



***University of Puerto Rico
Retirement System***

**Actuarial Valuation Report
as of
June 30, 2011**

December 19, 2011

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December 19, 2011

Board of Trustees & Retirement Board
University of Puerto Rico
Avenida Muñoz Rivera 654
Edificio Plaza 654, 16th Floor
Hato Rey, Puerto Rico 00919

Re: University of Puerto Rico Retirement System / Actuarial Valuation as of June 30, 2011

Dear Board Members:

This report presents the results of the actuarial valuation of the University of Puerto Rico Retirement System (the “**Retirement System**” or the “**System**”) as of June 30, 2011. This is the seventh actuarial valuation prepared by Buck Consultants, LLC (“**Buck Consultants**” or “**Buck**”). The purpose of this report is to:

- determine the employer contribution required to fund the Retirement System on a sound actuarial basis,
- provide a summary of the funded status of the System, and
- present the financial statement disclosure information according to GASB 25 and 27.

Amendments and Other Changes Affecting the Financial Status of the System

There were no amendments or changes to the benefit provisions employed by the Retirement System that affected its financial status for the year ending on the valuation date. However, on November 15, 2011 the Board of Trustees of the University of Puerto Rico adopted Certification No. 32. This Certification changed the mortality assumptions previously used, from 1994 Group Annuity Mortality table to RP-2000 Mortality Table, projected 7 years for annuitants and 15 years for non-annuitants using Scale AA. It also confirmed the use of the current discount rate of 8%.

Other than the changes required by Certification 32, all other methods and assumptions employed to develop the results presented herein remain unchanged from the previous valuation. A summary of the assumptions and methods and the System benefit provisions reflected in the valuation are presented in tables X and XI respectively.

On June 27, 2011 the Governmental Accounting Standards Board (GASB), the entity responsible for accounting and financial reporting for state and local governments, issued exposure drafts to GASB Statements 25 and 27 whose impact is expected to be considerable. The asset and funding methods, the discount rate and calculation of pension expense, the balance sheet liability, among others, will be significantly affected. If adopted in their current format, the drafts would transform the financial reporting of pension promises and bring public pension financial reporting much closer to corporate pension accounting. *The numbers presented in this report do not reflect any changes to GASB 25 and 27 in its current design.* We strongly encourage the University of Puerto Rico to evaluate the impact of these expected changes to GASB 25 and 27 as soon as possible.

Discussion of Valuation Results

The actuarial valuation as of June 30, 2011 indicates that an expected employer contribution of **\$75,176,984** (a rate of **14.7%** of payroll) is required to meet the employer normal cost and to amortize the Unfunded Actuarial Accrued Liability over 30 years from July 1, 2011. The following table presents the Employer Costs, Annual Required Contribution (ARC) Rates and amounts, the employer cash contributions effected, the Annual Pension Costs under GASB 27, and the Net Pension Obligation (NPO) for the years ending June 30 2011 and 2012.

	Year Ended <u>06/30/11</u>	Year Ended <u>06/30/12</u>
Projected Employer Costs	\$70,416,493	\$75,176,984
ARC (payroll) Rate	13.0%	14.7%
Annual Required Contribution (ARC)	\$68,486,552	To be Determined
Employer Cash Contribution	\$70,761,490	To be Determined
Annual Pension Costs (GASB 27)	\$66,761,754	To be Determined
Net Pension Obligation (NPO)	(\$59,088,385)	To be Determined

In the case of the Retirement System, the ARC (payroll) Rate increased from 13.0% to 14.7% and the Employer Cost increased from \$70,416,493 to \$75,176,984 due mostly to an Actuarial Value return lower than expected, a total payroll reduction during the plan year, and the adoption of a new mortality assumption.

Despite the good return of assets on a market value basis, the actuarial value of assets (whose role is to smooth out gains and losses over a five-year period) reflected only a yield of approximately 4.8% for the year ended June 30, 2011 (which is less than the expected return of 8.0%). On the other hand, please note, for example, that during the market collapse of 2008, when market value returns were in negative territory, the actuarial value of assets generated positive returns. There is no

avoiding the fact that based on historical data (beginning in 1996) the average annual return of assets, on an actuarial value basis, has been less than 8.0%

Contents of the Report

The development of the Employer Cost and the Annual Required Contribution Rate (ARC) for the year ending on June 30, 2012 is presented in Table II. The development of the Annual Required Contribution amount and the accounting disclosures required by GASB Statement 25, as well as the determination of the Annual Pension Cost requested by GASB Statement 27 is presented in Table III. A three-year pension cost trend information is also included on Table III.

Tables IV through VII provide a summary of the participant population, including a breakdown by status (active, retired, deferred vested) and a variety of useful information such as historical average age, service, and salary, a distribution of active participants by Certification number as well as an age-service distribution of active participants with average pay in each respective age-service bracket.

Tables VIII and IX include a breakdown of the System's assets by investment category, a reconciliation of the market value of assets from beginning to the end of the fiscal year, the development of the Actuarial Value of Assets, and the historical asset yields from 1996 to the valuation date.

Finally, table X sets forth all the actuarial assumptions and methods that were used to perform the valuation, and table XI sets forth the System provisions that have been used in determining the liabilities presented in this report.

Certification

To the best of my knowledge, this report fairly and accurately presents the liabilities of the System as of June 30, 2011, based on the participant data and asset information provided by the System's Administrator, and the Retirement System benefit provisions and actuarial assumptions and methods set forth herein. Furthermore, it is our understanding that all known events or trends that may require a material increase in System costs or required contribution rates have been taken into account in the valuation.

