of anticipated matriculation of the beneficiary.

### *Refunds*

If the beneficiary dies or becomes disabled, then the purchaser will receive a refund equal to the lesser of the current Weighted Average Tuition or payments accumulated at interest. Applicable interest is determined by Treasury on a year-to-year basis.

If the beneficiary is awarded a scholarship, the contract owner may obtain a refund equal to the lesser of the current Weighted Average Tuition or payments accumulated at interest. This refund is available only after the beneficiary has reached his projected enrollment year.

Rollovers to the South Carolina Future Scholar 529 College Savings Plan receive a refund equal to contract payments accumulated at 2% interest per year.

Voluntary terminations receive a refund equal to contract payments accumulated at 2% interest per year, less a deduction of the lesser of \$150 or 50% of the sum of all payments.

Involuntary terminations receive a refund equal to contract payments accumulated at 2% interest per year, less a deduction of the lesser of \$150 or 50% of the sum of all payments.

### *Change of Beneficiary*

Generally, a contract owner can change the beneficiary at any time provided that the new beneficiary is the same age or younger than the original beneficiary, and is a member of the current beneficiary's immediate family.

### *Age Limit on Benefits*

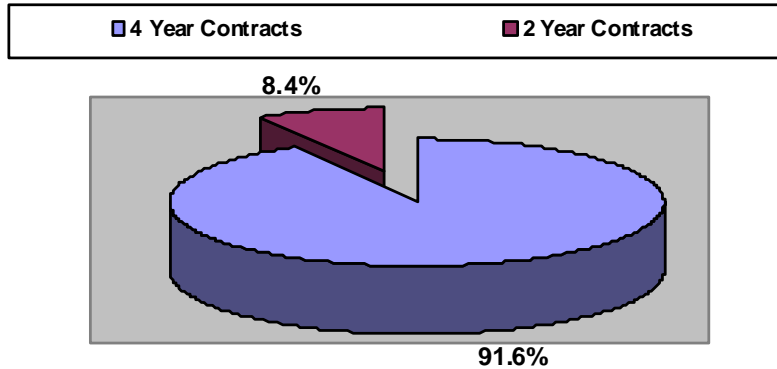
Benefits are available until the beneficiary is age 30. This limit may be extended to age 34 if the beneficiary has military service.

## V. SUMMARY OF CONTRACT DATA AND CURRENT ASSETS

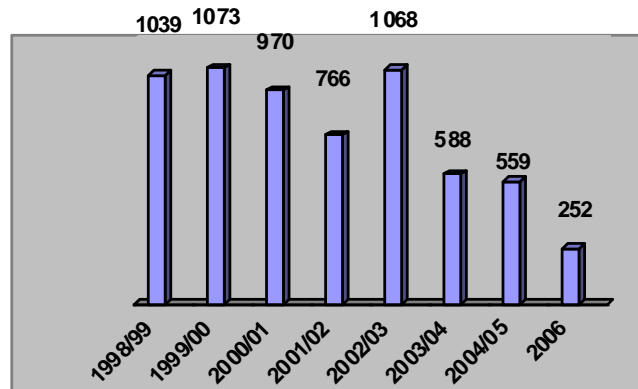
### *Contract Data*

Data on the number of outstanding contracts, contributions, was provided by InTuition, Inc., the Program's records administrator. The graphs below summarize the data provided concerning these contracts.

**Distribution of Contracts by Contract Type**

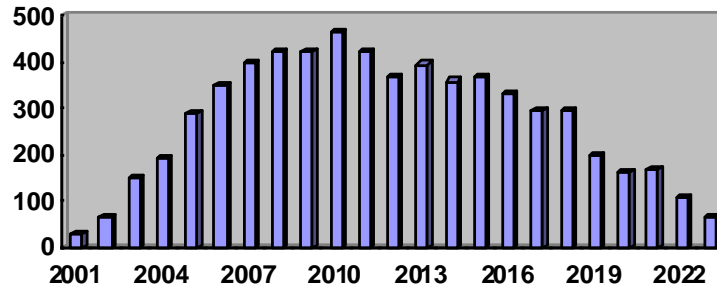


**Distribution of Contracts by Enrollment Year**

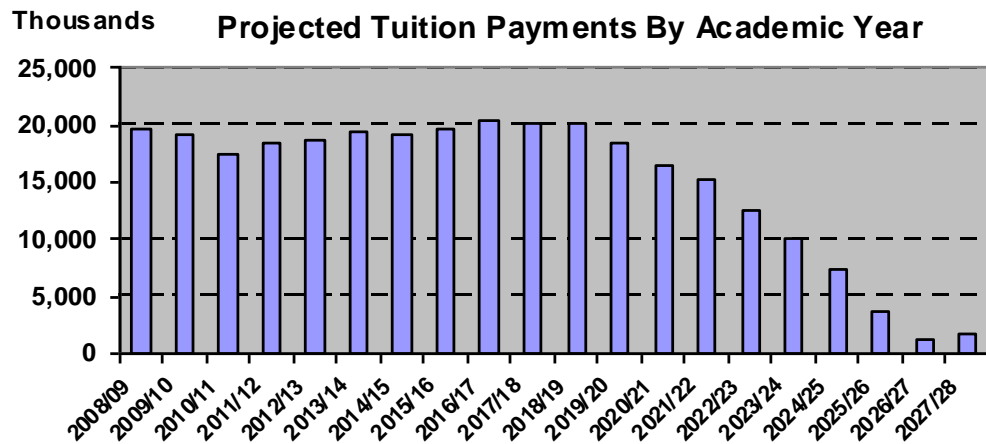




### Distribution By Year of Matriculation



The benefit payments for tuition generated by these contracts are shown in the chart immediately below.



### Current Assets

As of June 30, 2007 the Program’s assets were deployed in a mix of fixed income investments and equity investments. The allocation of assets to each class is shown in the following table.

### Fund Investments

The market value of Program assets is shown in the table below.

Market value of assets held as of June 30, 2008		
	Amount	% Of Total
Cash & Fixed Income	64,569,998	46.66%
Domestic Equity	60,044,173	43.38%
International Equity	13,784,943	9.96%
<b>TOTAL</b>	<b>138,399,114</b>	<b>100.0%</b>

## VI. ACTUARIAL METHODS AND ASSUMPTIONS

### *Methods*

The actuarial method for the determination of the adequacy of the Fund consists of projecting future tuition rates, future expenses based on the average anticipated number of contracts and future utilization of contracts. Future benefits and expenses are discounted using the assumed investment yield as the interest discount rate. The assumed discount rate is based on the current and anticipated mix of assets of the Fund.

For the projection of future benefits, the analysis proceeds as follows:

- Project future tuition rates for all years under consideration. Future tuition is based on the assumptions for tuition inflation.
- Determine the nominal cost of future benefit payments.
- Determine the nominal value of expenses.
- Determine the nominal value of future contract payments.
- Determine the present value of future contract benefits, future expenses and future revenue based on the investment yield assumptions.
- Perform projections for all of the Program's beneficiaries to determine if the Fund is adequate in the aggregate.
- In making our projections of the surplus, we assume that the Program will not sell any more contracts. This is a conservative limitation that provides a static “snapshot view” of the Program as of June 30, 2007.

## *Assumptions*

Actuarial assumptions used to determine financial soundness of programs are of two general types: economic and demographic. Demographic assumptions determine the expected exposure to financial claims and generally answer the question "How and when will people use their contractual benefits?" Economic assumptions are concerned with the expected level of benefit usage and answer the question "What is the expected value of benefit usage?" The assumptions that we used were those that were approved by the South Carolina Treasurer's Office, after consultation with us.

### Economic Assumptions

Economic assumptions are used to estimate the annual tuition rates at two and four year colleges, increases in Fund expenses, and Fund earnings on assets invested. Because inflation is a major component of the rate of increase in tuition rates and of investment returns, we considered these rates together. We believe that the difference in these rates is more important than the absolute level of the rates. The following paragraphs describe the economic assumptions used in this study.