Respectfully submitted,



Héctor D. Gaitán, FCA, ASA, MAAA
Office Manager & Consulting Actuary

cc: José A. Lázaro

Summary of Valuation Results

TABLE I

	As of June 30, 2010	As of June 30, 2011
1. Number of Members		
a. Active Participants	12,075	11,398
b. Deferred Vested Participants	395	439
c. Retirees and Beneficiaries:	<u>7,150</u>	<u>7,467</u>
d. Total Participants	<u>19,620</u>	<u>19,304</u>
e. Non-Vested Participants Entitled to Refund of Own Contributions	7,669	7,815
2. Total Annual Rate of Covered Payroll	\$ 540,867,018	\$ 510,706,620
3. Active Participant Statistics		
a. Average Attained Age	47.71	48.18
b. Average Years of Service	16.25	16.72
c. Average Annual Salary	\$ 44,792	\$ 44,807
4. Expected Employee Contributions	\$ 34,327,309	\$ 32,330,406
5. Total Annual Retired Members Benefits	\$ 135,957,262	\$ 147,711,999
6. Annual Normal Cost	\$ 33,483,477	\$ 31,878,378
7. Unfunded Actuarial Liability		
a. Actuarial Accrued Liability	\$ 2,436,913,244	\$ 2,542,444,021
b. Actuarial Value of Assets	<u>(1,028,918,000)</u>	<u>(1,041,628,000)</u>
c. Unfunded Actuarial Accrued Liability	\$ 1,407,995,244	\$ 1,500,816,021
8. Assets		
a. Market Value of Assets	\$ 902,866,599	\$1,052,466,560
b. Actuarial Value of Assets	\$ 1,028,918,000	\$ 1,041,628,000
9. Projected Employer Cost	\$ 70,416,493	\$ 75,176,984
10. Annual Required Contribution (ARC) Rate ⁽¹⁾	13.0%	14.7%
11. Annual Pension Cost (GASB 27)	\$ 62,275,417	\$ 66,761,754

(1) ARC Rate for each fiscal year comes from actuarial valuation at start of that fiscal year (e.g., the June 30, 2011 Annual Required Contribution was established in the June 30, 2010 actuarial valuation).

Employer Cost / Annual Required Contribution (ARC) Rate**TABLE II**

	<u>As of June 30, 2010</u>	<u>As of June 30, 2011</u>
1. Number of Members		
a. Active Participants	12,075	11,398
b. Deferred Vested Participants	395	439
c. Retirees and Beneficiaries	7,150	7,467
d. Total Members	<u>19,620</u>	<u>19,304</u>
e. Non-Vested Participants Entitled to Refund of Own Contributions	7,669	7,815
2. Total Annual Earnings	\$ 540,867,018	\$ 510,706,620
3. Actuarial Accrued Liability		
a. Retirees and Beneficiaries	\$ 1,118,937,427	\$ 1,228,504,724
b. Terminated Participants ⁽¹⁾	33,859,695	39,105,229
c. Active Participants	1,284,116,122	1,274,834,068
d. Total	<u>\$ 2,436,913,244</u>	<u>\$ 2,542,444,021</u>
4. Actuarial Value of Assets	\$ 1,028,918,000	\$ 1,041,628,000
5. Unfunded Accrued Liability (Item 3.d. - Item 4.)	\$ 1,407,995,244	\$ 1,500,816,021
6. Amortization of Unfunded Accrued Liability ⁽²⁾	\$ 68,555,990	\$ 73,075,479
7. Annual Normal Cost	\$ 33,483,477	\$ 31,878,378
8. Administrative Expenses	\$ 2,704,335	\$ 2,553,533
9. Total (Gross) Contribution (Item 6. + Item 7. + Item 8.)	\$ 104,743,802	\$ 107,507,390
10. Expected Employee Contributions	\$ 34,327,309	\$ 32,330,406
11. Projected Employer Cost (Item 9. - Item 10.)	<u>\$ 70,416,493</u>	<u>\$ 75,176,984</u>
12. (ARC) Rate as a Percentage of Total Earnings ⁽³⁾ (Item 11. / Item 2.)	<u>13.0%</u>	<u>14.7%</u>

(1) Includes \$14,121,540 of accumulated contributions for non-vested participants at 06/30/10 and \$15,095,320 at 06/30/11.

(2) Amortization changed to Level Percentage of Payroll effective with the June 30, 2005 actuarial valuation with an open amortization period of 30 years.

(3) ARC Rate for each fiscal year comes from actuarial valuation at start of that fiscal year (e.g., the June 30, 2011 ARC Rate determines the Annual Required Contribution Amount for the fiscal year ending June 30, 2012).

	<u>As of June 30, 2010</u>	<u>As of June 30, 2011</u>
1. Annual Required Contribution (ARC) ⁽¹⁾		
a. ARC Rate ⁽¹⁾	11.4%	13.0%
b. Actual Payroll	\$ 558,960,726	\$ 526,819,627
c. Annual Required Contribution Item (a) * Item (b)	<u>\$ 63,721,523</u>	<u>\$ 68,486,552</u>
2. Annual Pension Cost and Net Pension Obligation (NPO)		
a. Annual Required Contribution (ARC)	\$ 63,721,523	\$ 68,486,552
b. Interest on NPO	(3,694,997)	(4,407,092)
c. Adjustment to ARC	<u>2,248,891</u>	<u>2,682,294</u>
d. Annual Pension Cost	\$ 62,275,417	\$ 66,761,754
e. Contributions made	<u>(71,176,599)</u>	<u>(70,761,490)</u>
f. Increase (decrease) in NPO	(8,901,182)	(3,999,736)
g. NPO (beginning of the year)	<u>\$ (46,187,467)</u>	<u>\$ (55,088,649)</u>
h. NPO (end of the year)	<u>\$ (55,088,649)</u>	<u>\$ (59,088,385)</u>

(1) ARC Rate for each fiscal year comes from actuarial valuation at start of that fiscal year (e.g., the June 30, 2010 ARC Rate determines the Annual Required Contribution Amount for the fiscal year ending June 30, 2011).