#### *Federal Income Tax*

We assumed that Fund earnings are exempt from Federal Income Tax.

#### *Annual Tuition Rates and Bias Load*

Our assumptions were guided by our observations of historic tuition increases, trends in postsecondary enrollment in South Carolina and the level of legislative appropriations for postsecondary schools in South Carolina.

The Bias Load assumption accounts for Program enrollment at institutions that are more expensive than the Weighted Average Tuition. The choice of this assumption was based on a review of Program experience and what we have seen in other prepaid tuition programs.

The assumptions for tuition inflation and bias load are shown in the table immediately below.

<b>Tuition Inflation</b>	
For those attending SC public universities	7.0%
All others	8.0%
<b>Bias Load</b>	
All Years	3.0%

The tuition inflation assumption for those attending public universities in South Carolina is based on the statutory limit on benefit increases for Program beneficiaries. The inflation assumption for all others is based on an assumed average increase the Weighted Average Tuition of 9% (same assumption as last year), applicable to 50% of those who attend either private college or out-of-state, and an increase in private tuition of 7% applicable to the other 50% of those who attend either private college or out-of-state. These assumptions were based on experience of the Program through June 2008.

#### *Fund Earnings Rate*

In setting our assumptions for the yield on assets, we relied on input from Treasurer's Office personnel and their investment advisor, Jamison, Eaton & Wood, Inc.

Our investment yield assumption is:

7.25% for all future.

This assumption is based upon the recommendation of the Program's in-house investment advisor.

Although we do not expect the Fund to realize this exact rate in any year, we believe it represents a reasonable earnings rate over the time horizon of this report. In some years the Fund will have yields in excess of the assumed rate, while in other years the Fund will earn less than this rate.

#### *Annual Expenses*

Expense projections are based on current expense rates from the Records Administrator plus additional expenses based on other advisement expenses and internal allocations.

#### Demographic Assumptions

The demographic assumptions used in this report are based on our experience with similar types of liabilities. Our choice of assumptions is based on recent experience and our best estimates as to future events. These assumptions are as follows:

#### *Mortality and Disability*

We assumed that there would be no terminations due to death or disability.

*At-Will Termination of Contract*

Our projections include assumptions regarding voluntary termination of contracts prior to matriculation. These assumptions vary by payment type and by number of years from contract purchase. These assumptions are shown in the following table.

	<b>Lump Sum</b>	<b>48 Months Payments</b>	<b>Extended Payments</b>
Year of purchase	2.0%	5.0%	8.0%
Year of purchase+1	2.0%	4.0%	7.0%
Year of purchase+2	2.0%	3.0%	6.0%
Year of purchase+3	1.5%	2.0%	5.0%
Year of purchase+4	1.5%	1.0%	4.0%
Year of purchase+5	1.5%	1.0%	3.0%
Year of purchase+6	1.5%	1.0%	2.0%
Year of purchase+7	1.0%	1.0%	2.0%
Year of purchase+8	1.0%	1.0%	2.0%
Thereafter	1.0%	1.0%	1.0%

*Matriculation Percent*

All beneficiaries are assumed to matriculate at the matriculation date specified in the application, except for those who are projected to terminate.

*Utilization of Benefits*

Four-year contract beneficiaries are assumed to use their benefits ratably over four years, while two-year contract beneficiaries are assumed to use their benefits ratably over two years. However, for contracts which are past their anticipated matriculation date, but have not used any benefits, all benefits are projected to be used completely over the next two years.

We believe that this is a conservative assumption since experience at other prepaid tuition programs, and universities in general, indicates that the average student takes somewhat longer than four years to complete a four-year degree.

*Dropout Rate*

All beneficiaries are assumed to use 100% of their contractual benefits once they have enrolled in college.

### *Frequency of Beneficiary Replacement*

Since all surviving beneficiaries are expected to matriculate and are expected to use their benefits until completion, the assumption is made that no replacement of beneficiaries will occur.

## VII. ADEQUACY OF THE FUND AS OF JUNE 30, 2008

In determining the adequacy of the Fund, we estimated the future disbursements for higher education expenses of beneficiaries, expenses and refunds for terminated contracts. We also projected the future assets based on current assets and expected earnings on assets. We believe these estimates are reasonable based on the information available and our past experience and judgment.

The estimates of the prospective assets and liabilities of the Fund are summarized in the table on the following page and demonstrate the financial position of the Fund. The value of all assets is \$151,779,823 while the expected value of all liabilities is \$189,417,427. The expected present value of the excess of liabilities over assets is \$37,637,604. This compares to the prior year's deficit of \$37,926,148.

The deficit will change from year to year due to positive and negative cash flows and due to the change in the present value of future benefit usage and expense payments because of the passage of time. The deficit will also change due to the variance of experience from the assumptions. These variances include tuition increases, investment income and expenses.

The deficit will also change due to the updating of the assumptions to reflect the Program's emerging experience. The changes for the year ending June 30, 2008 are summarized in the table below.

<b>Progression of Surplus/(Deficit)</b>	
Surplus at June 30, 2007	(\$ 37,926,148)
Projected Change to June 30, 2008 <sup>1</sup>	(2,749,646)
Gain From Legislative Cap on Benefits <sup>2</sup>	19,945,438
Loss From Unfavorable Investment Experience	(15,187,796)
Change due to Additional Contract Sales	N/A
Changes due to Expense Change	(320,081)
All Other Experience Items <sup>3</sup>	(1,399,371)
Surplus at June 30, 2008	(\$ 37,637,604)

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<sup>1</sup> The actuarial items in this valuation incorporate the time value of money. This time value adjustment changes each year. As long as assets and liabilities are not exactly equal, the surplus or deficit will change each year as the time value of money adjustment changes. If our assumptions are exactly realized for the year 2008/09, then the deficit will change from (\$37,317,523) to (\$40,023,043) due to the change in the time value of money adjustment.

<sup>2</sup> In 2008 the Legislature implemented a statutory limit of 7% per annum on increases to benefits payable at public colleges and universities in South Carolina.

<sup>3</sup> Other experience items consist principally of differences between actual and projected contract cancellations.



In the following chart we show the value of expected future benefit usage, expected future payments, current assets and expected surplus as of the end of each future year for contracts in place as of June 30, 2008. Note that existing assets are projected to be sufficient to meet future liabilities through 2018.

**PRESENT VALUE OF ASSETS AND LIABILITIES**

Fiscal Year Ending	Value of Assets	Present Value of Future Benefits And Expenses	Surplus/ (Deficit)
2008	151,779,823	189,417,427	(37,637,604)
2009	139,788,229	180,154,559	(40,366,330)
2010	128,306,753	171,599,642	(43,292,889)
2011	118,076,495	164,508,119	(46,431,623)
2012	106,439,585	156,237,501	(49,797,916)
2013	93,765,749	147,174,014	(53,408,265)
2014	79,608,023	136,888,387	(57,280,364)
2015	64,672,836	126,106,026	(61,433,190)
2016	48,286,488	114,173,585	(65,887,097)
2017	29,998,120	100,662,031	(70,663,911)
2018	10,840,987	86,628,032	(75,787,045)
2019	(9,630,899)	71,650,707	(81,281,605)
2020	(29,689,255)	57,485,267	(87,174,522)
2021	(49,154,239)	44,340,436	(93,494,675)
2022	(68,807,174)	31,465,865	(100,273,039)
2023	(86,845,772)	20,697,062	(107,542,834)
2024	(103,691,382)	11,648,308	(115,339,689)
2025	(118,860,182)	4,841,635	(123,701,817)
2026	(131,392,498)	1,277,700	(132,670,199)
2027	(142,288,788)	- 0 -	(142,288,788)

## VIII. STOCHASTIC ANALYSIS

We have updated the model used for stochastic projections. In the last two years, we used a model in which equity returns were realized as a spread against risk free rates. This year, we have changed our equity return model to a regime-switching model. We believe that this will provide for more a better model of returns and inflation than the previous model.