Accounting Disclosures (GASB 25/27)

TABLE III
(continued)

3. Schedule of Employer Contributions

Year Ended June 30	Required Contribution as a Percentage of Payroll for Year Ended ⁽¹⁾	Actual Payroll	Annual Required Contribution (ARC)	Employer Contribution Made	Percentage Contributed	(Excess)/ Deficiency
2011	13.0%	\$ 526,819,627	68,486,552	\$ 70,761,490	103.3%	(2,274,938)
2010	11.4%	558,960,726	63,721,523	71,176,599	111.7%	(7,455,076)
2009	11.1%	577,227,102	64,072,208	72,605,262	113.3%	(8,533,054)
2008	10.9%	543,538,453	59,245,691	81,553,088	137.7%	(22,307,397)
2007	11.1%	518,236,607	57,524,263	78,310,774	136.1%	(20,786,511)
2006	11.3%	490,262,657	55,399,680	73,658,083	133.0%	(18,258,403)
2005	18.4%	460,174,370	84,672,084	69,291,395	81.8%	15,380,689
2004	16.2%	433,607,194	70,244,365	61,376,007	87.4%	8,868,358
2003	16.1%	407,357,391	65,584,540	57,551,270	87.8%	8,033,270
2002	14.0%	387,508,328	54,251,166	52,326,004	96.5%	1,925,162
2001	11.0%	376,992,691	41,469,196	54,040,933	130.3%	(12,571,737)
2000	12.6%	348,397,129	43,898,038	49,651,679	113.1%	(5,753,641)
1999	11.7%	330,179,269	38,630,974	53,041,795	137.3%	(14,410,821)
1998	12.3%	327,884,351	40,329,775	48,856,041	121.1%	(8,526,266)
1997	14.0%	311,025,104	43,543,515	46,600,524	107.0%	(3,057,009)
1996	14.6%	280,144,023	40,901,027	41,516,818	101.5%	(615,791)
1995	14.8%	261,613,882	38,718,855	36,479,385	94.2%	2,239,470
1994	14.8%	245,096,878	36,274,338	34,145,484	94.1%	2,128,854
1993	14.3%	232,505,968	33,248,353	32,399,088	97.4%	849,265
1992	14.3%	231,818,990	33,150,116	29,581,402	89.2%	3,568,714
1991	14.3%	213,752,919	30,566,667	25,828,085	84.5%	4,738,582

(1) ARC Rate for each fiscal year comes from actuarial valuation at start of that fiscal year (e.g., the June 30, 2011 Required Contribution was established in the June 30, 2010 actuarial valuation).

Accounting Disclosures (GASB 25/27)

TABLE III
(continued)

4. Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability - Entry Age (AAL) (b)	Unfunded AAL (not < 0) (UAAL) (b) - (a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as % of Covered Payroll [(b) - (a)]/(c)
6/30/2011	\$ 1,041,628,000	\$ 2,542,444,021	1,500,816,021	41.0%	\$ 510,706,620	293.9%
6/30/2010	1,028,918,000	2,436,913,244	1,407,995,244	42.2%	540,867,018	260.3%
6/30/2009	1,034,645,000	2,331,619,466	1,296,974,466	44.4%	570,122,184	227.5%
6/30/2008	1,024,987,000	2,223,219,684	1,198,232,684	46.1%	542,603,556	220.8%
6/30/2007	953,197,000	2,068,102,695	1,114,905,695	46.1%	513,486,180	217.1%
6/30/2006	869,211,000	1,930,131,983	1,060,920,983	45.0%	484,886,628	218.8%
6/30/2005	820,501,000	1,848,175,710	1,027,674,710	44.4%	460,956,060	222.9%
6/30/2004	803,498,000	1,748,529,453	945,031,453	46.0%	431,942,112	218.8%
6/30/2003	778,265,000	1,594,436,193	816,171,193	48.8%	405,855,271	201.1%
6/30/2002	640,406,669	1,546,249,360	905,842,691	41.4%	390,192,418	232.2%
6/30/2001	686,067,220	1,311,021,235	624,954,015	52.3%	363,995,029	171.7%
6/30/2000	753,863,676	1,212,559,037	458,695,361	62.2%	341,871,667	134.2%
6/30/1999	650,294,843	1,161,100,932	510,806,089	56.0%	333,153,432	153.3%
6/30/1998	586,095,318	1,037,281,510	451,186,192	56.5%	322,232,048	140.0%
6/30/1997	505,466,931	957,716,124	452,249,193	52.8%	305,498,420	148.0%
6/30/1996	427,435,099	912,242,254	484,807,155	46.9%	283,798,140	170.8%
6/30/1995	382,934,691	856,494,515	473,559,824	44.7%	261,466,451	181.1%
6/30/1994	N/A	N/A	N/A	N/A	N/A	N/A
6/30/1993	343,302,357	748,243,399	404,941,042	45.9%	221,986,837	182.4%
6/30/1992	N/A	N/A	N/A	N/A	N/A	N/A
6/30/1991	280,341,508	646,980,619	366,639,111	43.3%	209,377,144	175.1%

Accounting Disclosures (GASB 25/27)

TABLE III
(continued)

5. Three-Year Pension Cost Trend Information

Fiscal Year Ending	Annual Pension Cost (APC)	Employer Contribution	Percentage of APC Contributed	Net Pension Obligation (NPO)
06/30/11	\$ 66,761,754	\$ 70,761,490	106.0%	\$ (59,088,385)
06/30/10	62,275,417	71,176,599	114.3%	(55,088,649)
06/30/09	62,929,059	72,605,262	115.4%	(46,187,467)

6. Additional Information

Valuation date: 06/30/2011

Actuarial cost method: Entry Age Normal (Traditional)

Amortization method: Level Percentage of Payroll

Remaining amortization period: 30-year constant (open basis)

Asset valuation method: Market Value adjusted to reflect investment gains and losses over a five (5) year period. See Tables VIII and X for a more detailed explanation of Actuarial Value of Assets methodology.