For domestic equities, our regime switching models retain a connection to the risk-free return through a regression parameter applicable to both regimes. In addition, our regime switching model has a probability of switching regimes that is conditional on the current regime. This differs from the regime-switching models discussed in the financial literature, which have regime switching probabilities which are unconditioned.

As in the prior model, parameters are determined through Bayesian techniques.

### ***Risk-Free Return Model***

We modeled risk-free returns according to a lognormal distribution. Technically, we modeled the natural logarithm of the risk free returns as a normal distribution. Modeling the natural logarithm as a normal distribution is exactly equivalent to modeling the underlying value as a lognormal distribution.

Our model for the change in the natural log of the risk free returns is:

$$Y_t = \text{Normal}(\mu_t, \sigma_t)$$

Where:

$Y_t$  is the natural logarithm of the risk-free return for year  $t$

$\mu_t = -3.3 + .8434 (Y_{t-1} + .03538)$  for the high-volatility regime

$\mu_t = -5.711 + .8434 (Y_{t-1} + .03538)$  for the low-volatility regime

$\sigma_t = .3093$  for the high-volatility regime

$\sigma_t = .2833$  for the low-volatility regime

$p_1 = .0304$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .6461$  This is the probability of moving from the low volatility regime to the high-volatility regime

### ***Large-Cap Equity Returns***

The return model for large-cap equities is a regime-switching model with a regression term based on the change in the risk free returns.

$$Z_t = \text{Normal}(\mu_t, \sigma_t)$$

Where:

$Z_t$  is the return for year  $t$

$\mu_t = .07874 - .2.482 (Y_t - Y_{t-1})$  for the high-volatility regime.

$\mu_t = .12707 - .2.482 (Y_t - Y_{t-1})$  for the low-volatility regime.

$Y_t$  &  $Y_{t-1}$  are the risk free returns for the current and prior years respectively.

$\sigma_t = .2147$  for the high-volatility regime

$\sigma_t = .176$  for the low-volatility regime

$p_1 = .7168$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .0967$  This is the probability of moving from the low volatility regime to the high-volatility regime

### *Small-Cap Equity Returns*

The return model for small-cap equities is a regime-switching model with a regression term based on the change in the risk free returns and an autoregressive term.

$$X_t = \text{Normal}(\mu_t, \sigma_t)$$

Where:

$X_t$  is the return for year  $t$

$\mu_t = .1834 - 3.655 (Y_t - Y_{t-1}) + .04948 (X_{t-1} - .162353)$  for the high-volatility regime.

$\mu_t = .18416 - 3.655 (Y_t - Y_{t-1}) + .04948 (X_{t-1} - .162353)$  for the low-volatility regime.

$Y_t$  &  $Y_{t-1}$  are the risk free returns for the current and prior years respectively.

$\sigma_t = .2329$  for the high-volatility regime

$\sigma_t = .1889$  for the low-volatility regime

$p_1 = .3836$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .3512$  This is the probability of moving from the low volatility regime to the high-volatility regime

### *International Equity Returns*

The return model for international equities is similar to the large-cap equity model except that the regression term is based on large-cap returns rather than risk free returns.

$$W_t = \text{Normal}(\mu_t, \sigma_t)$$

Where:

$W_t$  is the return for year  $t$

$\mu_t = .08677 + .5752 * Z_t$  for the high-volatility regime.

$\mu_t = .05855 + .5752 * Z_t$  for the low-volatility regime.

$Z_t$  is the large cap return for the current.

$\sigma_t = .221$  for the high-volatility regime

$\sigma_t = .3166$  for the low-volatility regime

$p_1 = .5987$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .1866$  This is the probability of moving from the low volatility regime to the high-volatility regime

### *Fixed Income Spreads*

Our model for fixed income returns is a regime-switching spread against risk-free returns.

$$V_t = \text{Normal}(\mu_t, \sigma_t)$$

Where:

$V_t$  is the spread for year t

$\mu_t = .01998$  for the high-volatility regime.

$\mu_t = .013057$  for the low-volatility regime.