Actuarial assumptions:

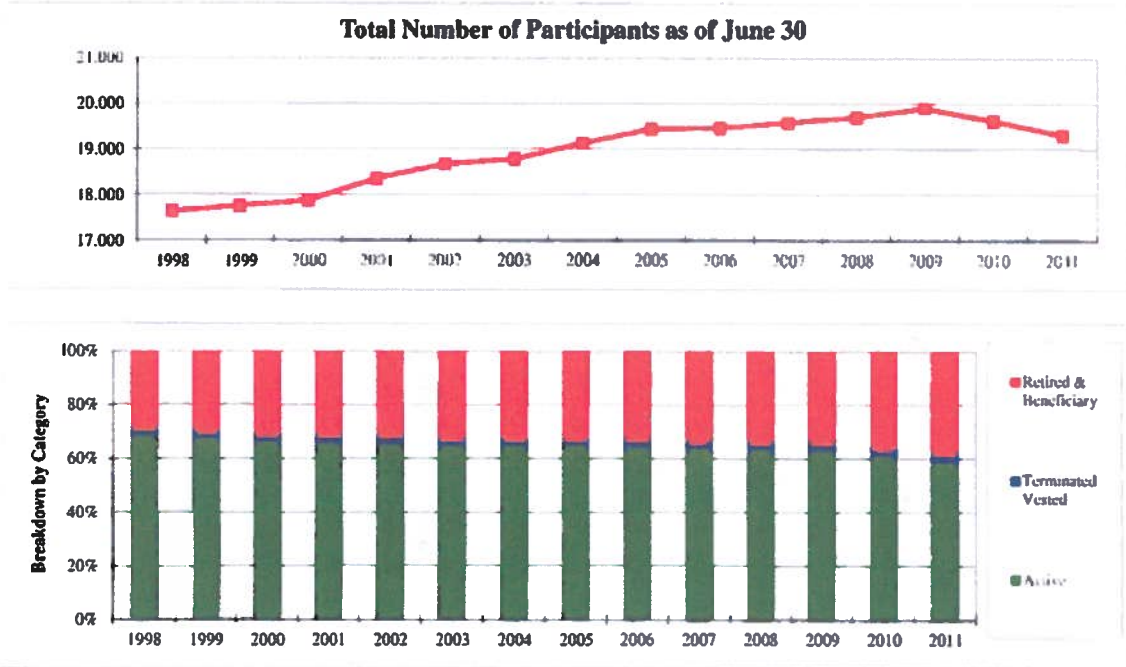
- Investment rate of return* 8.00%
- Projected salary increases* 5.00%
- Post-retirement benefit increases Other than the automatic increase of 3.00% every two (2) years applicable to salary cap of Certification 139, NO postretirement benefit increases are assumed.

Mortality Table RP 2000 with projection. Last year 1994 GAM was employed.

*Includes inflation at 3.50%

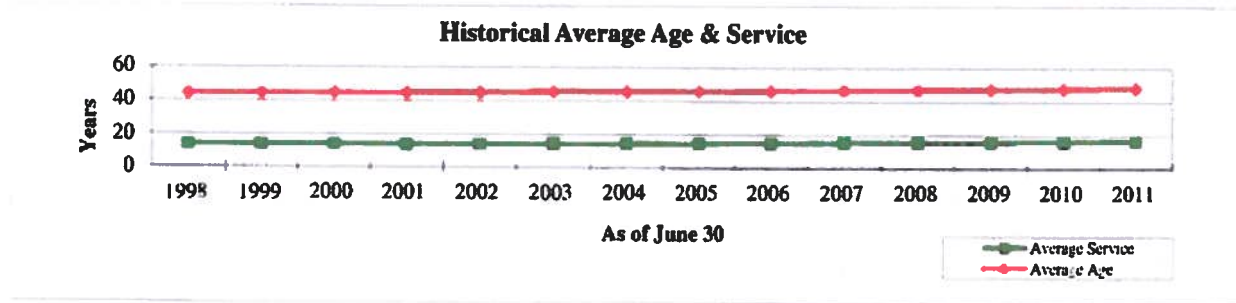
Summary of Participant Data

TABLE IV

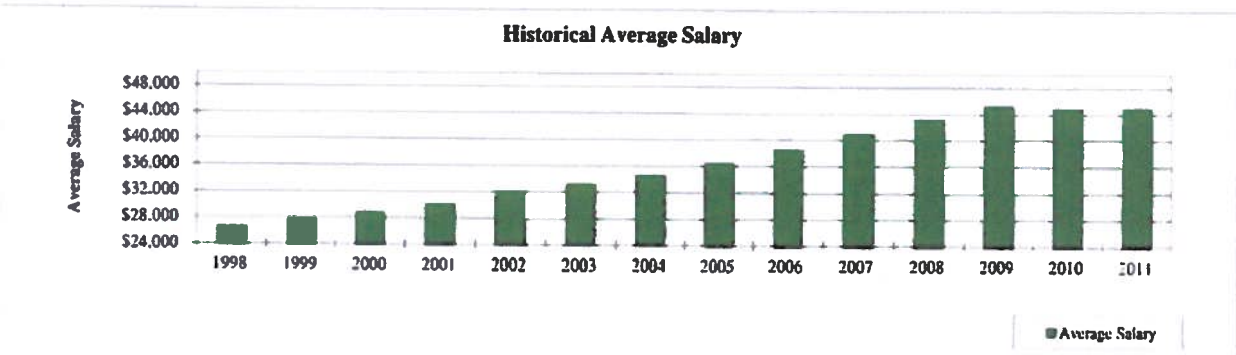


	<u>As of June 30, 2010</u>	<u>As of June 30, 2011</u>
1. Active Participants		
a. Actively employed		
i. Fully vested	8,276	8,162
ii. Non-vested	3,799	3,236
b. Sub-total	<u>12,075</u>	<u>11,398</u>
2. Terminated Vested Participants ⁽¹⁾	395	439
3. Retired Participants		
a. Non-disabled	5,940	6,258
b. Disabled	1,135	1,131
c. Beneficiaries	75	78
d. Sub total	<u>7,150</u>	<u>7,467</u>
4. Total Participants	<u>19,620</u>	<u>19,304</u>

(1) Excludes 7,669 and 7,815 non-vested terminated employees as of June 30, 2010 and 2011 respectively who are entitled to a refund of their own contributions.



Date	Average Service Earned	Average Attained Age	Date	Average Service Earned	Average Attained Age
06/30/98	13.80	44.00	06/30/05	14.76	45.72
06/30/99	14.00	44.46	06/30/06	15.12	46.15
06/30/00	14.10	44.58	06/30/07	15.38	46.53
06/30/01	13.95	44.65	06/30/08	15.62	46.94
06/30/02	14.11	44.95	06/30/09	15.75	47.25
06/30/03	14.43	45.38	06/30/10	16.25	47.71
06/30/04	14.62	45.51	06/30/11	16.72	48.18



Date	Average Salary Rate	Date	Average Salary Rate
06/30/98	\$26,449	06/30/05	\$36,362
06/30/99	\$27,593	06/30/06	\$38,514
06/30/00	\$28,709	06/30/07	\$40,915
06/30/01	\$30,000	06/30/08	\$43,105
06/30/02	\$31,702	06/30/09	\$45,162
06/30/03	\$33,150	06/30/10	\$44,792
06/30/04	\$34,600	06/03/11	\$44,807

**DISTRIBUTION OF ACTIVE PARTICIPANTS
BY PENSION ELEGIBILITY, CONTRIBUTORY MAXIMUM, AND PLAN TYPE**

<u>Pension Eligibility Certification</u>	<u>Contributory Maximum Certification</u>	<u>Employee Contribution Wage Base</u>	<u>Plan Type</u>	<u>Participant Count @ 06/30/10</u>	<u>Participant Count @ 06/30/11</u>
Cert #7	Cert #7	None	Coordinated	2	0
Cert #55	Cert #55	\$35,000	Coordinated	181	151
Cert #37	Cert #37	\$35,000	Coordinated	1347	1220
Cert #55	Cert #55	\$35,000	Supplemented	942	831
Cert #7	Cert #7	None	Supplemented	5	4
Cert #55	Cert #55	\$35,000	Supplemented	2067	1979
Cert #37	Cert #94	\$50,000	Coordinated	160	147
Cert #55	Cert #94	\$50,000	Supplemented	4800	4603
Cert #55	Cert #94	\$50,000	Coordinated	85	67
Cert #37	Cert #139 *	\$65,564	Coordinated	198	173
Cert #55	Cert #139 *	\$65,564	Coordinated	27	19
Cert #55	Cert #139 *	\$65,564	Supplemented	<u>2261</u>	<u>2204</u>
Total:				<u>12,075</u>	<u>11,398</u>

* Certification 139 increases by 3.00% every two years. The 2011 limit will be \$67,531.

Age-Service Distribution (all active participants)

TABLE VII

Attained Age	Completed Years of Service as of June 30, 2011										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	18	27	0	0	0	0	0	0	0	0	45
Avg. Pay	16,067	16,466	0	0	0	0	0	0	0	0	16,306
25 to 29	37	233	106	7	0	0	0	0	0	0	383
Avg. Pay	23,634	20,202	22,604	26,323	0	0	0	0	0	0	21,310
30 to 34	15	295	493	177	2	0	0	0	0	0	982
Avg. Pay	28,642	34,181	27,233	29,580	28,980	0	0	0	0	0	29,768
35 to 39	11	211	380	490	199	1	0	0	0	0	1,292
Avg. Pay	35,600	41,386	38,766	34,588	33,741	32,580	0	0	0	0	36,804
40 to 44	10	160	335	443	430	128	4	0	0	0	1,510
Avg. Pay	35,588	38,219	41,453	44,229	39,238	37,946	44,175	0	0	0	40,965
45 to 49	9	141	250	403	472	510	184	7	0	0	1,976
Avg. Pay	49,853	36,897	38,347	45,308	49,743	44,324	41,893	37,371	0	0	44,307
50 to 54	5	83	172	250	388	469	542	254	15	0	2,178
Avg. Pay	26,998	39,721	39,399	45,013	51,919	53,542	47,728	42,831	38,968	0	47,773
55 to 59	2	32	121	187	231	269	448	290	96	5	1,681
Avg. Pay	22,242	47,296	42,190	47,401	52,904	55,980	59,440	54,695	48,912	47,035	53,675
60 to 64	0	16	44	86	117	161	211	154	102	34	925
Avg. Pay	0	43,477	43,157	47,831	51,030	57,001	62,983	70,728	65,556	55,066	59,023
65 to 69	0	4	16	22	31	31	49	45	32	35	265
Avg. Pay	0	113,265	42,702	44,873	56,105	58,262	59,953	68,721	70,487	77,685	62,919
70 & up	0	2	8	11	5	25	35	23	12	40	161
Avg. Pay	0	57,420	51,104	50,631	51,022	54,858	59,431	63,947	75,229	72,803	62,565
Total	107	1,204	1,925	2,076	1,875	1,594	1,473	773	257	114	11,398
Avg. Pay	27,747	34,351	35,792	41,424	46,642	50,200	53,422	54,926	58,853	67,882	44,807