$\sigma_t = .09965$  for the high-volatility regime

$\sigma_t = .0576$  for the low-volatility regime

$p_1 = .8273$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .0319$  This is the probability of moving from the low volatility regime to the high-volatility regime

### *Weighted Average Tuition Inflation*

We modeled WAT tuition inflation as regime-switching Beta distributions.

$$U_t = \text{Beta}(\alpha_t, \beta_t)$$

Where:

$U_t$  is the inflation for year t

$\alpha_t = 4.041$  for the high-volatility regime.

$\beta_t = 45.31$  for the high-volatility regime.

$\alpha_t = 8.262$  for the low-volatility regime.

$\beta_t = 93.82$  for the high-volatility regime

$p_1 = .1566$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .4531$  This is the probability of moving from the low volatility regime to the

high-volatility regime

***Private College Inflation***

We modeled Private College tuition inflation as regime-switching Beta distributions.

$$R_t = \text{Beta}(\alpha_t, \beta_t)$$

Where:

$R_t$  is the inflation for year  $t$

$\alpha_t = 3.121$  for the high-volatility regime.

$\beta_t = 50.32$  for the high-volatility regime.

$\alpha_t = 6.211$  for the low-volatility regime.

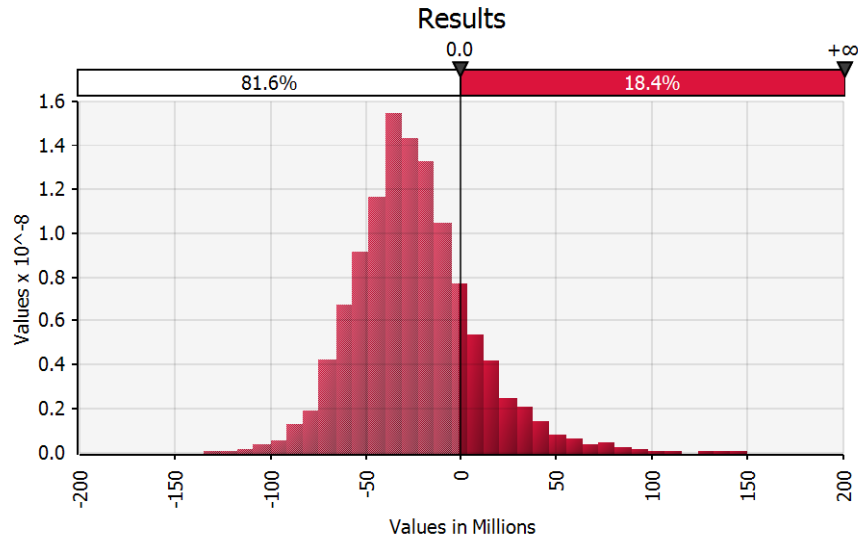
$\beta_t = 100.35$  for the high-volatility regime

$p_1 = .711$  This is the probability of moving from the high volatility regime to the low-volatility regime

$p_2 = .1059$  This is the probability of moving from the low volatility regime to the high-volatility regime

As in prior years, we ran 10,000 scenarios with varying tuition inflation and investment returns. The results are summarized in the table below and in the chart immediately following.

Proportion with positive Actuarial Reserve	18.4%
25% of results are better than:	(7,937,226)
50% of results are better than:	(27,699,562)
75% of results are better than:	(45,074,956)
Largest Actuarial Reserve	184,053,086
Smallest Actuarial Reserve	(160,465,244)
Mean Actuarial Reserve	(24,823,996)



The most important measures from the table above are the Proportion with positive Actuarial Reserve and the 50% Results. The Proportion with positive Actuarial Reserve probability of 18.4% indicates that there is about 1/5 likelihood that the Program will have a surplus.

The 50% Results measure is a “best-estimate” measure of results. If our assumptions are neither conservative (that is they understate results) nor aggressive (that is they overstate results) then the 50% Results measure should be close to our projected result of (\$37,637,604). The table above indicates that our assumptions are conservative compared to historical norms.

The largest piece of this conservatism is in our investment return assumption. Current views of investment returns are considerably lower than historical norms.