Market and Actuarial Value of Assets
TABLE VIII

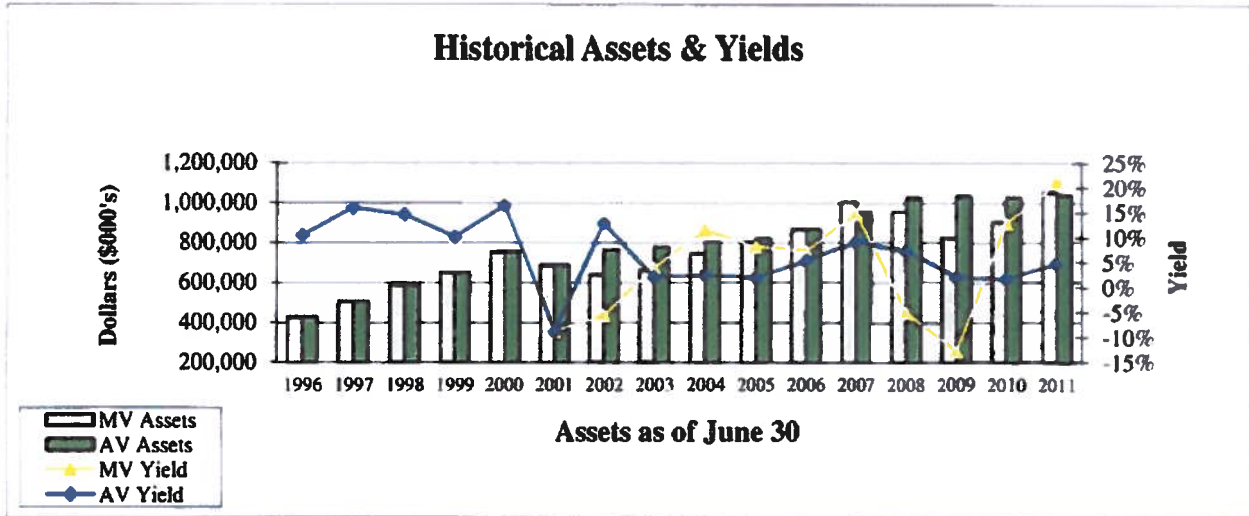
	<u>As of</u> <u>June 30, 2010</u>		<u>As of</u> <u>June 30, 2011</u>	
1. Market Value of Assets		%		%
a. Cash and cash equivalents	\$28,908,806	3.1%	\$30,607,754	2.8%
b. Government securities	36,800,626	4.0%	\$40,883,143	3.7%
c. Corporate bonds and notes	70,475,228	7.5%	\$62,059,393	5.7%
d. Equities	120,303,661	12.9%	\$162,865,116	14.8%
e. Foreign stocks and bonds	100,175,050	10.7%	\$123,630,377	11.3%
f. Mutual funds	383,984,148	41.2%	\$467,471,475	42.5%
g. Property and equipment	2,691,662	0.3%	\$3,629,824	0.3%
h. Mortgages/loans to plan members	189,392,193	20.3%	\$207,976,196	18.9%
i. Other assets	0	0.0%	\$0	0.0%
j. Other investments	0	0.0%	0	0.0%
k. Market value of assets	<u>\$932,731,374</u>	100.0%	<u>\$1,099,123,278</u>	100.0%
l. Contribution receivable / receivables	32,105,588		58,340,510	
m. Other payable	<u>(61,970,363)</u>		<u>(104,997,228)</u>	
n. Market value of assets	<u>\$902,866,599</u>		<u>\$1,052,466,560</u>	
 2. Reconciliation of Market Value of Assets				
a. Market Value as of June 30, 2010			\$902,866,599	
b. Income:				
Employer contribution	\$70,761,490			
Employee contributions	40,062,134			
Net appreciation (depreciation) in fair value of investments	165,030,923			
Interest and dividends	22,692,457			
Post Retirement Medical Plan Reimbursements	<u>9,772,691</u>			
			\$308,319,695	
c. Disbursements:				
Benefit payments	\$143,197,776			
Administrative Expenses	3,070,301			
Investment Expenses	2,678,966			
Post Retirement Medical Plan Benefit Payments	<u>9,772,691</u>			
			\$158,719,734	
d. Market Value as of June 30, 2011			<u>\$1,052,466,560</u>	

Market and Actuarial Value of Assets

TABLE VIII

(continued)

	(\$ Thousands) As of <u>June 30, 2010</u>	(\$ Thousands) As of <u>June 30, 2011</u>
3. Determination of Asset Gain / (Loss)		
a. Market value of assets at beginning of year	\$ 821,867	\$ 902,867
b. Employer contributions	71,177	70,761
c. Employee contributions	41,738	40,062
d. Administrative expenses	(3,709)	(3,070)
e. Benefit payments	(133,113)	(143,198)
f. Expected earnings (at 8.00%)	64,793	70,812
g. Expected Assets at end of year: (a) + (b) + (c) + (d) + (e) + (f) =	\$ 862,753	\$ 938,234
h. Actual market value of assets at end of year	\$ 902,867	\$ 1,052,467
i. Asset gain / (loss) for the year: (h) - (g)	\$ 40,114	\$ 114,233
4. Actuarial Value of Assets		
a. Gains & (losses) for year ending June 30		
i. 2007	\$ 58,990	x 1/5 = \$ 11,798
ii. 2008	(130,162)	x 2/5 = (52,065) x 1/5 = \$ (26,032)
iii. 2009	(196,458)	x 3/5 = (117,875) x 2/5 = (78,583)
iv. 2010	40,114	x 4/5 = 32,091 x 3/5 = 24,068
v. 2011	114,233	N/A x 4/5 = 91,386
vi. Total unrecognized gains/(losses)	\$ (126,051)	\$ 10,839
b. Actuarial Value of Assets <i>Item 3(h) minus Item 4(a)(vi)</i>	\$ 1,028,918	\$ 1,041,628



Plan Year	Market Value as of June 30*	Actuarial Value as of June 30*	Benefit Payments	Admin. Expenses	Employer Contributions	Employee Contributions	** MV Yield	** AV Yield
1996	\$ 427,435	\$ 427,435	\$ 51,611	\$ 1,487	\$ 41,516	\$ 15,857	10.4%	10.4%
1997	505,467	505,467	53,914	1,582	46,600	18,025	15.9%	15.9%
1998	586,095	586,095	58,507	1,763	48,856	18,010	14.6%	14.6%
1999	650,295	650,295	64,269	6,245	53,042	21,992	10.1%	10.1%
2000	754,280	754,280	72,043	2,215	49,652	22,384	16.4%	16.4%
2001	686,067	686,067	78,613	2,178	54,041	24,383	-8.7%	-8.7%
2002	639,813	765,329	84,455	2,105	52,326	25,894	-5.6%	12.8%
2003	662,518	778,265	89,313	2,420	57,551	31,437	4.0%	2.1%
2004	743,761	803,498	94,188	2,675	61,376	40,993	11.4%	2.5%
2005	806,229	820,501	100,459	3,781	69,291	36,464	8.2%	1.9%
2006	869,349	869,211	105,090	3,263	73,658	38,710	7.3%	5.4%
2007	1,002,117	953,197	110,831	3,443	78,311	40,030	14.8%	9.2%
2008	954,307	1,024,987	118,779	3,640	81,553	42,965	-5.0%	7.3%
2009	821,867	1,034,645	124,353	3,935	72,605	43,831	-12.7%	2.1%
2010	902,867	1,028,918	133,113	3,709	71,177	41,738	13.0%	1.8%
2011	1,052,467	1,041,628	143,198	3,070	70,761	40,062	20.9%	4.8%

* Including contribution receivable.

** Yield calculated assuming middle of the year income / outflow.

FOR THE DETERMINATION OF CONTRIBUTION AMOUNTS

1. Actuarial Cost Method

- The Entry Age Normal Cost (traditional) method was used. Under this method the actuarial present value of all plan benefits at the entry age is summed and divided by the present value of future salaries. This ratio is multiplied by all future salaries from the valuation date forward to arrive at the present value of future normal costs and hence the entry age accrued liability and normal costs.

2. Interest Rates (Investment Earnings and Discount Rate)

8.00% per annum, net of investment expenses.

3. Administrative Expenses

0.50% of total payroll of covered employees.

4. Salary Increases

5.00% per annum.

5. Decrements

- **Pre-Retirement Mortality**

RP-2000 Mortality Table, projected 7 years for annuitants and 15 years for non-annuitants using Scale AA. For purposes of benefits due to death in service, it is assumed that five percent (5.00%) of such deaths are service related. Representative values of the assumed annual rates of pre-retirement mortality among members in active service are as follows:

Age	Men	Women
20	0.021%	0.013%
25	0.029%	0.014%
30	0.039%	0.020%
35	0.068%	0.036%
40	0.088%	0.048%
45	0.169%	0.074%
50	0.386%	0.172%
55	0.418%	0.306%
60	0.613%	0.567%
64	0.940%	0.858%

- **Post-Retirement Healthy Mortality**
 RP-2000 Mortality Table, projected 7 years for annuitants and 15 years for non-annuitants using Scale AA..
- **Post-Retirement Disabled Mortality**
 100% of disabled life mortality rates from Social Security Actuarial Study No. 75.
- **Disability**
 Representative values of the assumed annual rates of disability among male and female members in active service are as follows (65% of the projected disabilities are assumed to be due to occupational causes):

Age	Males	Females
20	0.071%	0.035%
25	0.085%	0.049%
30	0.111%	0.085%
35	0.151%	0.134%
40	0.218%	0.200%
45	0.331%	0.298%
50	0.544%	0.469%
55	0.941%	0.762%
60	1.360%	0.930%

- **Permanent Withdrawal from Active Status**
 Representative values of the assumed annual rates of withdrawal among members in active service are as follows:

Age	Rate
20	8.00%
25	7.80%
30	7.30%
35	6.40%
40	5.20%
45	4.20%
50	3.00%
55	1.90%
60	0.00%

- **Retirement**

In accordance with the following schedule:

Age at Hire	Retirement age
20 - 24	55 (58*)
25 - 29	Age at hire + 30 But not greater than 58
30 - 34	58
35 - 39	58
40 - 44	58
45 - 48	58
49 & Over	Hire age + 10
* If less than 20 years of service by July 1, 1979, did not elect Certification 55 and did not elect full supplementation	

6. Percent Married

80% of participants are presumed married for purposes of spousal benefits.

7. Assets

The actuarial value of assets is determined by adjusting the market value of assets to reflect investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last five (5) years at the rate of 20.00% per year. Expected investment return is calculated from the prior market value of assets, including receivable contributions, and weighted expected transactions.

8. Valuation Group

All employees active or on leave of absence, inactive participants with deferred benefits or entitled to return of their own contributions, retirees and beneficiaries are included in the valuation.

9. Benefit Increases (Pre and Post Retirement)

Other than the expected increase in the salary limitation of Certification 139, no postretirement benefit increase is assumed. Increases are granted from time to time and the annual required contribution is adjusted accordingly.

FOR DETERMINATION OF GASB ACCOUNTING INFORMATION

The determination of the GASB Nos. 25 and 27 accounting information has been made on the basis of the same assumptions and methods used for the determination of the funding amounts. Our actuarial valuation as of June 30, 2011 is based on the benefit provisions of the University of Puerto Rico Retirement System as of the valuation date, which are summarized in this section. No provision has been made for any changes to GASB Nos. 25 and 27.

- 1. Provisions applicable to those members who had completed 20 years of services by July 1, 1979:**
- a) **Service retirement annuity payable:**
 - i) After 30 years of service; or
 - ii) At age 58 after 10 years of service; or
 - iii) At age 55 after 25 years of service.

 - b) **Amount of service retirement annuity:**
 - i) Before age 65 – member with at least 30 years of service: 75% of average compensation if age 55 at beginning date; 65% if under age 55. If member completed 30 years of service before July 1973, annuity is increased by 2% of average compensation for each year of service beyond 30 and before July 1973, but to not more than 85% of average compensation.
 - ii) Before age 65 – member with less than 30 years of service: 1.50% of average compensation per year of service for member with 20 or fewer years. Percentage increased by 0.05% for each year in excess of 20 years up to a maximum of 1.95% of average compensation per year of service. Amount reduced by ½% for each month member is under age 58 at time annuity begins.
 - iii) After age 65 – if member elected full supplementation annuity is the same as before age 65. Otherwise, annuity is reduced at age 65 by ½% of first \$350 of average compensation for each year of service up to 30 years.
 - iv) Minimum annuity: \$250 per month.
 - v) Average compensation means the average for the highest-paid 36 months of service without limit on compensation.
 - vi) Employee contributions:
 - Complete supplementation: 7.00% of compensation.
 - Coordinated: 4.00% of compensation up to \$4,200 plus 6.50% of compensation in excess of \$4,200.

2. Provisions applicable to all members who were affected under Certification 37 and who had not completed 20 years of service by July 1, 1979 plus those members who entered the system on or after July 1, 1978 and who did not elect Certification 55 or 94 and did not elect full supplementation under Certification 54:

- a) Service retirement annuity payable:
 - i) After 30 years of service; or
 - ii) At age 58 after 10 years of service; or
 - iii) At age 55 after 25 years of service.

- b) Amount of service retirement annuity:
 - i) Before age 65 – member with at least 30 years of service: 75% of average compensation. Amount reduced by ½% for each month member is under age 58 at time annuity begins.

 - ii) Before age 65 – member with less than 30 years of service: 1.50% of average compensation per year of service for member with 20 or fewer years. Percentage increased by 0.05% for each year in excess of 20 years up to a maximum of 1.95% of average compensation per year of service. Amount reduced by ½% for each month member is under age 58 at time annuity begins.

 - iii) After age 65 – Benefit is coordinated. Annuity is reduced by ½% of average compensation not in excess of the Social Security wage base in effect at retirement for each year of service up to 30 years. If member was under age 58 at beginning date, the coordination adjustment is made before application of ½% reduction per month under 58.