The Smallest Actuarial Reserve indicates what happens if economic events continue adversely for the lifetime of the current contracts -high tuition increases, coupled with negative returns in the equity market until the end of the projection horizon. On the other hand, the Largest Actuarial Reserve indicates what happens if economic conditions are favorable for the remaining lifetime of the current contracts.

## IX. BREAK-EVEN RATES & SENSITIVITY TESTING

We calculated both the levelized investment return necessary to provide a break-even result on the Program’s surplus and the levelized tuition increase necessary to provide break-even results. These break-even rates are shown in the table below.

Break-even investment return	11.63% per year
Break-even tuition inflation	2.79% per year

If either of these break-even rates were achieved, the deficit would be cured. Otherwise, the only sure method of curing the deficit is through additional funding or through limitation of benefits. We are currently projecting that an additional appropriation of \$41,804,007 payable in December 2009 would cure the deficit.

We also investigated the effect of variances in both university inflation and investment yield assumptions from those anticipated by the adequacy test assumptions. These scenarios are described below and are based on level adjustments to the baseline adequacy assumptions discussed earlier in this report.

- 1) Tuition inflation lower than adequacy test assumptions by 0.25% every year. Inflation changes only affect those who attend private or out-of-state institutions.
- 2) Tuition inflation higher than adequacy test assumptions by 0.25% every year.
- 3) Investment yields higher than adequacy test assumptions by 0.25% every year.
- 4) Investment yields lower than adequacy test assumptions by 0.25% every year.
- 5) Tuition inflation higher and investment yields lower than adequacy test assumptions by 0.25% every year.

The Surplus for each of these scenarios is shown below.

Sensitivity Testing Results		
Scenario	Surplus	Variance From Baseline
1	(37,144,186)	493,418
2	(38,140,717)	(503,113)
3	(35,041,246)	2,596,358
4	(40,298,512)	(2,660,908)
5	(40,814,282)	(3,176,678)

## X. CHANGES IN ACTUARIAL ASSUMPTIONS

Since the last Actuarial Report, there have been two changes in the actuarial assumptions – tuition inflation and expenses. Because of the statutory limitation on benefit increases to Program participants who attend South Carolina public colleges or universities, we have revised our inflation assumption to reflect that change.

In addition, because the limitation does not apply to those who attend a private college or an out-of-state college, we have bifurcated the projected benefit payments into those who attend South Carolina public colleges or universities and all others. We developed a revised inflation assumption for the “all other” category as well.

For those who attend South Carolina public colleges or universities, we are projected a level 7% annual inflation, compared to our previous assumption of 9%. This change reflects the statutory limit rather than a change in our outlook for tuition inflation.

For those not attending a South Carolina public college or university, we are projecting an average 8% annual tuition increase. The 8% increase is derived as a 9% increase for beneficiaries attending out-of-state colleges or universities and a 7% increase for those beneficiaries attending South Carolina private colleges or universities.

The 50%/50% weighting is based on observed trends for those beneficiaries not attending a South Carolina public college or university. The 9% inflation rate is consistent with prior year’s assumption on WAT growth. The 7% inflation for private colleges is consistent with what we have observed for private colleges nationally.

The second change is the incorporation of expense assumptions. Previously expenses had been subsidized by fees received from Columbia Management. This subsidization has ceased. We have incorporated the expense rates charged by the Records Administrator and have added an additional amount based on current advisement fees and internal allocation of costs to the Program.

### *Dollar Effect of Change in Assumptions*

If assumptions had been the same as last year, the Program’s deficit would have been:

(\$57,262,961)

These changes improved the deficit by \$19,625,357. The effect of the expense change by itself was a \$320,081 worsening of the deficit, while the effect of the restructuring by itself was a \$19,945,438 improvement in the deficit.



## XI. EXPECTED USE OF FUNDS

The Fund is expected to pay benefits and expenses in the following proportions:

- Tuition payments - 95.8%
- Payments of refunds to contract owners – 3.8%
- Program expenses – 0.4%

These results are shown graphically below.