 - iv) Minimum annuity: \$250 per month.

 - v) Average compensation means the average for the highest-paid 36 months of service, excluding that portion of compensation in any year which is in excess of \$35,000.

 - vi) Employee contributions for coordinated benefit: 5.00% of compensation up to maximum salary of \$35,000.

- 3. Provision applicable to all members who were affected by Certification 37 and who had not completed 20 years of service by July 1, 1979 as well as those members who entered the system on or after July 1, 1978 and later elected Certification 55 or those who elected full supplementation under Certification 54 (but not Certification 94):**
- a) **Service retirement annuity payable:**
 - i) After 30 years of service; or
 - ii) At age 58 after 10 years of service; or
 - iii) At age 55 after 25 years of service.

 - b) **Amount of service retirement annuity:**
 - i) Before age 65 – member with at least 30 years of service: 75% of average compensation. Amount reduced by 1/3% for each month member is under age 55 at time annuity begins.
 - ii) Before age 65 – member with less than 30 years of service: 1.50% of average compensation per year of service for member with 20 or fewer years. Percentage increased by 0.05% for each year in excess of 20 years up to a maximum of 1.95% of average compensation per year of service.
 - iii) After age 65 – if member elected full supplementation, annuity is the same as before age 65. Otherwise, annuity is reduced by ½% of average compensation at time of retirement multiplied by years of service up to 30 years.
 - iv) Minimum annuity: \$250 per month.
 - v) Average compensation means the average for the highest-paid 36 months of service, excluding that portion of compensation in any year which is in excess of \$35,000.
 - vi) Employee contributions:
 - Complete supplementation: 7.00% of compensation up to compensation limit of \$35,000.
 - Coordinated: 4.00% up to \$4,200 of compensation plus 6.50% of the excess up to the compensation limit of \$35,000.

4. For those entering between January 1, 1990 and June 30, 1998 who did not elect Certification 94:

- a) Service retirement annuity payable:
 - i) After 30 years of service; or
 - ii) At age 58 after 10 years of service; or
 - iii) At age 55 after 25 years of service.

- b) Amount of service retirement annuity:
 - i) Before age 65 – member with at least 30 years of service: 75% of average compensation. Amount reduced by 1/3% for each month member is under age 55 at time annuity begins.
 - ii) Before age 65 – member with less than 30 years of service: 1.50% of average compensation per year of service for member with 20 or fewer years. Percentage increased by 0.05% for each year in excess of 20 years up to a maximum of 1.95% of average compensation per year of service.
 - iii) After age 65 – All completely supplemented.
 - iv) Minimum annuity: \$250 per month.
 - v) Average compensation means the average for the highest-paid 36 months of service, excluding that portion of compensation in any year which is in excess of \$35,000.
 - vi) Employee contributions:
 - All completely supplemented: 8.00% of compensation up to compensation limit of \$35,000.

5. Certification 94:

- a) Increase compensation up to \$50,000.
- b) Those electing coverage under the above certification agree to pay 9.00% of compensation up to \$50,000.

6. Certification 139:

- a) Increase compensation up to a \$60,000 maximum. The \$60,000 cap is increased by 3.00% every two years. The 2011 maximum compensation is \$67,531.
- b) Those electing coverage under the above certification agree to pay 11.00% of compensation up to \$60,000.

7. Disability Benefits

- a) A disability retirement annuity is payable upon:
 - i) Disability due to occupational causes, regardless of service, or
 - ii) Disability due to non-occupational causes after 10 years of service. If member is also eligible for a service retirement annuity, benefit payable is the higher of the two.
- b) Amount of disability retirement annuity:
 - i) Before age 65 – If service connected, 50% of rate of salary at retirement. If not service connected, 30% of average compensation plus additional 1.00% for each year of service over 10 (subject to a maximum of 50%).
 - ii) After age 65 – Reduced to amount payable by the applicable retirement benefit formula above. However, if post 65 retirement benefit plus Primary Social Security benefit is less than pre 65 disability benefit, then post 65 benefit is adjusted (increased) by the amount necessary to match pre 65 disability benefit.
 - iii) Minimum annuity: \$250 per month.

8. Vested Benefits

A member whose employment terminates after ten (10) years of service, and who does not withdraw his contributions, receives a retirement annuity payable beginning at age 60 based on the applicable retirement formula above.

9. Non-vested Termination Benefits

If termination of employment occurs prior to completing ten (10) years of service, member is entitled only to a refund of his / her own contributions. Refund of a member's own contributions can also be obtained after attainment of ten (10) years of service but in that event the vested benefit is forfeited.

10. Pre-retirement Death Benefits

- a) A pre-retirement death benefit is payable upon:
 - i) A service-connected death, or
 - ii) A non-service connected death.
- b) Amount of pre-retirement death benefit:
 - i) The widow of a deceased member whose death is service-connected receives an annuity of 50% of final salary, plus \$10 per month for each child under age 18 (21 if at school) or disabled. If no annuity is paid to widow, \$20 per month per eligible child. Widow receives annuity until death or remarriage. Maximum family benefit is 75% of final salary.

If there is no surviving widow or eligible children, a lump sum amount equal to the member's contributions plus one year's final salary (subject to applicable salary cap), but not less than \$6,000, will be payable to the employee's designated beneficiary.
 - ii) Should the member's death be non-service connected then a lump sum amount is paid which is equal to the member's contributions plus one year's final salary (subject to applicable salary cap) , but not less than \$6,000.

11. Post-retirement Death Benefits

Member contributions are refunded to the extent that they exceed retirement payments already made, unless a reversionary annuity was elected. Minimum payment is \$600. In addition, 50% of retirement annuity is payable to the surviving spouse until death, remarriage, or until the spouse begins to receive Social Security benefits. Minimum annuity, \$75 per month; maximum annuity, \$150 per month.

12. Reversionary Annuity

Member may elect to receive a reduced annuity in order to provide a lifetime benefit after death to a spouse or relative. The benefit to the spouse or relative may be as low as \$25 per month or as high as 100% of the member's reduced annuity. This option is not permitted if member retires on a disability annuity.

13. Christmas Bonus

A \$400 annual bonus is given to all retired participants.